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**MASTER THESIS**

Title: **Enterprise Resources Planning Management System.**

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## ABSTRACT

Enterprise Resource Planning is a system to integrate the data & processes of a company in one single system. ERP System used at more companies, does not matter company is, small or large. ERP system must cover an organization functions. By this way it is easy to control organization over ERP. Example: Human resource, supply chain management, finance, manufacturing, warehouse management and etc functions. All these business units usually collected under one application roof, called ERP.

Always ERP helps an organization to decrease operational costs, on time right product delivery, tracking orders, inventory management, customer services, and to make better visibility to take quick decisions. Implementation of ERP System requires having many hardware and software to realize a project.

Today all sized enterprises try to automate its business processes. But this process goes very slow in our country. Because of this project is very expensive and lack of operational managers. For realization of ERP project this thesis shows important steps and required planning for the ERP implementation process.

This thesis consists of five parts.

**First part** introduces ERP fundamentals, Especially historical chronology of business software and implemented software packages according business sector.

**Second part** is about project management of ERP system, its project plan according a different data models or process steps.

**Third part** talking about business case requirement of a company. Dictates important factors of package choosing, implementation and change advantage of current processes and development.

**Fourth part** is about change perspective of a company, 8 possible alternatives in implementing ERP.

**Fifth part** is a practical building an ERP example.

So ERP Software package provides an intelligence solution to keep your organization nimble and to lead among competitors.

## XÜLASƏ

Təşkilat Resurslarının Planlaşdırılması sistemi verilənlər və prosesləri qarşılıqlı əlaqələndirmək üçün vahid sistemidir. Təşkilatların kiçik və ya böyük olmasından asılı olmayaraq, Təşkilat Resurslarının Planlaşdırılması sistemi hazırda əksər şirkətlərdə istifadə olunur. TRP şirkətin bütün funksionallığını əhatə etməlidir. Bu yolla ERP üzərindən şirkətin idarə olunmasını asanlıqla icra etmək olar. Nümunə: İnsan resursları, təhcizat idarəçiliyi, maliyyə, istehsalat, mal anbarı idarəçiliyi və digərləri. Bütün biznes bölmələr adətən bir tətbiqi programlar adı altında birləşərək, Təşkilat Resurslarının Planlaşdırılması ilə adlanırlar.

TRP sistemi təşkilatda əməliyyat qiymətlərinin aşağı salınmasını, məhsulun vaxtında doğru ünvana çatdırılmasını, sifrişlərin izlənilməsini, inventar idarəçilik, müştəri xidmətləri və çevik qərar qəbul etməyə daha yaxşı kömək edir. TRP layihəsini həyata keçirmək çox sayda dəmir məmulatları və program təminatı tələb edir.

Bu günləri müxtəlif sayda təşkilatlar çalışırlar ki, öz biznes əməliyyatlarını avtomatlaşdırsınlar. Ancaq bu proses bizim ölkəmizdə çox yavaş getməkdədir. Səbəb layihənin bahalı və əməliyyat idarəçilərinin qıt olmasıdır.

Bu tezis Təşkilat Resurslarının Planlaşdırılması layihəsinə tələb olunan vacib addımları və həyata keçirilməsi planını müzakirə edir.

Tezis 5 hissədən ibarətdir.

**Birinci hissə** TRP əsasların, xüsusi ilə biznes sahəyə uyğun xronoloji ardıcılığı və biznes sahəyə həyata keçirilmiş proqramları bəhs edir.

**İkinci Hissə** TRP sisteminin layihə idarəçiliyi, müxtəlif verilənlər modelləri və ya posess addımları haqqındadır.

**Üçüncü hissədə** Təşkilatın biznes təlabatı haqqında danışılır. Buradaproqram paketinin seçilməsi, yerinə yetirilməsi, cari porsələr və inkişaf üstünlüklərinin vacib faktor olması şərh edilir.

**Dördüncü Hissə** Təşkilat Resurslarının Planlaşdırılması gozlənilən 8 mümkün icra dəyişiklər barədədir.

**Beşinci hissə** TRPnin praktiki qurulmasına aiddir.

Beləliklə TRP program təminatı mükəmməl həllərlə yanaşı təşkilatı zirək digər, iştirakçılar arasında öncü edir.

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## INTRODUCTION

Enterprise Resources Planning systems provide different benefits to all companies. At the same time ERP systems are powerful software which is supplying companies to integrate different technology. They integrate departments like warehouse, sales, logistics, production etc. by this way produced data in a department becomes immediately available to other departments. A business action is entered only once according its department and its status is changed at other departments according to the workflow of actions. There is no need to enter same information a few times.

ERP system is a chance to fulfill organizational standardization. It forces a company to be a single automation soft to its customers and vendors. Created documents and produced data in different departments, locations and plants can be a common structure under hierarchy. ERP systems can help to companies at improvements the way of doing successful business.

But an implementation process of ERP system very difficult. Many ERP implementation projects failed to insufficient planning, lack of the knowledge in project teaming or missing risk analysis. Implementing successful ERP requires the process of selecting appropriate practices provided by ERP vendor or advisor.

## **1. ERP FUNDAMENTALS**

### **1.1 Definition**

“The enterprise resource planning (ERP) system is an integrated set of programs that provides support for core organizational activities such as manufacturing and logistics, finance and accounting, sales and marketing and human resources. An ERP system helps the different parts of the organization share data and knowledge, reduce costs, and improve management of business processes” (Stratman, J. and Roth, A., 1999)<sup>[1]</sup>.

Enterprise Resource Planning system is a strong integrated software package which consists of many modules & helps to company to automate and integrate its business processes. An ERP system provides an easily accessible software environment to share common data.

An ERP system affects to big corporations in the world and is used by many of the multinational companies. At the same time ERP affects small and medium companies; such as like ERP consultants earnings half of their net profit from small and medium companies. Day-to-day an ERP system increases a competitive advantage. Because ERP consultants creating and making successfully changes at improvement of system. Implementing of ERP systems makes companies need more information. That company can easily use information and integrate it into its technology and business processes. As a result, that company’s vendors and customers need to fit to the changes that will occur in ERP organizations.

## 1.2 History

### 1.2.1 ERP Chronology

Figure below displays an early **Chronology** of Enterprise Resource Planning.

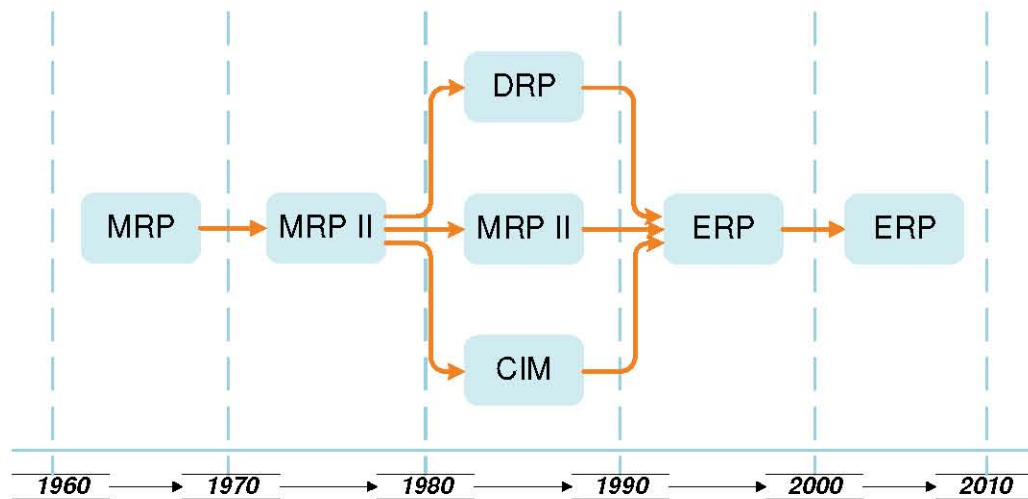


Figure 1.1 ERP Chronology.

**Material Resource Planning** – “MRP were the first off-the-shelf business applications to support the creation and maintenance of material master data and bill-of-materials (demand-based 14 planning) across all products and parts in one or more plants. These early packages were able to process mass data but only with limited processing depth .” (Klaus, 2000). [2]

**Material Resource Planning II**– “During the 1970s, MRP packages were extended with further applications in order to offer complete support for the entire production planning and control cycle. MRP II was initiated with long-term sales forecast to encompass new functionality such as sales planning, capacity management and scheduling (Klaus, 2000). Then in the 1980s, MRP II were extended towards the more technical areas that cover the product development and production processes.

Computer Integrated Manufacturing (CIM) supplied the entire conceptual framework for the integration of all business administrative and technical functions of a company. Such as finance, sales and distribution, and human resources”(Klaus, 2000). [3]



**Distribution Resource Planning** - DRP is a method used in business administration for planning orders within a supply chain. DRP enables the user to set certain inventory control parameters (like a safety stock) and calculate the time-phased inventory requirements. This process is also commonly referred to as Distribution Requirements Planning.<sup>[4]</sup>

**Computer-integrated manufacturing** - CIM is the manufacturing approach of using computers to control the entire production process.<sup>[5][6]</sup> This integration allows individual processes to exchange information with each other and initiate actions. Through the integration of computers, manufacturing can be faster and less error-prone, although the main advantage is the ability to create automated manufacturing processes. Typically CIM relies on closed-loop control processes, based on real-time input from sensors. It is also known as flexible design and manufacturing.

### 1.2.2 The beginning

It all began with 5 IBM engineers from Mannheim, Germany, working nights and weekends on the next big thing in software: ERP, Enterprise Resource Planning. The year was 1972, and the business software world was a spaghetti of systems, vendors and technologies. Departments could not communicate with each other because their software systems spoke different languages. Babel tower of custom applications. SAP was about to change everything. They called the company Systemanalyse und Programmentwicklung (“System Analysis and Program Development”) and incorporated in April of 1972. They had their first customer that year (probably the shortest sales cycle for SAP ever!!), ICI, which is still an SAP customer, 35 years later.

At that time, MRP software was becoming widely regarded as a key to success in efficient manufacturing operations. Accounting software was around for more than a decade, dominated by solutions from IBM. Integrating the two was (and still is) a nightmare. In 1973, SAP was ahead of everyone else in the integrated business applications industry, releasing R/1. In 1979 it will release the R/2 ERP application.

### 1.2.3 Competition

Meanwhile, across the Atlantic, 3 accounting firm employees – Jack Thompson, Dan Gregory, and Ed McVaney, realizing how appealing complete business management software would be to their customers, started **J.D. Edwards**. The year was 1977, five years after SAP released **R/1**. JD Edwards initially targeted small and medium business, building their solution to run on IBM hardware.

Earlier, in 1975, **Laswon** software, founded by Richard Lawson, Bill Lawson, and John Cerullo, begins building their own ERP solution.

Back in 1977, a young charismatic former Ampex employee, who wrote a database application for the CIA, by the name of **Larry Ellison**, started his own company – Software Development Laboratories (SDL). No-holds-bar Ellison would later change the competitive landscape of the entire ERP industry.

A year later, Jan **Baan**, a dutch carpenter and business consultant, starts a financial consulting company. One of his early customers pays him with a computer, and Baan starts building custom software for his customers. He would later hire several programmers and develop a comprehensive business application suite, targeted at small and medium businesses. In 1987, **Oracle**, formerly SDL, starts building business management applications. Oracle was already selling its database software to a huge customer base, and providing business applications that would utilize its customer base and database technology, made a lot of sense. The exponential growth in demand for database software that can handle ever increasing amounts of data, made Oracle a rich company. A lot of that cash would later be used by Oracle to slowly digesting its competitors. That year, though, it acquired a small company that created project management software. In 1989, it sold its first manufacturing solution.

Another successful ERP vendor to start late, but still gain traction is **Peoplesoft**, founded in 1987 out of Walnut Creek, California. They initially focused on Hr solutions, gradually becoming a complete ERP solution.

### 1.2.4 Booming ERP Industry

The 80's and 90's were booming for ERP solutions. Market size grew millions of dollars to Billions of dollars annually. SAP waste best positioned as the clear leader, releasing the most successful ERP solution to date – SAP R3, generating 1.7B DM out of a total revenue of 2.7B DM. J.D. Edwards maintained an annual growth rate of 54% from 1977 to 1994, with revenue of 240M\$ that year alone. By 1995, Baan has about 1,800 customers and 1,000 employees. Oracle continued to develop its own ERP solution, Oracle E-business suite, and strong sales of its database software allowed for rapid expansion through small acquisitions.

### 1.2.5 Challenges

But not everything was perfect for the ERP industry. ERP quickly began to be viewed as an expensive, complicated, requiring too many resources to maintain properly. ERP implementation took longer than expected and project budgets were never met. Many companies started questioning the whole concept of ERP. Several high profile failures made things worse for some of the smaller vendors.

### 1.2.6 Consolidation and Transformation of ERP

Year 2000 signals the beginning of a long consolidation process in the ERP industry. Oracle's uncontrolled shopping spree (over 50 acquisitions) included its largest competitors (outside of SAP) J.D. Edwards and Peoplesoft. **Microsoft** entered the arena with equations of smaller ERP vendors Naivions, Great Plains and others. **Infor** picks up the remaining of Baan and Mapics. Later into the decade, two disruptive business and technology models are about to completely transform ERP: open source ERP solutions become an alternative to proprietary ERP, focusing on small medium business, and software as a service, offering complete ERP functionality over the Internet, is considered as the preferred model for business applications for the huge, yet untapped, SME business applications market. <sup>[7]</sup>

### 1.3 Benefits

One of the main reasons of using ERP systems is to making possible sharing an online information sharing and flow step-by-step throughout all departments, plants and other business units of a company. But from organizational side practical benefits are divided into five blocks by Seddon (Seddon, Shanks and Willcocks, 2003): operational, managerial, strategic, IT infrastructure, and organizational.



Figure 1.2 Seddon's five blocks.

**Operational** benefits are “automating business processes and enabling process changes, they can offer benefits in terms of cost reduction, cycle term reduction, productivity improvement, quality improvement, and improved customer service.”

**Managerial** benefits are “with centralized database and built in data analysis capabilities; they can help an organization achieve better resource management, improved decision making and planning, and performance improvement.”

**Strategic** benefits are “large-scale business involvement and internal/external integration capabilities; they can assist in business growth, alliance, innovation, cost, differentiation, and external linkages.”

**IT Infrastructure** benefits are “integrated and standard application architecture, they support business flexibility, reduced IT cost and marginal cost of business units’ IT, and increased capability for quick implementation of new applications.”

**Organizational** benefits are “affect the growth of organizational capabilities by supporting organization structure change, facilitating employee learning, empowering workers, and building common visions” (Seddon et al., 2003).

## 1.4 Advantages

At software automate request is entered once and it available for all departments to operations modules and transactions immediately. It eliminates the data redundancy problem. Management of data can be done more easily. Additionally, ERP provides a chance for a company to renew and develop its business processes.

In the ERP system, large manufacturers tracking own production strategy with many software applications. Software applications Task interface involve:

1. Best to design product engineering.
2. Best making a product.
3. Product order tracking.
4. The revenue system from invoice through cash receipt
5. Independently manage to huge amount of materials & bills

## 1.5 Disadvantages

ERP systems are inherently very expensive. In addition to initial costs, support costs can also be very high. Different companies will find out different software according a company budget and that company which is implemented ERP package agree to that costs and common way to all companies that they must follow up a few steps to implement ERP.

**Training** — Training is an important choice of experienced ERP implementers as the most underestimated budget item.

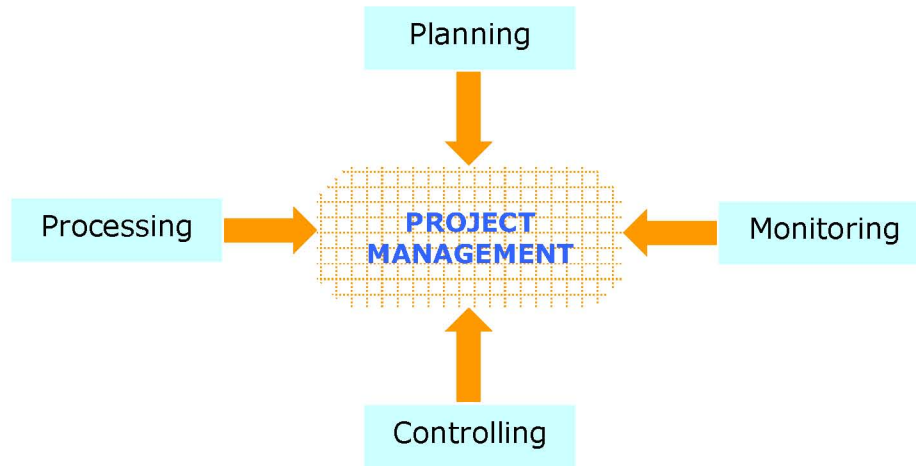
**System Testing and Integration** — Testing the links between ERP packages and other corporate software links that have to be built on a case-by case basis is another often-underestimated cost.

**Customization** — Add-ons are only the beginning of the integration costs of ERP. Much more costly, and something to be avoided if at all possible, is actual customization of the core ERP software itself.

**Data conversion** — It costs money to move corporate information, such as customer and supplier records, product design data and the like, from old systems to new ERP homes. Implementation and support requires the company to find skilled and educated personnel in order to achieve a successful implementation and use the software effectively. Customization needs can also be problematic. Resources must be attached in order to customize the software. Moreover, heavy customization brings nightmares during upgrades to new versions of the ERP package.

## 2. PROJECT MANAGEMENT & SYSTEM FAILURES

Project management consists of planning, monitoring and controlling the project staff and processes within an ERP project.



**Figure 2.1 Project Management figure.**

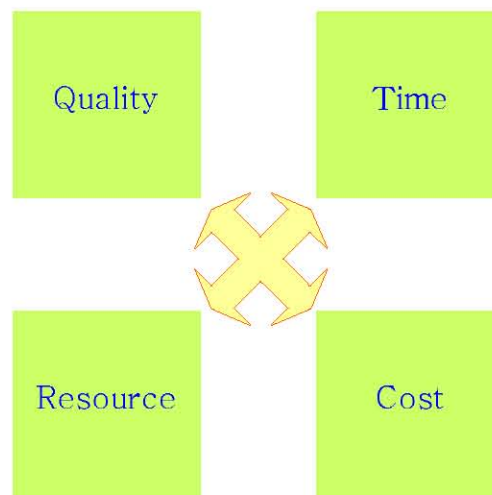
“Project failures are all too common – some make the headlines, the vast majority are quickly forgotten. The reasons for failure are wide and varied. Some common causes are:

1. Lack of co-ordination of resources and activities.
2. Lack of communication with interested parties, leading to products being delivered which are not what the customer wanted.
3. Poor estimation of duration and costs, leading to projects taking more time and costing more money than expected.
4. Insufficient measurability.
5. Inadequate planning of resources, activities, and scheduling.
6. Lack of control over progress so that projects do not reveal their exact status until too late.

Without the correct experience and knowledge, those who commission a digitization project, those who manage it and those who work on it will have different ideas about how things should be organized and when the different aspects of the project will be completed.”<sup>[8]</sup>

## 2.1 Project Lifecycle

ERP projects are long projects a requiring huge amount of human and technical resources. It's often very difficult to control and follow the cost, budget and time set at the beginning. This is one of the biggest failure factors of ERP projects. Because of this, project management activities need to be carefully planned from the scratch. Activities related to controlling, monitoring and tracking the progress of the ERP project, and updating the plans has to be planned. Project plans must include quality plans, in addition to timing plans, resource plans, and cost plans.



**Figure 2.2. Project plans.**

An issue often neglected or missed during project management is risk management. Both internal and external risks have to be controlled and monitored during the whole lifecycle.

## 2.2 Analyzing a System

System analysis is about analyzing current system and determining requirements before the ERP project implementation. Results obtained from the analysis process become the input of implementation. However, analysis results sometimes uncover problems of the business processes. It is important to avoid making changes in ERP implementation just to fit those problems.

Instead, problems in business processes should be solved before the implementation. To understand the system, I will discuss at next paragraph the brief definition of these models **context model, data flow diagram & process flow diagram**



## 2.3 Context models

Context models answer two questions about database design:

1. Where do we start?
2. How do we know the design is correct?

The answers lie in something called a context model. A context model is model that shows how IT applications fit into the context of the people and the organization they serve. Context models are sometimes called enterprise architecture models, sometimes high-level design models and sometimes conceptual model.

What's a model? A model is a simplified representation of something real or imaginary. You must have a simplified mental model of how IT applications and databases work in the real world. Models are used primarily to help others understand the thing you are modeling. This is obviously true for scale models of ships or buildings but is just as true for models of IT systems. IT has many different kinds of diagram showing different aspects of the system at different levels of detail. This is partly addressed by having a common data store so the same information in different diagrams has one source. However the data must be structured according to the logic of the system being modeled rather than follow the structure of the diagrams, otherwise we never get real data sharing between the different views.

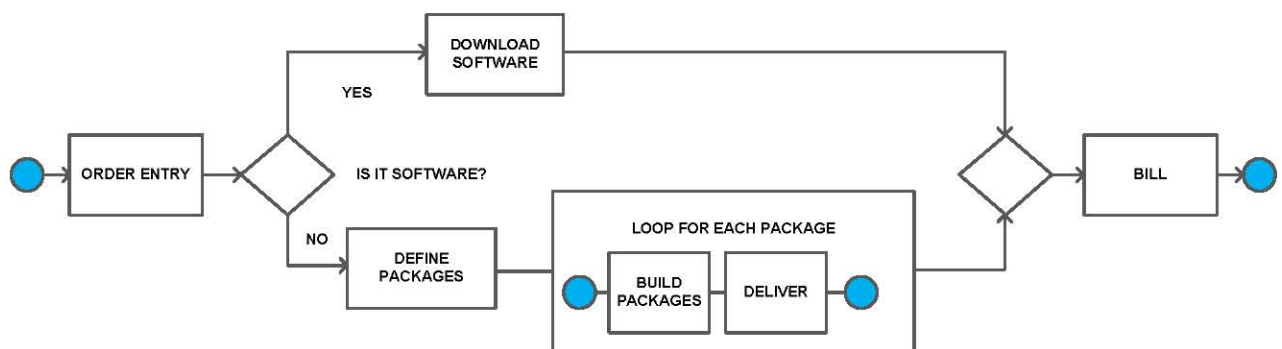


Figure 2.3. Context model model.

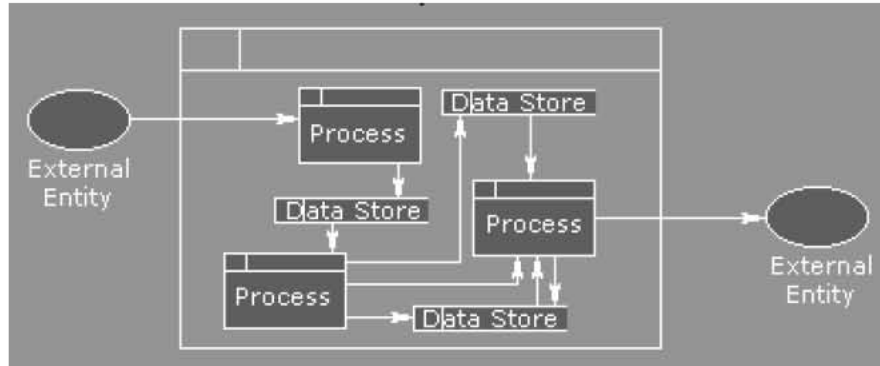
So to answer the two questions posed at the start of this article.

1. How do you start a database design? Build a context model.
2. How do you know a database design is correct?

You know it's correct if it supports the context model, the logical model and the criteria for correctness for these two models. <sup>[9]</sup>

## 2.4 Data flow models

Data flow diagrams can be used to provide a clear visualize representation of any business function. The technique starts with an overall picture of the business and continues by analyzing each of the functional areas of interest. This analysis can be carried out to precisely the level of detail required. The technique exploits a method called top-down expansion to conduct the analysis in a targeted way.



**Figure 2.4. Data flow model.**

The result is a series of diagrams that represent the business activities in a way that is clear and easy to communicate. A business model comprises one or more data flow diagrams (also known as business process diagrams). Initially a context diagram is drawn, which is a simple representation of the entire system under investigation. There are only five symbols that are used in the drawing of business process diagrams (data flow diagrams). These are now explained, together with the rules that apply to them.



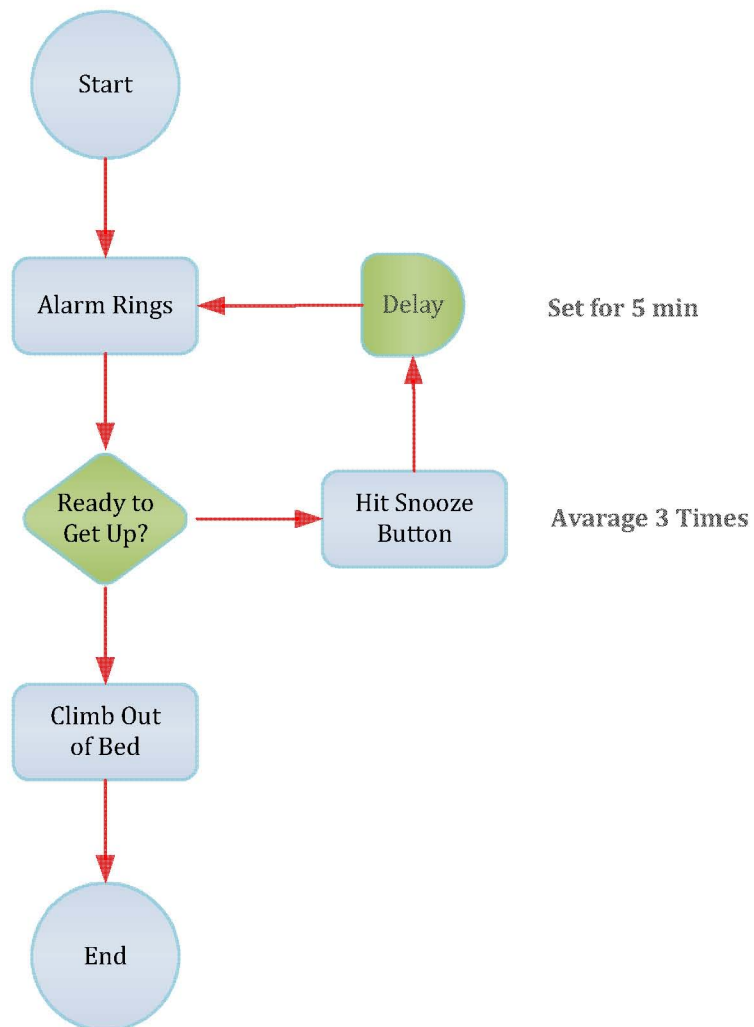
**Figure 2.5. Data flow model.**

This diagram represents a banking process, which maintains customer accounts. In this example, customers can withdraw or deposit cash, request information about their account or update their account details. The five different symbols used in this example represent the full set of symbols required to draw any business process diagram. <sup>[10]</sup>

## 2.5 Process flow models

Process flowchart or PFD is also known as the system flow diagram or SFD. The main reason of using process flowchart is to show the relation between major parts of the system. Process flowchart are used primarily in process engineering and chemical industry where there is a requirement of depicting the relationship between major components only. These process engineering and chemical industry are least concerned about the minor components involved in the system. Involves creating a flow model that illustrates and analyzes the overall flow of activities in producing a product or service.

Flowcharts use special shapes to represent different types of actions or steps in a process. Lines and arrows show the sequence of the steps, and the relationships among them. <sup>[11]</sup>



**Figure 2.6. Process flow models.**

### **3. SELECTING SOFTWARE.**

#### **3.1 Business Case and ERP Selection**

System analysis phase reveals the requirements of the company. These requirements can be business process related, technological, strategic, or they can result from competition. This set of requirements makes the business case of the ERP project. This business case needs to be correct and clear because the business case is the reason for the existence of the project. During the project, the validity of the business case is checked. If it is found that the requirements contained in business case lost their validity then the project may have to be canceled. Business case also provides the input to software selection phase. Technological requirements can be summarized as: difficulty in management of isolated software “islands” that do not interact with each other. Requirements like a productivity improvement and increase in customer quality expectations are process related requirements of the business case. Merging of a few companies can be an example of strategic requirement. Often there will be competitive reasons such as ERP use of competitors or business partners.

#### **3.2 Choosing an ERP Package**

The weaknesses and opportunities of the company are shown with the system analysis phase. These results can lead to decision to buy an ERP system. These results also provide a basis in comparison of the alternative ERP packages. The most important selection criteria are how well an ERP package solves the business problems of the company. Second most important factor is costs of the potential ERP software packages. Another important criterion is whether the ERP package supports modification. Another very important selection criterion is the reputation of the software package, especially in selection making company’s sector. User friendliness and power and experience of the support team are important point in ERP selection.

### **3.3 Software implementation.**

ERP software is one of the largest types of software ever written in terms of complexity and code base size. It is due to its application to almost every department within an organization. ERP implementation involves large number of members with different roles such as analysts, programmers, users, and consultants for installing updates and patches. Without getting professional help from specialized companies, ERP implementation projects can be very costly and time consuming, especially in bigger organizations. By consulting to and getting support from a company offering ERP services, an ERP implementation project can be completed in a relatively shorter time period, including testing. ERP implementation project within a firm is often done with getting help from an ERP vendor or a firm specializing in that particular ERP package. Typically, there are two types of services offered by ERP consulting companies:

1. Business consulting services. Business consulting is about analyzing business processes and matching them to ERP software by making customized configuration within the bounds of parameterization offered by ERP software.
2. Technical consulting/development services. Technical consulting is about modifying and/or extending source code of the ERP software in order to meet the special needs of the company. It often makes sense when ERP software lacks the functionality needed by the company or when it's impossible to achieve it by configuration changes (e.t.c by business consulting services).

Customization is not always easy; it often brings problems because not all ERP systems support customization very well. It can often be desirable to implement common best practices included in the ERP package itself in order to get rid of the risks and complications involved in modification. Some functionality can be too generic to be directly usable. In that case a firm can consider buying a third party tool that integrates well with that particular ERP software or its database system.

### **3.4 Process Modeling in ERP Implementation**

ERP implementation brings an important decision to the company, whether to change its business processes to match the ERP system or change the ERP software to match the current business

processes, or both. During the analysis phase of the ERP implementation a company can model the current business processes if it chooses not to change existing processes. This type of modeling is sometimes called “as is” modeling. A company can choose to improve its current processes by modeling the processes that it needs, instead of modeling current business processes. This kind of modeling is sometimes called “to be” modeling.

### **3.5 Modeling Current Processes**

If a company choosing not to renew existing processes, then current process modeling can be used to show whether the chosen ERP software fits the company needs. There is a tradition in companies that are implementing ERP systems to improve existing processes by utilizing the change opportunity that comes with the implementation of the ERP, so in these cases this kind of modeling does not bring important benefits.

### **3.6 Modeling New Processes**

If a company chooses and plans to modify and continue to develop chosen ERP software then new process analysis leads to new process developments. But if a company does not plan to modify ERP software than this type of modeling and analysis can be used as an ERP choosing process - choosing which processes to use from the set of processes provided by ERP package.

## **4. TYPES OF CHANGES IN IMPLEMENTATION**

From a change perspective, a company implementing ERP can walk a path from 8 possible alternatives:

### **4.1 Business Process Change**

ERP implementation provides an opportunity to rethink and change existing processes, but some companies see it as a limitation in ERP package. They think that if the software were able to support a wider range of business processes, then there would be no need to make process changes.

First advantage of this alternative is that implementation of new versions of the ERP software would be very easy because ERP software would not be changed.

In an ERP package all modules are integrated. Making changes in one of them may require a change in another one. By not making changes in software, company gets rid of the risks and costs associated with these propagating changes. This can be thought as second advantage of this alternative.

Not making software changes brings another important advantage: not requiring change maintenance. If a company makes software changes then it requires continuing maintaining of the changes and extra expertise to support this process.

Matching business processes to those available in ERP software helps a company to standardize its processes. But sometimes matching a business process to a generic process provided by ERP can be a disadvantage. If the existing process created a value then replacing it to the closest one in ERP may lead to unpredicted and strange behavior.

## **4.2 Software Changes**

Instead of changing business processes to match the software, companies may choose to change the software to match their existing business processes or to implement some best practices not provided by ERP software. Disadvantage of this kind of change is that changing the software makes it very difficult to maintain the software and upgrade to new versions. Making modifications, maintaining them, and redoing modifications when upgrading to new versions brings costs in terms of both money and time. “Customization of ERP software is an unavoidable in any implementation, though the extent of customization may vary. But it is advisable to exercise discretion in the customization process to balance the benefits and the challenges involved in the process. While customization promises a better fit ERP software solution for the company, it directly affects the budget and timelines. Finding a middle way is a delicate process that needs proper evaluation of options available.” (iSummation Technologies, 2007) <sup>[12]</sup>

## **4.3 Business Process Changes and Software Changes**

A company implementing ERP may choose to make software changes and make changes in company's business processes. Successful implementation of this alternative makes company get the ERP software and business processes it desired. ERP provider or ERP consulting company or vendor may share some of the costs of this alternative, because the processes are implemented first time. However, changing the software can be very costly. Generally, big companies may have courage to use this alternative. Alternatively, the more ERP software is customized to meet specific business needs, the less it is likely to meet other business needs. As a result, making major changes in software or implementing specific best practices may actually limit ERP sales to other firms.



#### **4.4 Improvement in ERP Package Functionality**

Sometimes, the ERP vendor cooperates with the ERP implementing company expanding the product capabilities of its ERP package by making widespread software changes. In this case ERP vendor can increase the set of available best practices and modules in ERP package. Thus, widespread software changes lead to industryspecific versions of the ERP software. Cooperating with ERP implementing companies gives a chance to share some of the development costs with implementing companies. Extending process set by partnering with an ERP implementing company in its ERP package, makes an ERP vendor able to sell its new processes to other companies.

#### **4.5 ERP Implementation Issues**

Among the people involved in ERP project, management, project team, external consultants and users play key roles and have great impact on ERP implementation. Relationships between ERP provider and ERP implementing company, support and tools provided by vendor also has great influence in ERP implementation project's success.

#### **4.6 Management Support**

Management support is one of the most important factors in ERP implementation success. Support should come throughout the ERP project life cycle. In order to have a successful ERP implementation project, top management should regularly monitor the progress of the project. It also has to provide guidance to project team, help to set strategic business goals for the project and approve them. Among the most important factors for the success of ERP project is the top management commitment and support. The role of top management includes, developing an understanding of the capabilities and limitation of the system, setting goals, and communicating the corporate IT Strategy to all employees.

#### **4.7 Team Project**

Successful ERP implementation requires that project team have business skills besides technological skills. Ideally, members of project team should focus only on the ERP project; they should not be messed with unrelated work during the implementation. Information sharing among project team members also plays important role in success.

#### **4.8 External ERP Consultants**

When implementing an ERP, a company should consider using external ERP consultants to gain more experience, expertise and knowledge of ERP system. External consultants often make requirement analysis and provide solutions to problems and requirements within the ERP system. External consultants also can bring detailed knowledge of the different modules in ERP package.

## 5. IMPORTANCE OF ERP

To day organizations switching to ERP systems and understands its importance. It helps to decrease:

- Big paper piles,
- Waste of papers,
- Office printers,
- Pen-pencils, sticker, steeples and etc
- Nervous calculations
- Office equipment.

Normally a lot of papers was kept at special offices which is security protects that buildings, use of electricity, service to carry out huge amount documents, to keep a documents under a stable air condition and most waste of a time of an office personals.

To prevent all these type of problems it is possible to build an ERP System and control it with a few personals and ready applications. But realization of ERP application and maintenance is an expensive service. For example: For building an ERP system need to buy at least 2 servers and Oracle software. Approximately price \$3000 USD. Also buying an Oracle Enterprise suit 12.0 with a five license is \$4000 USD. To avoiding an expensive programs like to ORACLE and SAP we may use of less expensive software. Purpose here is to create a tracking and management system. Less expensive products has a fixed functionality always doesn't matches functions of a business unit.

## 5.1 Building an ERP Example

To perform our task we will use the following software products shown below.

Please see **Figure 5.1**

- Microsoft Windows XP Professional
- Microsoft Office Word 2003
- Microsoft Office Access 2003
- Microsoft Office Visio 2003

To build a practical ERP we must define boundaries of our business unit. Exactly what we will do & how will implement it need to follow up some actions.

- Define your departments and sketch them.
- Define department's functions.
- Sketch process charts of all departments.
- Visualize relationships between them.
- Create relationships among Tables IDs.
- Try to move your block tables to Microsoft Access or SQL and assign a unique ID to each.
- Run a Queries, Forms.

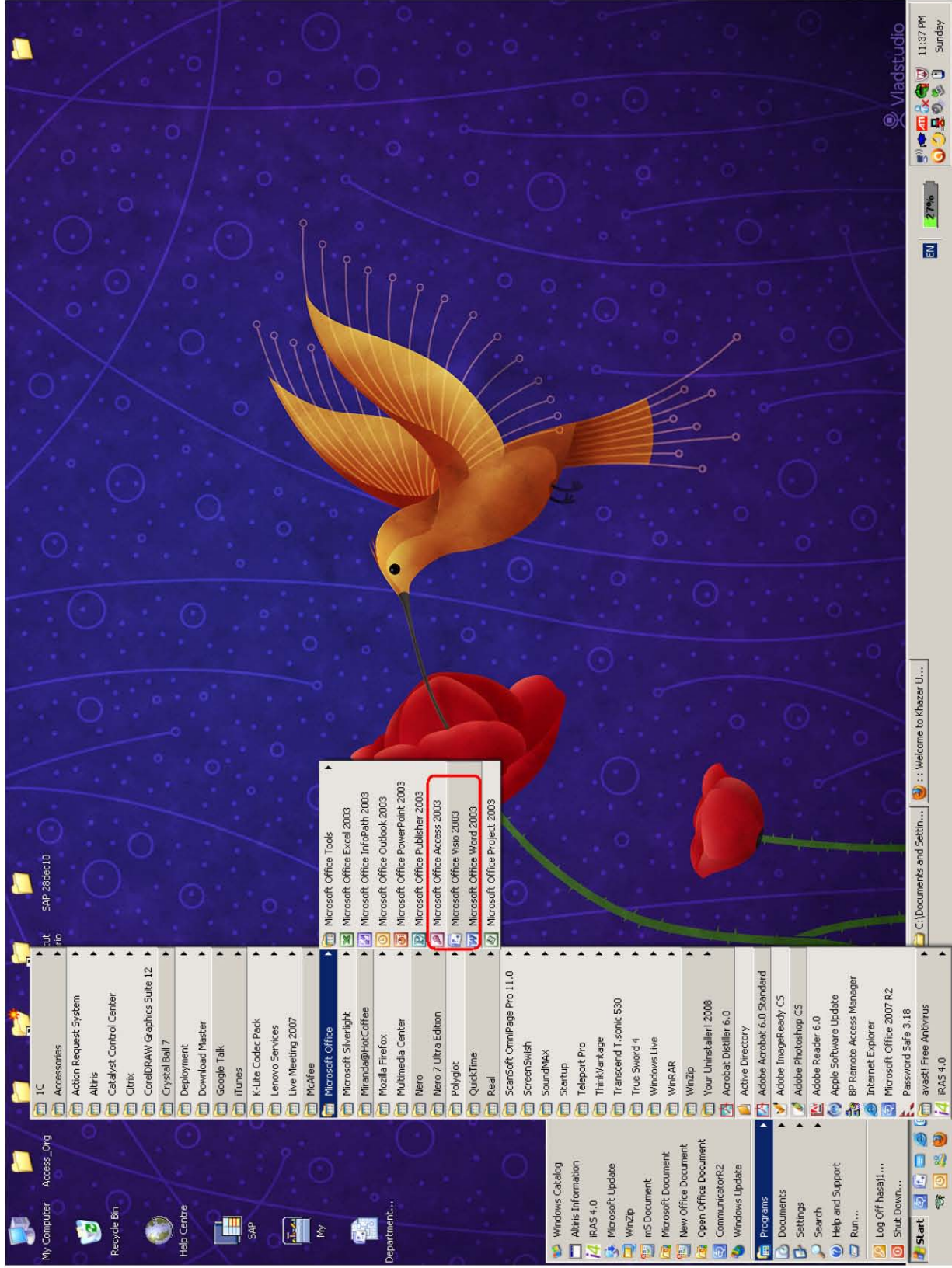


Figure 5.1 Microsoft Windows XP Professional user interface and Installed soft wares.



**Figure 5.2. Define your departments and sketch them.**

Customer
CustomerID
CompanyName
ContactName
ContactTitle
Address
City
Region
PostalCode
Country
Phone

Employee
EmployeeID
FirstName
LastName
Title
TitleOfCourtesy
BirthDate
HireDate
Address
City
Region
PostalCode
Country
Phone
Office Ext
Photo

Category
CategoryID
CategoryName

Order Details
OrderID
ProductID
UnitPrice
Quantity
Discount

Orders
OrderID
CustomerID
EmployeeID
OrderDate
RequiredDate
ShippedDate
ShipVia
Freight
ShipName
ShipAddress
ShipCity
ShipRegion
ShipPostalCode
ShipCountry

Products
ProductID
ProductName
SupplierID
CategoryID
QuantityPerUnit
UnitPrice
UnitsInStock
UnitsOnOrder
ReorderLevel
Discontinued

Supplier
SupplierID
CompanyName
ContactName
ContactTitle
Address
City
Region
PostalCode
Country
Phone
Fax
HomePage

Shippers
ShipperID
CompanyName
Phone

Figure 5.3 Department's functions.

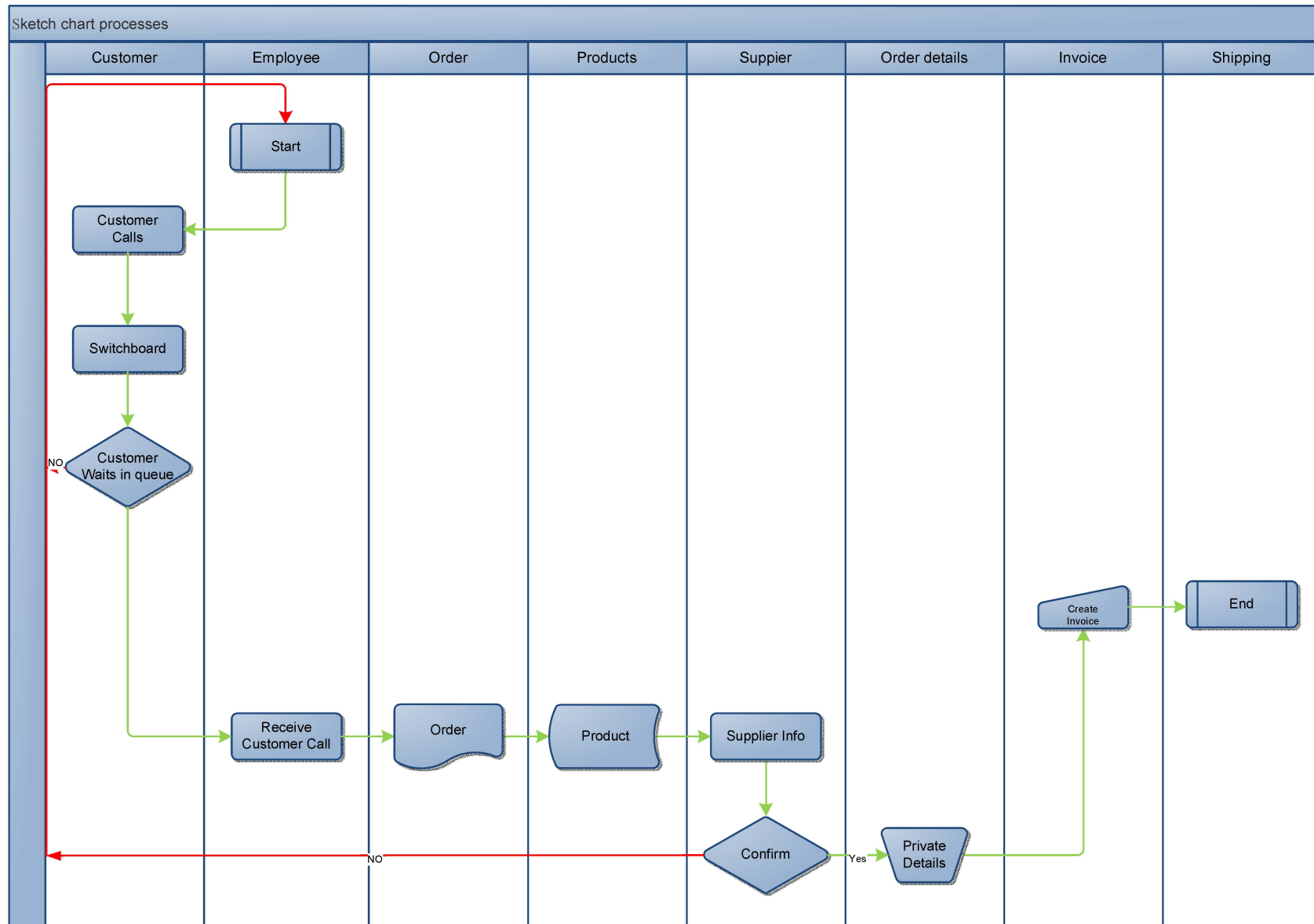


Figure 5.4 Sketch process charts



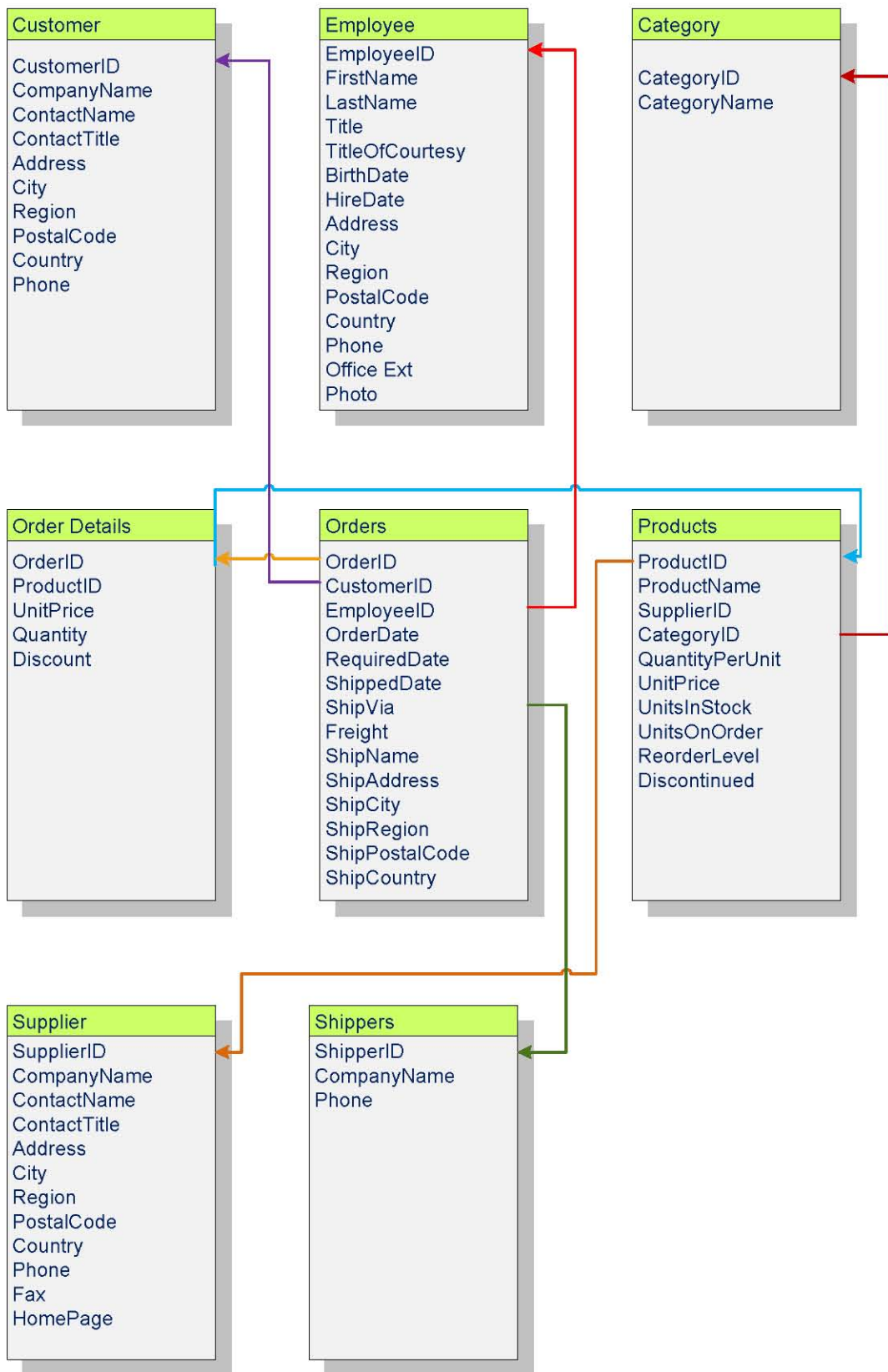


Figure 5.5. Visualize relationships between them

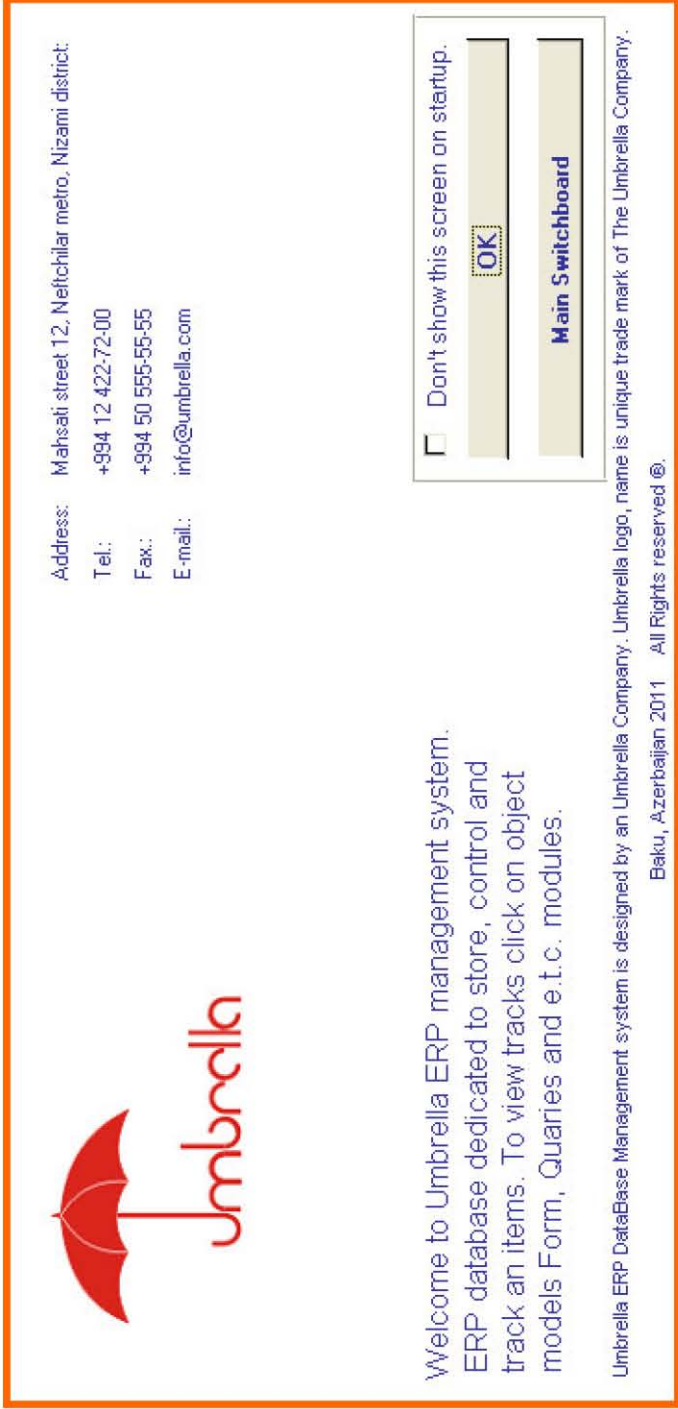


Figure 5.6. Design a startup to introduce program itself.

## Create relationships among Tables ID

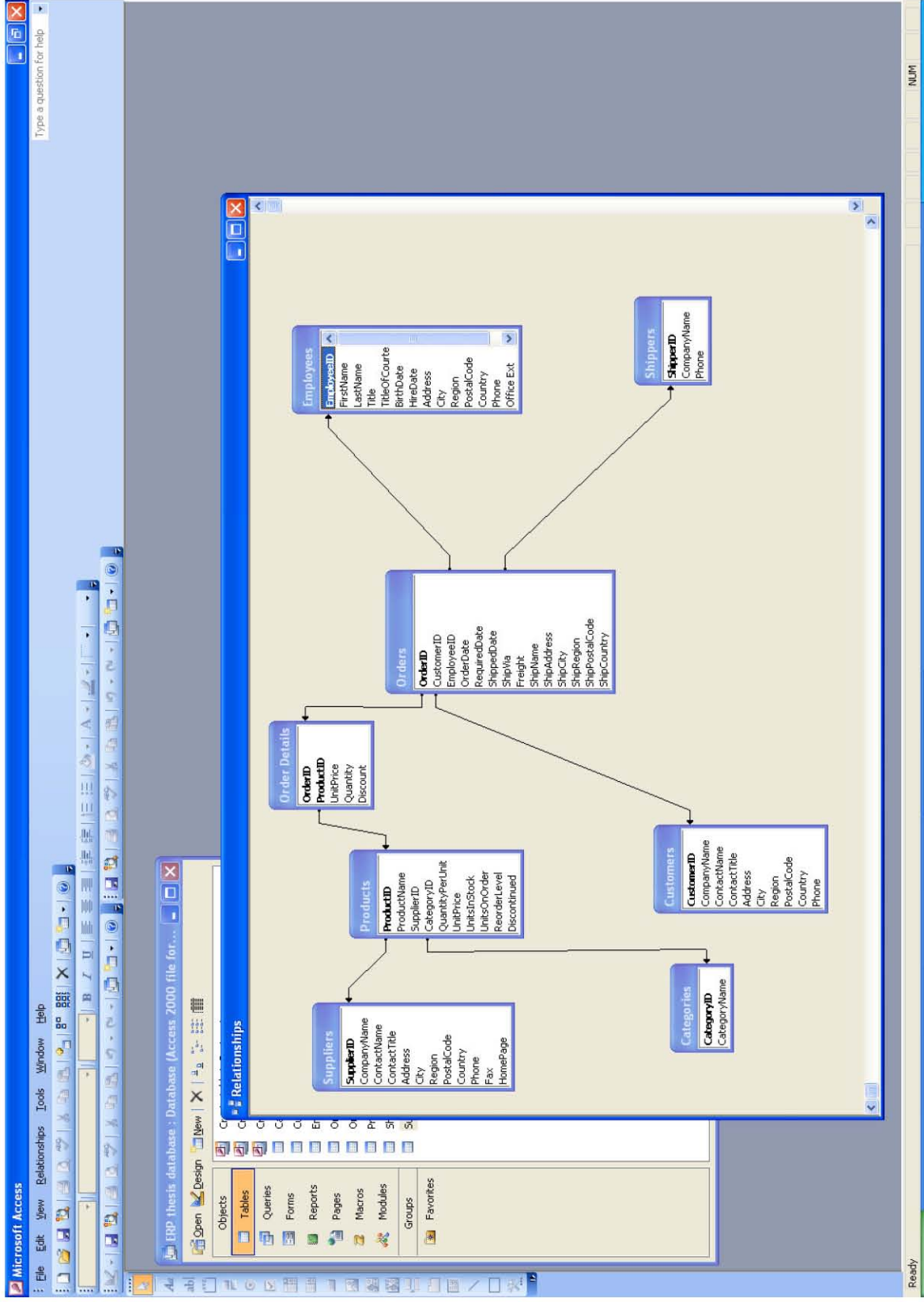


Figure 5.7 Relationships among Tables ID

Try to move your block tables to Microsoft Access or SQL and assign a unique ID to each.

CustomerID	Company Name	Contact Name	Contact Title	Address	City	Region	Postal Code	Country	Phone
+ ALFKI	Swift	Abbas Husseinov	Sr. HSE Advisor	Suleyman Rustam 45	Baki	Az	Az1***	Azerbaijan	4978259
+ ANATR	Swift	Abbas Islamov	HSE	mikayil Mushiwig 37	Baki	Az	Az1***	Azerbaijan	2814617
+ ANTON	Swift	Antonio Moreno	Security	Mataderos 2312	México D.I		05023	Mexico	(5) 555-3932
+ AROUT	BP	Thomas Hardy	Security Adviser	120 Hanover Sq.	London		W4A1 1DP	UK	(171) 555-7788
+ BERGS	Baker Hughes	Christina Berglund	Order Administrator	Bergsvägen 8	Luleå		S-968 22	Sweden	0921-12 34 65
+ BLONP	Cameroon	Abdulla Algayev	Sales Representative	H Javid 545	Baki			Azerbaijan	4837189
+ BLOUS	Total	Frédérique Citeaux	Marketing Manager	24, place Kléber	Strasbourg		67000	France	88.60.15.31
+ BOLID	ENI	Martin Sommer	Base Management	C/ Araquil, 67	Madrid		28023	Spain	(91) 555 22 82
+ BONAP	ENI	Laurence Lebihan	Owner	12, rue des Bouchers	Marseille		13008	France	121.24.45.40
+ BOTTM	StatOil	Elizabeth Lincoln	Accounting Manager	23 Tsawassen Blvd	Tsawassen BC		T2F 8M4	Norway	
+ BSBEV	StatOil	Victoria Ashworth	Sales Representative	Fauntleroy Circus	Bergen		EC2 5NT	Norway	555-1212
+ CACTU	StatOil	Patricio Simpson	Sales Agent	Cerrito 333	Bergen		1010	Norway	135-5555
+ CENTC	Franklin Offshore	Francisco Chang	Marketing Manager	Sierras de Granada 9993	Detroit		05022	America	(5) 555-3392
+ CHOPS	Franklin Offshore	Yang Wang	Logistics Manager	Hauptstr. 29	Detroit		05022	America	(5) 555-3393
+ COMMI	Franklin Offshore	Pedro Afonso	Reservoir Eng	Av. dos Lusíadas, 23	Detroit		05022	America	(5) 555-3394
+ CONSH	Franklin Offshore	Elizabeth Brown	Drilling, Eng	Berkeley Gardens	Detroit		05022	America	(5) 555-335
+ DRACD	Rolls Roice	Adrian Chong	Order Administrator	Waiserweg 21	London	UK		UK	0241-039123
+ DUMON	Rolls Roice	Janine Labrune	Owner	67, rue des Cinquante Otages	London	UK		UK	0241-039124
+ EASTC	Rolls Roice	Ann Devon	Sales Agent	King George	London	UK		UK	0241-039125
+ ERNSH	Rolls Roice	Roland Mendel	Sales Manager	Kirchgasse 12	London	UK		UK	0241-039126
+ FAMIA	Rolls Roice	Aria Cruz	Marketing Assistant	Rua Ors 92	London	UK		UK	0241-039127
+ FOLIG	Rolls Roice	Martine Ran	Assistant Sales Agent	184 Tournai	London	UK		UK	0241-039128
+ FOLKO	Swift	Adrian Richmond	Authority &TS	Rgatan 24	London	UK		UK	0241-039128
+ FRANK	Swift	Afa Mamedzade	Cost Reporting Manager	Rgatan 22	Lisboa		8888	Portugal	40.32.21.21
+ FRANR	Swift	Afa Mamedzade	Marketing Manager	Rgatan 23	Lisboa		8080	Portugal	40.32.21.22
+ FRANS	Swift	Paolo Accorti	HSE & Engineering	Rgatan 25	Lisboa		4400	Portugal	40.32.21.23
+ FURIB	Swift	Lino Rodriguez	Sales Manager	Rgatan 26	Lisboa		1010	Portugal	40.32.21.24
+ GALED	SAIPEM	Eduardo Saavedra	Marketing Manager	Rambla de Cataluña, 23	Barcelona		1675	Portugal	40.32.21.25
+ GODO5	SAIPEM	José Pedro Freyre	Sales Manager	C/ Romero, 33	Barcelona		08022	Spain	(93) 203 4560
+ GOURL	SAIPEM	André Fonseca	Sales Associate	Av. Brasil, 442	Barcelona		41101	Spain	(93) 203 4561
+ GREAL	SAIPEM	Howard Snyder	Marketing Manager	2732 Baker Blvd.	Barcelona		04877	Spain	(93) 203 4562
+ GROSR	SAIPEM	Manuel Pereira	Owner	5ª Ave. Los Palos Grandes	Barcelona		97403	Spain	(93) 203 4563
+ HANAR	SAIPEM	Mario Pontes	Accounting Manager	Rua do Paço, 67	Barcelona		10817	Spain	(93) 203 4564
+ HILAA	SAIPEM	Carlos Hernández	Sales Representative	Carrera 22 con Ave. Carlos Soublette	Barcelona		05454	Spain	(93) 203 4565
+ HUNGC	ExxonMobil	Yoshi Latimer	Financial Reporting	City Center Plaza	Cowes		50228	Spain	(93) 203 4566
+ HUNGO	ExxonMobil	Patricia McKenna	NDS Team	City Center Plaza	Cowes	USA	(503) 555-6811	USA	(503) 555-6811
+ ISLAT	ExxonMobil	Helen Bennett	HSE & Technical	City Center Plaza	Cowes	USA	(503) 555-6812	USA	(503) 555-6812
+ KOENE	ExxonMobil	Philip Cramer	Logistics	City Center Plaza	Cowes	USA	(503) 555-6813	USA	(503) 555-6813
+ LACOR	ExxonMobil	Daniel Tonini	PSCM	City Center Plaza	Cowes	USA	(503) 555-6814	USA	(503) 555-6814
+ LANAI	ExxonMobil	Annette Roulet	Engineering Services	City Center Plaza	Cowes	USA	(503) 555-6815	USA	(503) 555-6815
+ LAUGB	ExxonMobil	John Steel	Base	City Center Plaza	Cowes	USA	(503) 555-6816	USA	(503) 555-6816
+ LAZYK	Hess Corp	Renate Messner	Marketing Manager	87 Polk St.	Walla Wall		99362	USA	(504) 555-6817
+ LEHMS	Hess Corp	Jaime Yorres	Owner	87 Polk St.	Walla Wall		99362	USA	555-7969
+ LETSS	Hess Corp	Carolee Gonzalez	Accounting Manager	87 Polk St.	Walla Wall		99362	USA	555-7969
+ LITAS	Hess Corp			87 Polk St.	Walla Wall		99367	USA	555-7969

Figure 5.8 CUSTOMER Table

Order ID	Customer	Employee	Order Date	Required Date	Shipped Date	Ship Via	Freight	Ship Name	Ship Address	Ship City	Ship F	Ship Country
+ 10248	VinNet Chips	Akhmedov, Rovshan	18-Jan-08	10-May-08	24-Apr-08	Aramex	32,38 man.	Vins et alcools Chevalier	59 rue de l'Abbaye	Reims	51100	France
+ 10249	Antonio Zimmer	Efendiye, Ayyub	02-Feb-08	25-May-08	18-Apr-08	DHL	11,61 man.	Toms Spezialitäten	Luisenstr. 48	Münster	44087	Germany
+ 10250	SAIPEM	Huseynov, Azuman	22-Jan-08	14-May-08	20-Apr-08	Aramex	65,63 man.	Hanari Cakes	Rua do Paço, 67	Rio de Janeiro RJ	05454	Brazil
+ 10251	Victo Electronics	Aliyeva, Gunel	22-Jan-08	14-May-08	23-Apr-08	DHL	41,34 man.	Victuailles en stock	2, rue du Commerce	Lyon	69004	France
+ 10252	Super Electronics	Huseynov, Azuman	23-Jan-08	15-May-08	19-Apr-08	Aramex	51,30 man.	Suprêmes délices	Boulevard Tirou, 255	Charleroi	B-6001	Belgium
+ 10253	SAIPEM	Aliyeva, Gunel	10-Jan-08	02-May-08	24-Apr-08	Aramex	58,17 man.	Hanari Cakes	Rua do Paço, 67	Rio de Janeiro RJ	05454	Brazil
+ 10254	Franklin Offshore	Veliyeva, Nubar	25-Jan-08	17-May-08	01-May-08	Aramex	22,98 man.	Chop-suey Chinese	Hauptstr. 31	Bern	3012	Switzerland
+ 10255	Richter Supermarket	Akhmedov, Rovshan	26-Jan-08	18-May-08	23-Apr-08	FedEx	148,33 man.	Richter Supermarkt	Starenweg 5	Genève	1204	Switzerland
+ 10256	Wellington Papers	Aliyeva, Gunel	29-Jan-08	21-May-08	25-Apr-08	Aramex	13,97 man.	Wellington Importadora	Rua do Mercado, 12	Resende SP	08737	Brazil
+ 10257	SAIPEM	Huseynov, Azuman	30-Jan-08	22-May-08	03-May-08	FedEx	81,91 man.	HILARION-Abastos	Carrera 22 con Ave. Ca	San Cristóba Tac	5022	Venezuela
+ 10258	Rolls Roice	Naziyeva, Samira	31-Jan-08	23-May-08	01-May-08	DHL	140,51 man.	Ernst Handel	Kirchgasse 6	Graz	8010	Austria
+ 10259	Franklin Offshore	Huseynov, Azuman	01-Feb-08	24-May-08	03-May-08	FedEx	3,25 man.	Centro comercial Moctezuma	Sierras de Gramada 995	México D.F.	05022	Mexico
+ 10260	Hess Corp	Huseynov, Azuman	02-Feb-08	25-May-08	07-May-08	DHL	55,09 man.	Ottiles Käseladen	Mehrfemerstr. 369	Köln	50739	Germany
+ 10261	Quede Banrusul	Huseynov, Azuman	02-Feb-08	25-May-08	08-May-08	Aramex	3,05 man.	Que Delicia	Rua da Panificadora, 1	Rio de Janeiro RJ	02389	Brazil
+ 10262	Rattlesnake Studio	Haqrdiyev, Sabir	05-Feb-08	28-May-08	03-May-08	FedEx	48,29 man.	Rattlesnake Canyon Grocery	2817 Milton Dr.	Abuquerque NM	87110	USA
+ 10263	Rolls Roice	Akhmedov, Rovshan	06-Feb-08	29-May-08	09-May-08	FedEx	146,06 man.	Ernst Handel	Kirchgasse 6	Graz	8010	Austria
+ 10264	Swift	Efendiye, Ayyub	07-Feb-08	30-May-08	01-Jun-08	FedEx	3,67 man.	Folk och få HB	Akeratan 24	Bracke	S-844	Sweden
+ 10265	Total	Khanaliyev, Bahruz	08-Feb-08	31-May-08	21-May-08	DHL	55,28 man.	Blondel père et fils	24, place Kléber	Strasbourg	67000	France
+ 10266	Warthi	Aliyeva, Gunel	23-Feb-08	15-Jun-08	09-May-08	FedEx	25,73 man.	Warthi Herkku	Torikatu 38	Oulu	90110	Finland
+ 10267	Swift	Huseynov, Azuman	12-Feb-08	04-Jun-08	15-May-08	DHL	308,58 man.	Frankensand	Berliner Platz 43	München	80805	Germany
+ 10268	SAIPEM	Haqrdiyev, Sabir	13-Feb-08	05-Jun-08	11-May-08	FedEx	66,29 man.	GROSELLA-Restaurante	5ª Ave. Los Palos Gran	Caracas	DF 1081	Venezuela
+ 10269	White World Markets	Veliyeva, Nubar	31-Jan-08	23-May-08	18-May-08	DHL	4,56 man.	White Clover Markets	1029 - 12th Ave. S.	Seattle WA	98124	USA
+ 10270	Warthi	Naziyeva, Samira	15-Feb-08	07-Jun-08	11-May-08	DHL	136,54 man.	Warthi Herkku	Torikatu 38	Oulu	90110	Finland
+ 10271	Split techno	Efendiye, Ayyub	15-Feb-08	07-Jun-08	08-Jun-08	Aramex	4,54 man.	Split Rail Beer & Ale	P.O. Box 555	Lander	WY 82520	USA
+ 10272	Rattlesnake Studio	Efendiye, Ayyub	16-Feb-08	08-Jun-08	15-May-08	Aramex	98,03 man.	Rattlesnake Canyon Grocery	2817 Milton Dr.	Abuquerque NM	87110	USA
+ 10273	QUICK Solutions	Aliyeva, Gunel	19-Feb-08	11-Jun-08	21-May-08	FedEx	76,07 man.	QUICK-Stop	Taucherstraße 10	Cunewalde	01307	Germany
+ 10274	VinNet Chips	Efendiye, Ayyub	20-Feb-08	12-Jun-08	25-May-08	DHL	6,01 man.	Vins et alcools Chevalier	59 rue de l'Abbaye	Reims	51100	France
+ 10275	Hess Corp	Naziyeva, Samira	21-Feb-08	13-Jun-08	16-May-08	DHL	26,93 man.	Magazzini Alimentari Riuniti	Via Ludovico il Moro 22	Bergamo	24100	Italy
+ 10276	Tortuga Steel	Haqrdiyev, Sabir	08-Feb-08	31-May-08	23-May-08	FedEx	13,84 man.	Tortuga Restaurante	Avda. Azteca 123	México D.F.	05033	Mexico
+ 10277	Hess Corp	Khanaliyev, Bahruz	23-Feb-08	15-Jun-08	22-May-08	FedEx	125,77 man.	Morgenstern Gesundkost	Heerstr. 22	Leipzig	04179	Germany
+ 10278	Baker Huges	Haqrdiyev, Sabir	26-Feb-08	18-Jun-08	25-May-08	Aramex	92,69 man.	Berglunds snabbköp	Bergsuvägen 8	Luleå	S-958	Sweden
+ 10279	Hess Corp	Haqrdiyev, Sabir	27-Feb-08	19-Jun-08	25-May-08	Aramex	25,83 man.	Lehmanns Marktstand	Magazinweg 7	Frankfurt a.M	60528	Germany
+ 10280	Baker Huges	Khanaliyev, Bahruz	28-Feb-08	20-Jun-08	21-Jun-08	DHL	8,98 man.	Berglunds snabbköp	Bergsuvägen 8	Luleå	S-958	Sweden
+ 10281	Romero Watches	Huseynov, Azuman	14-Feb-08	06-Jun-08	30-May-08	DHL	2,94 man.	Romero y tomillo	Gran Via, 1	Madrid	28001	Spain
+ 10282	Romero Watches	Huseynov, Azuman	29-Feb-08	21-Jun-08	30-May-08	DHL	12,69 man.	Romero y tomillo	Gran Via, 1	Madrid	28001	Spain
+ 10283	Hess Corp	Aliyeva, Gunel	01-Mar-08	22-Jun-08	01-Jun-08	FedEx	84,81 man.	LILA-Supermercado	Carrera 52 con Ave. Bo	Barquisimeto Lar	3508	Venezuela
+ 10284	Hess Corp	Huseynov, Azuman	04-Mar-08	25-Jun-08	05-Jun-08	DHL	76,56 man.	Lehmanns Marktstand	Magazinweg 7	Frankfurt a M	60528	Germany
+ 10285	QUICK Solutions	Naziyeva, Samira	05-Mar-08	26-Jun-08	04-Jun-08	Aramex	76,83 man.	QUICK-Stop	Taucherstraße 10	Cunewalde	01307	Germany
+ 10286	QUICK Solutions	Haqrdiyev, Sabir	06-Mar-08	27-Jun-08	08-Jun-08	FedEx	229,24 man.	QUICK-Stop	Taucherstraße 10	Cunewalde	01307	Germany
+ 10287	Ricardo Home Collectio	Haqrdiyev, Sabir	07-Mar-08	28-Jun-08	06-Jun-08	FedEx	12,76 man.	Ricardo Adocicados	Av. Copacabana, 267	Rio de Janeiro RJ	02389	Brazil
+ 10288	Reggiani Beauty	Huseynov, Azuman	08-Mar-08	29-Jun-08	12-Jun-08	DHL	7,45 man.	Reggiani Caseifici	Strada Provinciale 124	Reggio Emilia	42100	Italy
+ 10289	StatOil	Aliyev, Mamedali	11-Mar-08	02-Jul-08	06-Jun-08	FedEx	22,77 man.	B's Beverages	Fauntleroy Circus	London	EC2 5	UK
+ 10290	Franklin Offshore	Haqrdiyev, Sabir	12-Mar-08	03-Jul-08	12-Jun-08	DHL	79,70 man.	Comércio Mineiro	Av. dos Lusíadas, 23	São Paulo SP	05432	Brazil
+ 10291	Quede Banrusul	Haqrdiyev, Ayyub	12-Mar-08	03-Jul-08	13-Jun-08	Aramex	6,40 man.	Que Delicia	Rua da Panificadora, 1	Rio de Janeiro RJ	02389	Brazil
+ 10292	Trado Hincarsul	Naziyeva, Samira	13-Mar-08	04-Jul-08	11-Jun-08	Aramex	1,35 man.	Tradicón Hincarsul	Av. Ins de Castro, 414	São Paulo SP	05534	Brazil

Record: 1 of 830

Employee ID	FirstName	LastName	Title	Title Of	Birth Date	Hire Date	Address	City	Region	Postal Code	Country	Phone	Office Ext	Photo
▶ +	1 Samira	Naziyeva	Sales Manager	Ms.	04-Sen-83	01-May-08	Naimanov Pr 11	Baki	Az	AZ1***	Azerbaija	(012)4606161	7489	
+ +	2 Bahruz	Khanaliyev	Manager Assistant	Mr.	19-Fev-87	14-Avg-08	Shamsi Badelbeyli 21	Baki	Az	AZ1***	Azerbaija	(012)4979202	3457	Package
+ +	3 Gunel	Aliyeva	Sales Representative	Ms.	30-Avg-88	01-Apr-08	Ishmail Shixli 33	Sumgait	Az	AZ1***	Azerbaija	(055)2121665	3355	
+ +	4 Arzumhan	Huseynov	Sales Engineer	Mr.	19-Sen-88	03-May-09	Salamzade 23	Baki	Az	AZ1***	Azerbaija	(055)5516688	5176	Package
+ +	5 Nubar	Veliyeva	Sales Assistant	Ms.	18-Mar-89	17-Jan-11	AtaTurk pr 265	Baki	Az	AZ1***	Azerbaija	(055) 555-4848	3453	Package
+ +	6 Ayyub	Efendiyev	Sales Coordinator	Mr.	02-Iyul-70	17-Okt-95	Murtuza Muxtarov 88	Baki	Az	AZ1***	Azerbaija	(077) 555-7773	4930	Package
+ +	7 Mamedali	Aliyev	Logistics Coordinator	Mr.	29-May-78	02-Jan-07	Hesen bey Zerdabi 43	Baki	Az	AZ1***	Azerbaija	(040) 400-4400	4444	Package
+ +	8 Sabir	Haqverdyyev	Alfa Coordinator	Mr.	09-Jan-67	05-Mar-94	Qaradag district 91	Baki	Az	AZ1***	Azerbaija	(050) 500-5050	2344	Package
+ +	9 Rovshan	Akhmedov	Maintenance Coordinator	Mr.	27-Jan-68	15-Noy-94	H Aliyev ave 2	Baki	Az	AZ1***	Azerbaija	(050) 555-4444	4521	Package
* +	AutoNumber)													

Figure 5.11 EMPLOYEE Table

Product ID	Product Name	Supplier	Category	Quantity Per Unit	Unit Price	Units In Stock	Units C	Reorder	Discontinued
48	Acer laser book	Acer	Computer/Laptop/Netbook/	1	\$600.00	40	0	0	<input type="checkbox"/>
50	Acer probook	Acer	Computer/Laptop/Netbook/	1	\$500.00	50	0	0	<input checked="" type="checkbox"/>
4	ADSL P660 T1 Simple	ZyXel	Fax/Modem/Router	1	\$30.00	50	0	0	<input type="checkbox"/>
5	ADSL P660 T2 Wifi	ZyXel	Fax/Modem/Router	1	\$55.00	10	0	0	<input checked="" type="checkbox"/>
41	APC Energy Source	APC	Energy Sources	1	\$120.00	60	0	0	<input type="checkbox"/>
54	AH 5200I	ATI	Video/Audio cards/Processors	1	\$200.00	50	0	0	<input type="checkbox"/>
55	AH 9600GT	ATI	Video/Audio cards/Processors	1	\$360.00	40	0	0	<input type="checkbox"/>
28	AutoCad 2011	AutoDesk	Software/OS/Firmware/Applications	1	\$3 000.00	50	0	0	<input checked="" type="checkbox"/>
29	AutoCad 2011 Lite	AutoDesk	Software/OS/Firmware/Applications	1	\$2 200.00	50	0	0	<input checked="" type="checkbox"/>
61	AutoCad2005	AutoDesk	Software/OS/Firmware/Applications	1	\$1 000.00	30	0	0	<input type="checkbox"/>
62	AutoCad2007	AutoDesk	Software/OS/Firmware/Applications	1	\$1 400.00	10	0	0	<input type="checkbox"/>
30	Avira Internet Security	Avira GmbH	Software/OS/Firmware/Applications	1	\$25.00	40	0	0	<input type="checkbox"/>
22	BlackBerry Bold 9700	BlackBerry	Mobiles	1	\$470.00	15	0	0	<input type="checkbox"/>
23	BlackBerry Torch 9800	BlackBerry	Mobiles	1	\$570.00	20	0	0	<input type="checkbox"/>
40	Boston APC energysaver	APC	Energy Sources	1	\$50.00	50	0	0	<input type="checkbox"/>
45	calculator Inst T-84Plus	WestClox	Electronics	1	\$20.00	20	0	0	<input type="checkbox"/>
33	Canon 1000D	Canon	Photo & Video Camera	1	\$770.00	50	0	0	<input type="checkbox"/>
69	canon eos 4	Canon	Photo & Video Camera	1	\$300.00	50	0	0	<input type="checkbox"/>
71	Canon scanner du25	Canon	Printer/MFD/Scanners	1	\$50.00	50	0	0	<input type="checkbox"/>
42	Casio Scientific calculator P100	Casio	Electronics	1	\$30.00	30	0	0	<input type="checkbox"/>
21	Cisco 2801 Router	CISCO	Fax/Modem/Router	1	\$2 400.00	40	0	5	<input type="checkbox"/>
20	Cisco 6550 Router	CISCO	Fax/Modem/Router	1	\$4 600.00	18	0	0	<input type="checkbox"/>
68	Cisco switch 2660	CISCO	Fax/Modem/Router	1	\$2 400.00	50	0	0	<input type="checkbox"/>
46	Clock for office	WestClox	Electronics	1	\$20.00	30	0	0	<input type="checkbox"/>
9	Dell 2407Fp monitor	Dell	Monitors/Screens/frames	1	\$250.00	10	0	0	<input checked="" type="checkbox"/>
10	Dell 5550dtn	Dell	Printer/MFD/Scanners	1	\$185.00	50	0	0	<input type="checkbox"/>
44	DVD Ultra8X	HP	Electronics	1	\$80.00	30	0	0	<input type="checkbox"/>
43	Fujitsu Server SBL	Fujitsu	Computer/Laptop/Netbook/	1	\$900.00	30	0	0	<input type="checkbox"/>
16	HP Mini 100e	HP	Computer/Laptop/Netbook/	1	\$199.00	60	0	0	<input type="checkbox"/>
17	HP Pavilion DV6	HP	Computer/Laptop/Netbook/	1	\$1 200.00	50	0	0	<input checked="" type="checkbox"/>
75	HP Photo frame	Azel	Electronics	1	\$220.00	60	0	0	<input type="checkbox"/>
18	HP ProBook 4520s	HP	Computer/Laptop/Netbook/	1	\$599.00	30	0	0	<input type="checkbox"/>
19	HP V1700-24 Switch	HP	Fax/Modem/Router	1	\$120.00	50	0	5	<input type="checkbox"/>
77	IBM Battery	IBM	Electronics	1	\$50.00	50	0	0	<input type="checkbox"/>
39	IBM Thinkpad t43	IBM	Computer/Laptop/Netbook/	1	\$900.00	30	0	0	<input type="checkbox"/>
38	IBM Thinkpad t60	IBM	Computer/Laptop/Netbook/	1	\$1 100.00	30	0	0	<input type="checkbox"/>
58	Intel i745ix	Intel	Video/Audio cards/Processors	1	\$50.00	20	0	0	<input type="checkbox"/>
2	iPAD 1	Apple	Computer/Laptop/Netbook/	1	\$550.00	60	0	7	<input type="checkbox"/>
1	iPAD 2	Apple	Computer/Laptop/Netbook/	1	\$650.00	50	0	0	<input checked="" type="checkbox"/>
36	Leica F7	Leica	Photo & Video Camera	1	\$1 500.00	35	0	0	<input type="checkbox"/>
37	Leica ix65	Leica	Photo & Video Camera	1	\$2 000.00	10	0	0	<input type="checkbox"/>
73	Lenovo x100	Lenovo	Computer/Laptop/Netbook/	1	\$300.00	20	0	5	<input type="checkbox"/>
3	MAC BOOK AIR	Apple	Computer/Laptop/Netbook/	1	\$1 200.00	20	5	0	<input type="checkbox"/>
59	nokia e71	Nokia	Mobiles	1	\$350.00	100	0	0	<input type="checkbox"/>
60	nokia e72	Nokia	Mobiles	1	\$400.00	100	0	0	<input type="checkbox"/>

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Figure 5.12 PRODUCTS Table

Order ID	Product	Unit Price	Quantity	Discount
10248	SiemensGSetSL75	\$95.00	1	0%
10248	Casio Scientific calculator P100	\$30.00	1	0%
10248	Oracle client 9 lite	\$200.00	1	0%
10249	PCIMCIA	\$95.00	1	0%
10249	Nvidia Xtreem	\$200.00	1	0%
10250	APC Energy Source	\$120.00	1	0%
10250	Nvidia Xtreem	\$200.00	1	0%
10250	Zyxel switch p24	\$120.00	1	0%
10251	BlackBerry Bold 9700	\$470.00	1	0%
10251	Ubuntu desktop MAC edition	\$40.00	1	0%
10251	Zyxel switch p24	\$120.00	1	0%
10252	Cisco 6550 Router	\$4 600.00	1	0%
10252	Canon 1000D	\$770.00	1	0%
10252	nokia e72	\$400.00	1	0%
10253	Oracle11G	\$2 500.00	1	0%
10253	IBM Thinkpad t43	\$900.00	1	0%
10253	Acer laser book	\$600.00	1	0%
10254	Windows Xp Sp2 prof	\$200.00	15	15%
10254	A41 9600GT	\$360.00	1	0%
10254	printer x3000	\$50.00	1	0%
10255	IPAD 1	\$550.00	1	0%
10255	HP Mini 100e	\$199.00	1	0%
10255	Leica F7	\$1 500.00	1	0%
10255	nokia e71	\$360.00	1	0%
10256	Nvidia X 5D	\$1 200.00	1	0%
10256	IBM Battery	\$50.00	1	0%
10257	Windows 7 Sp1	\$250.00	1	0%
10257	IBM Thinkpad t43	\$900.00	1	0%
10257	IBM Battery	\$50.00	1	0%
10258	IPAD 1	\$550.00	1	0%
10258	ADSL P660 T2 Wifi	\$55.00	1	0%
10258	Oracle10G	\$2 000.00	1	0%
10259	Cisco 2801 Router	\$2 400.00	1	0%
10259	Leica ix85	\$2 000.00	1	0%
10260	APC Energy Source	\$120.00	1	0%
10260	Ubuntu desktop MAC edition	\$40.00	1	0%
10260	AutoCad2007	\$1 400.00	1	0%
10260	Scientific calculator p500	\$200.00	1	0%
10261	Cisco 2801 Router	\$2 400.00	1	0%
10261	Sony F400 prof	\$400.00	1	0%
10262	ADSL P660 T2 Wifi	\$55.00	1	0%
10262	sennheiser xtra earphone	\$30.00	1	0%
10262	Ubuntu desktop x86 edition	\$38.00	1	0%
10263	HP Mini 100e	\$199.00	1	0%
10263	Windows Xp Sp2 prof	\$200.00	1	0%

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Figure 5.13 ORDER DETAILS Table



Supplier ID	Company Name	Contact Name	Contact Title	Address	City	Region	Postal Code	Country	Phone	Fax	Home Page
1	Apple	Serdar Imanov	Purchasing Manager	Neftchiler av2	Baki	Az	Az100*	Azerbaijan	(055) 555-2222		almastore.az
2	Zyxel	Sandra Cretu	Sales Admin	Hans Glibstone 119	Hamburg	Ge	****	Germany	(000)		zyxel.de
3	Senn Heiser	Regina Murphy	Sales Representative	707 Oxford Rd.	Ann Arbor	MI	Az100*	USA	(313) 555-5735		Senn Heiser.com
4	Dell	Yoshi Nagase	Marketing Manager	9-8 Sekimai	Tokyo		****	Japan	(03) 3555-5011		dell.com
5	Azel	Iqr Yakave	Order Administrator	Nizami 69	Baki	Az	Az100*	Azerbaijan	(012) 4440447		azel.net
6	EI Cell	Kenan Isay	Marketing Representative	Said Rustemov 31	Baki	Az	Az100*	Azerbaijan	(012) 4440448		elcell.az
7	HP	Yoshihisa Nagase	Marketing Manager	Rustam Rustamov 22	Baki	Az	Az100*	Azerbaijan	(012) 4440449		hp.az
8	CISCO	Rovshan Akmedov	Sales Representative	Izmir ave	Baki	Az	****	Azerbaijan	(012) 4440450		cisco.az
9	Balckberry	Lars Peterson	Sales Agent	Zahid Xalilov st	Baki	Az	****	Azerbaijan	(012) 4440451		blackberry.az
10	Microsoft	Carlos Diaz	Marketing Manager	Huseyn Javid 654	Baki	Az	****	Azerbaijan	(012) 4440452		microsoft.az
11	Lenovo	Chan Ching	Sales Manager	Zhan jose 21,	Honk Kong	China	****	China	(000)		lenovo.com
12	Fujitsu	Ohara Samu	Order Administrator	David jackson AVE	Los Angeles	La	****	USA	(000)		fujitsu.com
13	Avira GmbH	Sven Petersen	Coordinator Foreign Markets	Frahredder 112a	Cuxhaven		****	Germany	(047)		avira.com
14	Oracle	Elio Rossi	Sales Representative	Dante, 75	Viterbo	Sj	****	Italy	(054)		oracle.com
15	Canon	Pasha Qeribov	Marketing Manager	neftchiler pr 2	Baki	Az	****	Azerbaijan	(012)6665544		canon.az
16	Sony	Heybet Babayev	Regional Account Rep.	Xanci dairvi 2288	Baki	Az	****	Azerbaijan	(012) 555-9931		sony.az
17	Leica	Michael Björn	Sales Representative	Broval St 231	Stockholm		****	Sweden	(000)		lvc.sw
18	IBM	Michael Cretu	Sales Manager	jackson st 22	Ok		****	USA	(000)		ibm.com
19	APC	Robb Merchant	Wholesale Account Agent	Einstain 21	Boston	MA	****	USA	(000)		apc.com
20	Casio	Sandra lake	Owner	Zjan Zjermin 90a	Singapore	Sn	****	Singapore	(000)		casio.com
21	WestClox	Niels Petersen	Sales Manager	William Johnson ave	Lyngby		****	Denmark	(000)		WestClox.com
22	Siemens	Dirk Luchte	Accounting Manager	Mussa Linon 22	Munich		****	Germany	(000)		siemens.com
23	Acer	Anne Heikkonen	Product Manager	Sayanorri sj 761	China		****	China	(000)		acer.com
24	Nvidia	Wendy Mackenzie	Sales Representative	Edward Parade 170	China		****	China	(000)		nvidia.com
25	ATI	Jean Lauzon	Marketing Manager	Laurent 2960			****	Canada	(000)		ati.com
26	Ubuntu	Paulo Giudici	Order Administrator	Via Mussero Ave	Salerno		****	Italy	(000)		ubuntu.com
27	Intel	Marie Delamare	Sales Manager	Voinon 22,	Alabama		****	USA	(000)		intel.com
28	Nokia	Eidemiz Maharrmazade	Sales Representative	3Mk rayon dairesi	BAKI		****	Azerbaijan	(050)2501345		nokia.az
29	AutoDesk	Jalal Hasanov	Manager	Istiglaliyyev 28	Baki	Az	****	Azerbaijan	(055)2204740		autodesk.az

Figure 5.14 SUPPLIERS Table

	Category ID	Category Name
▶	1	Computer/Laptop/Netbook/
+	2	Fax/Modem/Router
+	3	Printer/MFD/Scanners
+	4	Software/OS/Firmware/Applications
+	5	Photo & Video Camera
+	6	Ear phones
+	7	Video/Audio cards/Processors
+	8	Mobiles
+	9	Monitors/Screens/frames
+	10	Energy Sources
+	11	Electronics
*	(AutoNumber)	

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Figure 5.15 CATEGORIES Table

	Shipper ID	Company Name	Phone
▶	1	DHL	(050) 500-0000
+	2	Aramex	(055) 555-5555
+	3	FedEx	(070) 700-0000
*	(AutoNumber)		

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Figure 5.16 SHIPPERS Table

### Run a Queries

Category Name
Computer/Laptop/Netbook/
Ear phones
Electronics
Energy Sources
Fax/Modem/Router
Mobiles
Monitors/Screens/frames
Photo & Video Camera
Printer/MFD/Scanners
Software/OS/Firmware/Applications
Video/Audio cards/Processors
*

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Figure 5.17 by Category Sales

Product ID	Product Name
2	iPAD 1
3	MAC BOOK AIR
4	ADSL P660 T1 Simple
6	senheiser xtra Sound
7	senheiser xtra earphone
8	senheiser sound blaster
10	Dell 5550dtn
11	SiemensGSetSL75
12	SiemensGSetSL90
13	Wifi Modem
14	PCIMCIA
16	HP Mini 100e
18	HP ProBook 4520s
19	HP V1700-24 Switch
20	Cisco 6550 Router
21	Cisco 2801 Router
22	BlackBerry Bold 9700
23	BlackBerryTouche9800
25	Windows Xp Sp3 prof
26	Windows Server 2003 Sp6
27	Windows 7 Sp1
30	Airta Internet Security
31	Oracle11G
32	Oracle10G
33	Canon 1000D
34	Sony X120
35	Sony F400 prof
36	Leica F7
37	Leica ix65
38	IBM Thinkpad t60
39	IBM Thinkpad t43
40	Boston APC energysaver
41	APC Energy Source
42	Casio Scientific alculator P100
43	Fujitsu Server SBL
44	DVD Ultra8X
45	calculator Inst T1-84Plus
46	Clock for office
47	Siemens Gigaset 2015
49	Acer laser book
51	Nvidia Xtream
52	Nvidia X 3D
53	Nvidia X 5D
54	ATI 5200I
55	ATI 9600GCT

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Figure 5.18 Current Product List Figure

City	CompanyName	ContactName	Relationship
Baki	HP	Yoshi Naga	Suppliers
Baki	Swift	Abbas Islamov	Customers
Baki	Swift	Abbas Husseinov	Customers
Baki	Sony	Heybet Babayev	Suppliers
Baki	Microsoft	Carlos Diaz	Suppliers
Baki	EI Cell	Kenan Isay	Suppliers
Baki	Canon	Pasha Geribov	Suppliers
Baki	Cameron	Abdulla Algayev	Customers
Baki	Blackberry	Lars Peterson	Suppliers
Baki	Azel	Iqr Yakave	Suppliers
Baki	AutoDesk	Jalal Hasanov	Suppliers
Baki	Apple	Serdar Imanov	Suppliers
Baki	CISCO	Rovshan Akmedov	Suppliers
Baki	Nokia	Eideniz Maharrim	Suppliers
Barcelona	SAIPEM	André Fonseca	Customers
Barcelona	SAIPEM	Mario Pontes	Customers
Barcelona	SAIPEM	Manuel Pereira	Customers
Barcelona	SAIPEM	José Pedro Freyre	Customers
Barcelona	SAIPEM	Howard Snyder	Customers
Barcelona	SAIPEM	Carlos Hernández	Customers
Barcelona	SAIPEM	Eduardo Saavedra	Customers
Bergen	StatOil	Patricio Simpson	Customers
Bergen	StatOil	Victoria Ashworth	Customers
Boise	Save-a-lot Pr	Jose Pavarotti	Customers
Boston	APC	Robb Merchant	Suppliers
Buenos Aires	Ranch Homes	Sergio Gutiérrez	Customers
Butte	Soft Box	Liu Wong	Customers
Charleroi	Super Electronics	Pascale Cartrain	Customers
China	Acer	Anne Heikkonen	Suppliers
China	Nvidia	Wendy Mackenzie	Suppliers
Cowes	ExxonMobil	Annette Roulet	Customers
Cowes	ExxonMobil	Daniel Tonini	Customers
Cowes	ExxonMobil	Helen Bennett	Customers
Cowes	ExxonMobil	Patricia McKenna	Customers
Cowes	ExxonMobil	Philp Cramer	Customers
Cowes	ExxonMobil	Yoshi Latimer	Customers
Cowes	ExxonMobil	Yoshi Tamamuri	Customers
Cunewalde	QUICK Solutions	Horst Kloss	Customers
Cuxhaven	Airta GmbH	Sven Petersen	Suppliers
Detroit	Franklin Offshore	Francisco Chang	Customers
Detroit	Franklin Offshore	Pedro Afonso	Customers
Detroit	Franklin Offshore	Yang Wang	Customers
Detroit	Franklin Offshore	Elizabeth Brown	Customers
Genève	Richter Supermarket	Michael Holz	Customers
Hamburg	70xGal	Michaela Pratti	Suppliers

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5.19 Customers and Suppliers by City

Country	LastName	FirstName	Shipped Date	Order ID	Sale Amount
Azerbaijan	Akhmedov	Rowshan	24-Apr-08	10248	325,00 man.
Azerbaijan	Aliyeva	Gunel	24-Apr-08	10253	4 000,00 man.
Azerbaijan	Veliyeva	Nubar	01-May-08	10254	2 960,00 man.
Azerbaijan	Aliyeva	Gunel	25-Apr-08	10256	1 250,00 man.
Azerbaijan	Huseynov	Arzuman	30-Apr-08	10257	1 200,00 man.
Azerbaijan	Naziyeva	Samira	01-May-08	10258	2 605,00 man.
Azerbaijan	Huseynov	Arzuman	03-May-08	10259	4 400,00 man.
Azerbaijan	Huseynov	Arzuman	07-May-08	10260	1 760,00 man.
Azerbaijan	Huseynov	Arzuman	08-May-08	10261	2 800,00 man.
Azerbaijan	Haqverdyyev	Sabir	03-May-08	10262	123,00 man.
Azerbaijan	Akhmedov	Rowshan	09-May-08	10263	474,00 man.
Azerbaijan	Efendiyev	Ayyub	01-Iyun-08	10264	670,00 man.
Azerbaijan	Khanaliyev	Bahruz	21-May-08	10265	1 400,00 man.
Azerbaijan	Aliyeva	Gunel	09-May-08	10266	100,00 man.
Azerbaijan	Huseynov	Arzuman	15-May-08	10267	418,00 man.
Azerbaijan	Haqverdyyev	Sabir	11-May-08	10268	2 400,00 man.
Azerbaijan	Veliyeva	Nubar	18-May-08	10269	970,00 man.
Azerbaijan	Naziyeva	Samira	11-May-08	10270	2 300,00 man.
Azerbaijan	Efendiyev	Ayyub	08-Iyun-08	10271	770,00 man.
Azerbaijan	Efendiyev	Ayyub	15-May-08	10272	7 300,00 man.
Azerbaijan	Aliyeva	Gunel	21-May-08	10273	3 523,00 man.
Azerbaijan	Efendiyev	Ayyub	25-May-08	10274	250,00 man.
Azerbaijan	Naziyeva	Samira	18-May-08	10275	540,00 man.
Azerbaijan	Haqverdyyev	Sabir	23-May-08	10276	395,00 man.
Azerbaijan	Khanaliyev	Bahruz	22-May-08	10277	4 400,00 man.
Azerbaijan	Haqverdyyev	Sabir	25-May-08	10278	1 730,00 man.
Azerbaijan	Haqverdyyev	Sabir	25-May-08	10279	1 200,00 man.
Azerbaijan	Khanaliyev	Bahruz	21-Iyun-08	10280	780,00 man.
Azerbaijan	Huseynov	Arzuman	30-May-08	10281	720,00 man.
Azerbaijan	Huseynov	Arzuman	30-May-08	10282	65,00 man.
Azerbaijan	Aliyeva	Gunel	01-Iyun-08	10283	914,04 man.
Azerbaijan	Huseynov	Arzuman	05-Iyun-08	10284	1 130,00 man.
Azerbaijan	Naziyeva	Samira	04-Iyun-08	10285	1 900,00 man.
Azerbaijan	Haqverdyyev	Sabir	08-Iyun-08	10286	1 800,00 man.
Azerbaijan	Haqverdyyev	Sabir	06-Iyun-08	10287	419,00 man.
Azerbaijan	Huseynov	Arzuman	12-Iyun-08	10288	2 600,00 man.
Azerbaijan	Aliyev	Mamedali	06-Iyun-08	10289	1 205,00 man.
Azerbaijan	Haqverdyyev	Sabir	12-Iyun-08	10290	2 905,00 man.
Azerbaijan	Efendiyev	Ayyub	13-Iyun-08	10291	490,00 man.
Azerbaijan	Naziyeva	Samira	11-Iyun-08	10292	4 600,00 man.
Azerbaijan	Naziyeva	Samira	20-Iyun-08	10293	2 019,00 man.
Azerbaijan	Huseynov	Arzuman	14-Iyun-08	10294	3 270,00 man.
Azerbaijan	Khanaliyev	Bahruz	19-Iyun-08	10295	38,00 man.
Azerbaijan	Efendiyev	Ayyub	20-Iyun-08	10296	594,00 man.
Azerbaijan	Veliyeva	Nubar	19-Iyun-08	10297	1 100,00 man.

Figure 5.20 Employee Sales by Country

Ship Citi	Ship Pl	Ship Cou	Custorr	Compa	Address	City	Region	Postal Code	Country	Salesperson	Order ID	Order Dat	Required D	Shipped Date	Company	Product
Berlin	12209	Germany	Swift	Swift	Suleyman Rustam 45 Baki	Baki	Az	Az1****	Azerbaijan	Gunel Aliyeva	10643	10-Mar-09	01-Jul-09	11-Jun-09	DHL	AutoCad 2011
Berlin	12209	Germany	Swift	Swift	Suleyman Rustam 45 Baki	Baki	Az	Az1****	Azerbaijan	Gunel Aliyeva	10643	10-Mar-09	01-Jul-09	11-Jun-09	DHL	IBM Thinkpad 143
Berlin	12209	Germany	Swift	Swift	Suleyman Rustam 45 Baki	Baki	Az	Az1****	Azerbaijan	Gunel Aliyeva	10643	10-Mar-09	01-Jul-09	11-Jun-09	DHL	Clock for office
Berlin	12209	Germany	Swift	Swift	Suleyman Rustam 45 Baki	Baki	Az	Az1****	Azerbaijan	Arzumana Huseynov	10692	18-Apr-09	09-Aug-09	22-Jul-09	Aramex	Tablet Pc 12 inch
Berlin	12209	Germany	Swift	Swift	Suleyman Rustam 45 Baki	Baki	Az	Az1****	Azerbaijan	Arzumana Huseynov	10702	12-May-09	02-Sen-09	30-Jul-09	DHL	MAC BOOK AIR
Berlin	12209	Germany	Swift	Swift	Suleyman Rustam 45 Baki	Baki	Az	Az1****	Azerbaijan	Arzumana Huseynov	10702	12-May-09	02-Sen-09	30-Jul-09	DHL	USB wach 5gb
Berlin	12209	Germany	Swift	Swift	Suleyman Rustam 45 Baki	Baki	Az	Az1****	Azerbaijan	Samira Naziyeva	10835	31-Jul-09	21-Noy-09	30-Okt-09	FedEx	nokia e71
Berlin	12209	Germany	Swift	Swift	Suleyman Rustam 45 Baki	Baki	Az	Az1****	Azerbaijan	Samira Naziyeva	10835	31-Jul-09	21-Noy-09	30-Okt-09	FedEx	IBM Battery
Berlin	12209	Germany	Swift	Swift	Suleyman Rustam 45 Baki	Baki	Az	Az1****	Azerbaijan	Samira Naziyeva	10952	13-Okt-09	03-Fev-10	31-Dek-09	DHL	semhaiser xtra Sound
Berlin	12209	Germany	Swift	Swift	Suleyman Rustam 45 Baki	Baki	Az	Az1****	Azerbaijan	Samira Naziyeva	10952	13-Okt-09	03-Fev-10	31-Dek-09	DHL	AutoCad 2011
Berlin	12209	Germany	Swift	Swift	Suleyman Rustam 45 Baki	Baki	Az	Az1****	Azerbaijan	Samira Naziyeva	11011	23-Okt-09	13-Fev-10	20-Jan-10	DHL	Interl 745ix
Berlin	12209	Germany	Swift	Swift	Suleyman Rustam 45 Baki	Baki	Az	Az1****	Azerbaijan	Gunel Aliyeva	11011	23-Okt-09	13-Fev-10	20-Jan-10	DHL	Canon scanner du25
México	05021	México	Swift	Swift	mikayl Mushvig 37	Baki	Az	Az1****	Azerbaijan	Mamedali Aliyev	10308	03-Apr-08	25-Jul-08	03-Jul-08	FedEx	canon eos 4
México	05021	México	Swift	Swift	mikayl Mushvig 37	Baki	Az	Az1****	Azerbaijan	Mamedali Aliyev	10308	03-Apr-08	25-Jul-08	03-Jul-08	FedEx	Scientific calculator p500
México	05021	México	Swift	Swift	mikayl Mushvig 37	Baki	Az	Az1****	Azerbaijan	Gunel Aliyeva	10625	21-Fev-09	14-Jun-09	23-May-09	DHL	PCIMCIA
México	05021	México	Swift	Swift	mikayl Mushvig 37	Baki	Az	Az1****	Azerbaijan	Gunel Aliyeva	10625	21-Fev-09	14-Jun-09	23-May-09	DHL	Casio Scientific alculator
México	05021	México	Swift	Swift	mikayl Mushvig 37	Baki	Az	Az1****	Azerbaijan	Gunel Aliyeva	10625	21-Fev-09	14-Jun-09	23-May-09	DHL	nokia e72
México	05021	México	Swift	Swift	mikayl Mushvig 37	Baki	Az	Az1****	Azerbaijan	Arzumana Huseynov	10926	17-Sen-09	08-Jan-10	18-Dek-09	FedEx	Oracle10G
México	05021	México	Swift	Swift	mikayl Mushvig 37	Baki	Az	Az1****	Azerbaijan	Arzumana Huseynov	10926	17-Sen-09	08-Jan-10	18-Dek-09	FedEx	SiemensGSetSL75
México	05021	México	Swift	Swift	mikayl Mushvig 37	Baki	Az	Az1****	Azerbaijan	Arzumana Huseynov	10926	17-Sen-09	08-Jan-10	18-Dek-09	FedEx	Wifi Modem
México	05021	México	Swift	Swift	mikayl Mushvig 37	Baki	Az	Az1****	Azerbaijan	Arzumana Huseynov	10926	17-Sen-09	08-Jan-10	18-Dek-09	FedEx	HP V1700-24 Switch
México	05021	México	Swift	Swift	mikayl Mushvig 37	Baki	Az	Az1****	Azerbaijan	Arzumana Huseynov	10926	17-Sen-09	08-Jan-10	18-Dek-09	FedEx	Oracle client 9 lite
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Rovshan Akhmedov	10501	23-Okt-08	13-Fev-09	23-Jan-09	FedEx	Ati 5200i
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Arzumana Huseynov	10509	31-Okt-08	21-Fev-09	05-Fev-09	DHL	AutoCad 2011
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Gunel Aliyeva	10582	10-Jan-09	03-May-09	22-Apr-09	Aramex	Ubuntu desktop MAC ed
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Gunel Aliyeva	10582	10-Jan-09	03-May-09	22-Apr-09	Aramex	USB wach 5gb
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Sabir Haqverdiev	10614	11-Fev-09	04-Jun-09	10-May-09	FedEx	SiemensGSetSL75
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Sabir Haqverdiev	10614	11-Fev-09	04-Jun-09	10-May-09	FedEx	Cisco 2801 Router
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Sabir Haqverdiev	10614	11-Fev-09	04-Jun-09	10-May-09	FedEx	IBM Thinkpad 143
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Rovshan Akhmedov	10653	12-Avg-09	03-Dek-09	12-Noy-09	Aramex	HP ProBook 4520s
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Ayyub Efendiyyev	10956	14-Okt-09	04-Fev-10	27-Dek-09	Aramex	Cisco 2801 Router
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Ayyub Efendiyyev	10956	14-Okt-09	04-Fev-10	27-Dek-09	Aramex	Siemens Gigaset 2015
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Ayyub Efendiyyev	10956	14-Okt-09	04-Fev-10	27-Dek-09	Aramex	Nvidia Xtream
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Rovshan Akhmedov	11058	12-Noy-09	05-Mar-10		FedEx	Cisco 2801 Router
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Rovshan Akhmedov	11058	12-Noy-09	05-Mar-10		FedEx	nokia e72
Mannhe	68306	Germany	Cam	Camerc	H Javid 545	Baki			Azerbaijan	Rovshan Akhmedov	11058	12-Noy-09	05-Mar-10		FedEx	AutoCad2005

Record: 1 of 36

Navigation icons: Home, Back, Forward, Stop, Refresh, Print, Close

Figure 5.21 Invoice

Ship No	Ship Address	Ship City	Ship P	Ship Cou	Customer	Company	Address	City	Region	Postal Code	Country	Salesperson	Order ID	Order Date	Required D	Shipped Date	Company	Product
▶	Alfreds	Obere Str. 57	Berlin	12209	Germany	Swift	Suleyman Rustam 45	Baki	Az	Az1***	Azerbaijan	Gunel Aliyeva	10643	10-Mar-09	01-Iyul-09	11-Iyun-09	DHL	AutoCad 2011
	Alfreds	Obere Str. 57	Berlin	12209	Germany	Swift	Suleyman Rustam 45	Baki	Az	Az1***	Azerbaijan	Gunel Aliyeva	10643	10-Mar-09	01-Iyul-09	11-Iyun-09	DHL	IBM Thinkpad t43
	Alfreds	Obere Str. 57	Berlin	12209	Germany	Swift	Suleyman Rustam 45	Baki	Az	Az1***	Azerbaijan	Gunel Aliyeva	10643	10-Mar-09	01-Iyul-09	11-Iyun-09	DHL	Clock for office
*																		

Record: 1 of 3

Figure 5.22 Invoice Filter

Customer ID	Company Name	City	Country	Order Date
▶ ANATR	Swift	Baki	Azerbaijan	03-Apr-08
	Swift	Baki	Azerbaijan	21-Feb-09
	Swift	Baki	Azerbaijan	10-Mar-09
	Swift	Baki	Azerbaijan	18-Apr-09
	Swift	Baki	Azerbaijan	12-May-09
	Swift	Baki	Azerbaijan	13-Iyun-09
	Swift	Baki	Azerbaijan	31-Iyul-09
	Swift	Baki	Azerbaijan	17-Sen-09
	Swift	Baki	Azerbaijan	13-Okt-09
*	Swift	Baki	Azerbaijan	23-Okt-09

Record: 1 of 10

Figure 5.23 Quarterly Orders

Product Name	Customer	OrderYear	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Acer probook	Hess Corp	2009		500,00 man.		
Acer probook	Queen Bravox	2009	2 375,00 man.			
Acer probook	Richter Supermarket	2009		4 500,00 man.		
ADSL P660 T1 Sim	Baker Huges	2009	30,00 man.			
ADSL P660 T1 Sim	Rolls Roice	2009		30,00 man.		
ADSL P660 T1 Sim	Hess Corp	2009	30,00 man.		22,00 man.	
ADSL P660 T1 Sim	Queen Bravox	2009		30,00 man.	30,00 man.	
ADSL P660 T1 Sim	Rattlesnake Studio	2009				60,00 man.
ADSL P660 T1 Sim	Super Electronics	2009			30,00 man.	
ADSL P660 T1 Sim	Trado Hipercars	2009	30,00 man.			
ADSL P660 T1 Sim	Warthi	2009	30,00 man.			
ADSL P660 T2 Wifi	Franklin Offshore	2009			55,00 man.	

Record: 5 of 1881

Figure 5.24 Quarterly Orders by Product

Order ID	Product	Product Name	Unit Price	Quantity	Discount
10248	SiemensGSetSL75	SiemensGSetSL75	\$95.00	1	0%
10248	Casio Scientific calculator P100	Casio Scientific calculator P100	\$30.00	1	0%
10248	Oracle client 9 lite	Oracle client 9 lite	\$200.00	1	0%
10249	Nvidia Xtream	Nvidia Xtream	\$200.00	1	0%
10249	PCIMCIA	PCIMCIA	\$95.00	1	0%
10250	Nvidia Xtream	Nvidia Xtream	\$200.00	1	0%
10250	APC Energy Source	APC Energy Source	\$120.00	1	0%
10250	Zyxel switch p24	Zyxel switch p24	\$120.00	1	0%
10251	Zyxel switch p24	Zyxel switch p24	\$120.00	1	0%
10251	BlackBerry Bold 9700	BlackBerry Bold 9700	\$470.00	1	0%
10251	Ubuntu desktop MAC edition	Ubuntu desktop MAC edition	\$40.00	1	0%
10252	Canon 1000D	Canon 1000D	\$770.00	1	0%
10252	Cisco 6550 Router	Cisco 6550 Router	\$4 600.00	1	0%
10252	nokia e72	nokia e72	\$400.00	1	0%
10253	Acer laser book	Acer laser book	\$600.00	1	0%
10253	IBM Thinkpad t43	IBM Thinkpad t43	\$900.00	1	0%
10253	Oracle11G	Oracle11G	\$2 500.00	1	0%
10254	ATI 9600GT	ATI 9600GT	\$360.00	1	0%
10254	printer x3000	printer x3000	\$60.00	1	0%
10254	Windows Xp Sp2 prof	Windows Xp Sp2 prof	\$200.00	15	15%
10255	Leica F7	Leica F7	\$1 500.00	1	0%
10255	nokia e71	nokia e71	\$360.00	1	0%
10255	HP Mini 100e	HP Mini 100e	\$199.00	1	0%
10255	iPAD 1	iPAD 1	\$550.00	1	0%
10256	Nvidia X 5D	Nvidia X 5D	\$1 200.00	1	0%
10256	IBM Battery	IBM Battery	\$50.00	1	0%
10257	Windows 7 Sp1	Windows 7 Sp1	\$250.00	1	0%
10257	IBM Thinkpad t43	IBM Thinkpad t43	\$900.00	1	0%
10257	IBM Battery	IBM Battery	\$50.00	1	0%
10258	iPAD 1	iPAD 1	\$550.00	1	0%
10258	Oracle10G	Oracle10G	\$2 000.00	1	0%
10258	ADSL P660 T2 Wifi	ADSL P660 T2 Wifi	\$55.00	1	0%
10259	Cisco 2801 Router	Cisco 2801 Router	\$2 400.00	1	0%
10259	Leica ix65	Leica ix65	\$2 000.00	1	0%
10260	Scientific calculator p500	Scientific calculator p500	\$200.00	1	0%
10260	Ubuntu desktop MAC edition	Ubuntu desktop MAC edition	\$40.00	1	0%
10260	AutoCad2007	AutoCad2007	\$1 400.00	1	0%
10260	APC Energy Source	APC Energy Source	\$120.00	1	0%
10261	Sony F400 prof	Sony F400 prof	\$400.00	1	0%
10261	Cisco 2801 Router	Cisco 2801 Router	\$2 400.00	1	0%
10262	ADSL P660 T2 Wifi	ADSL P660 T2 Wifi	\$55.00	1	0%
10262	senheiser xtra earphone	senheiser xtra earphone	\$30.00	1	0%
10262	Ubuntu desktop x86 edition	Ubuntu desktop x86 edition	\$38.00	1	0%
10263	HP Mini 100e	HP Mini 100e	\$199.00	1	0%
10263	Avira Internet Security	Avira Internet Security	\$75.00	1	0%

Record: 1 of 2155

Figure 5.25 Order Details Extended

Category Name	Product Name	Product Sales
Computer/Laptop/Netbook	iPAD 2	24 050,00 man.
Computer/Laptop/Netbook	Lenovo x100	3 900,00 man.
Computer/Laptop/Netbook	MAC BOOK AIR	13 200,00 man.
Computer/Laptop/Netbook	Tablet Ptc 12 inch	17 000,00 man.
Ear phones	senheiser xtra earphone	810,00 man.
Ear phones	senheiser xtra Sound	250,00 man.
Electronics	calculator Inst Ti-84Plus	280,00 man.
Electronics	Casio Scientific calculator P100	900,00 man.
Electronics	Clock for office	480,00 man.
Electronics	DVD Ultra8X	1 920,00 man.
Electronics	HP Photo frame	9 900,00 man.
Electronics	IBM Battery	1 800,00 man.
Electronics	Scientific calculator p500	7 600,00 man.
Electronics	USB stick 4GB	140,00 man.
Electronics	USB wach 5gb	684,00 man.
Energy Sources	APC Energy Source	5 394,00 man.
Energy Sources	Boston APC energysaver	2 050,00 man.
Fax/Modem/Router	ADSL P660 T1 Simple	562,00 man.
Fax/Modem/Router	ADSL P660 T2 Wifi	550,00 man.
Fax/Modem/Router	Cisco 2801 Router	88 800,00 man.
Fax/Modem/Router	Cisco 6550 Router	69 000,00 man.
Fax/Modem/Router	Cisco switch 2660	81 600,00 man.
Fax/Modem/Router	HP V1700-24 Switch	4 320,00 man.
Fax/Modem/Router	PCIMCIA	1 900,00 man.
Fax/Modem/Router	USB modem	1 415,70 man.
Fax/Modem/Router	Wifi Modem	7 770,00 man.
Fax/Modem/Router	Zyxel switch p24	3 840,00 man.
Fax/Modem/Router	Zyxel switch p48	1 680,00 man.
Mobiles	BlackBerry Bold 9700	6 580,00 man.
Mobiles	BlackBerry Tourch9800	10 830,00 man.
Mobiles	nokia e71	22 050,00 man.
Mobiles	nokia e72	18 800,00 man.
Mobiles	Siemens Gigaset 2015	840,00 man.
Mobiles	Siemens OptiPoint 500	1 102,50 man.
Mobiles	SiemensGSetSL75	3 515,00 man.
Mobiles	SiemensGSetSL90	1 300,00 man.
Monitors/Screens/frames	Dell 2407Fp imonitor	1 837,50 man.
Photo & Video Camera	Canon 1000D	23 100,00 man.
Photo & Video Camera	canon eos 4	9 300,00 man.
Photo & Video Camera	Leica F7	46 500,00 man.
Photo & Video Camera	Leica ix65	12 000,00 man.
Photo & Video Camera	Sony DSL x70	3 600,00 man.
Photo & Video Camera	Sony F400 prof	13 960,00 man.
Photo & Video Camera	Sony X120	3 600,00 man.

Record: 1 of 77

Figure 5.26 Product Sales for 2010

Product Name	Unit Price
HP ProBook 4520s	\$599.00
Acer laser book	\$600.00
iPAD 2	\$650.00
Canon 10000	\$770.00
Fujitsu Server SBL	\$800.00
IBM Thinkpad t43	\$900.00
Tablet Pc 12 inch	\$1 000.00
AutoCad2005	\$1 000.00
IBM Thinkpad t60	\$1 100.00
Nvidia X 50	\$1 200.00
MAC BOOK AIR	\$1 200.00
HP Pavilion DV6	\$1 200.00
AutoCad2007	\$1 400.00
Leica ix65	\$1 500.00
Leica ix65	\$2 000.00
Oracle10G	\$2 000.00
AutoCad 2011 Lite	\$2 200.00
Cisco 2801 Router	\$2 400.00
Cisco switch 2660	\$2 400.00
Oracle11G	\$2 500.00
AutoCad 2011	\$3 000.00
Cisco 6550 Router	\$4 600.00
*	\$0.00

Record: 1 of 22

Figure 5.27 Products Average Price

Category ID	Category Name	Product Name
1	Computer/Laptop/Netbook/	Acer laser book
1	Computer/Laptop/Netbook/	Acer probook
2	Fax/Modem/Router	ADSL P660 T1 Simple
2	Fax/Modem/Router	ADSL P660 T2 Wifi
10	Energy Sources	APC Energy Source
7	Video/Audio cards/Processors	Ati 5200I
7	Video/Audio cards/Processors	Ati 9600GT
4	Software/OS/Firmware/Applications	AutoCad 2011
4	Software/OS/Firmware/Applications	AutoCad 2011 Lite
4	Software/OS/Firmware/Applications	AutoCad2005
4	Software/OS/Firmware/Applications	AutoCad2007
4	Software/OS/Firmware/Applications	Avira Internet Security
8	Mobiles	BlackBerry Bold 9700
8	Mobiles	BlackBerry Touch9600
10	Energy Sources	Boston APC energysaver
11	Electronics	calculator Inst TI-84Plus
5	Photo & Video Camera	Canon 10000
5	Photo & Video Camera	canon eos 4
3	Printer/MFD/Scanners	Canon scanner du25
11	Electronics	Casio Scientific calculator P100
2	Fax/Modem/Router	Cisco 2801 Router
2	Fax/Modem/Router	Cisco 6550 Router
2	Fax/Modem/Router	Cisco switch 2660
11	Electronics	Clock for office
9	Monitors/Screens/frames	Dell 2407Fp monitor
3	Printer/MFD/Scanners	Dell 5550dtn
11	Electronics	DVD Ultra8X
1	Computer/Laptop/Netbook/	Fujitsu Server SBL
1	Computer/Laptop/Netbook/	HP Mini 100e
1	Computer/Laptop/Netbook/	HP Pavilion DV6
11	Electronics	HP Photo frame
1	Computer/Laptop/Netbook/	HP ProBook 4520s
2	Fax/Modem/Router	HP V1700-24 Switch
11	Electronics	IBM Battery
1	Computer/Laptop/Netbook/	IBM Thinkpad t43
1	Computer/Laptop/Netbook/	IBM Thinkpad t60
7	Video/Audio cards/Processors	Intel 745ix
1	Computer/Laptop/Netbook/	iPAD 1
1	Computer/Laptop/Netbook/	iPAD 2
5	Photo & Video Camera	Leica F7
5	Photo & Video Camera	Leica ix65
1	Computer/Laptop/Netbook/	Lenovo x100
1	Computer/Laptop/Netbook/	MAC BOOK AIR
8	Mobiles	nokia e71
8	Mobiles	nokia e77

Record: 7 of 77

Figure 5.28 Invoice Forms

Ten Most Expensive Products	Unit Price
Cisco 6550 Router	\$4 600.00
AutoCad 2011	\$3 000.00
Oracle11G	\$2 500.00
Cisco switch 2660	\$2 400.00
Cisco 2801 Router	\$2 400.00
AutoCad 2011 Lite	\$2 200.00
Leica ix65	\$2 000.00
Oracle10G	\$2 000.00
Leica F7	\$1 500.00
AutoCad2007	\$1 400.00
*	\$0.00

Record: 1 of 10

Figure 5.29 Ten an eXpensive products



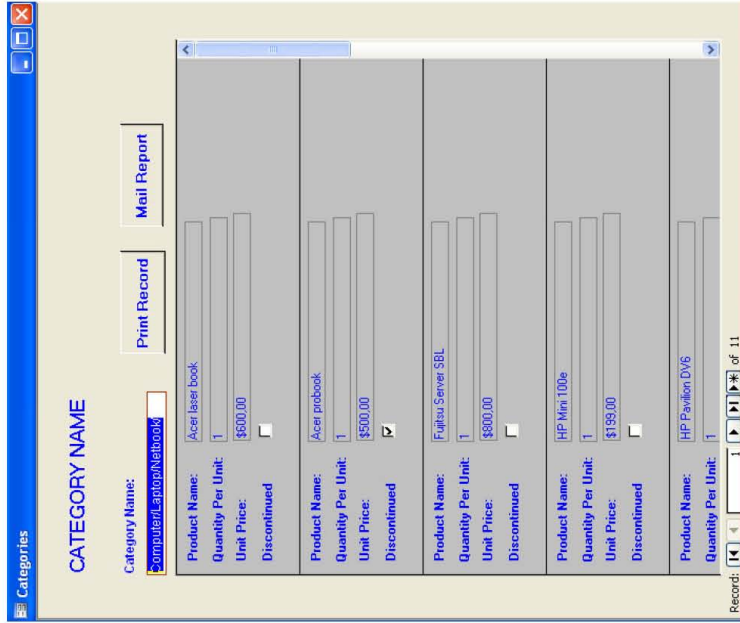


Figure 5.30 Categories

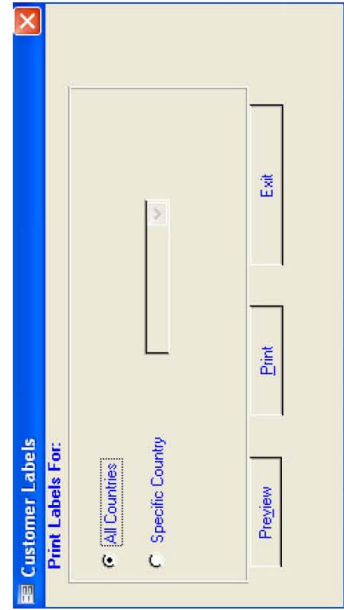


Figure 5.32 Customer Labels Dialog

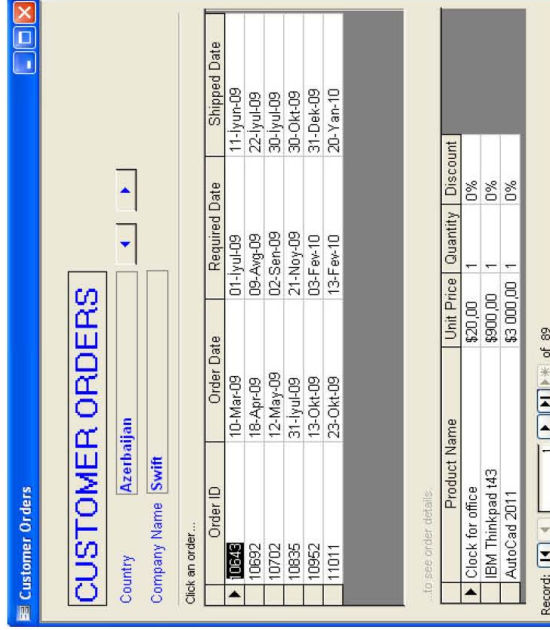


Figure 5.31 Customer Orders

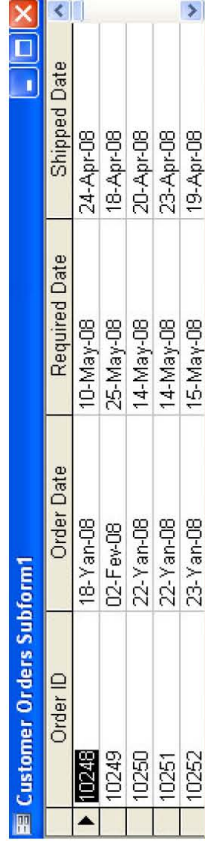


Figure 5.33 Customer Order Subform1

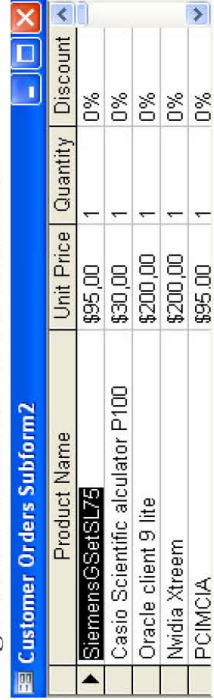


Figure 5.34 Customer Order Subform2

**Customer Phone List**

Company Name:	Contact:	Phone:
Swift	Abbas Husseinov	4978259
Swift	Abbas Islamov	2814817
Swift	Antonio Moreno	(5) 555-3932
BP	Thomas Hardy	(171) 555-7788
Baker Hughes	Christina Berglund	0921-12 34 65
Cameroon	Abdulla Algayev	4837189
Total	Frédérique Citeaux	88-60.15.31

**Show All Records**

Record: 2 of 89

Figure 5.35 Customer Phone List

**Customers**

Customer ID: ALFKI  
 Company Name: Swift  
 Contact Name: Abbas Husseinov  
 Title: Sr. HSE Advisor  
 Region: Az  
 Country: Azerbaijan  
 Fax: #Name?  
 Address: Suleyman Rustam 45  
 City: Baki  
 Postal Code: Az1\*\*\*  
 Phone: 4978259

Record: 1 of 89

Figure 5.36 Customer

**Employees**

Employee ID: 1  
 First Name: Samira  
 Last Name: Naziyeva  
 Title: Sales Manager  
 Reports To:  
 Hire Date: 01-May-08  
 Extension: 7489

Personal Info

Record: 1 of 9

Figure 5.37 Employees

**Quarterly Orders**

Customer ID: ANATF  
 Company Name: Swift  
 City: Baki  
 Country: Azerbaijan

Product Name	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Casio Scientific calculator P100	30 man.			
HP V1700-24 Switch	400 man.		120 man.	
redia #72				200 man.
Oracle client 9 file		2,000 man.		
Oracle10G				
<b>Totals</b>	\$525	\$2,500		\$525

Grand Total for 2009: \$3,650

Figure 5.38 Quarterly Orders

UK

Salesperson: Huseynov, Arzuman

Order ID: 10741

Order Date: 16-May-09

Ship Via:  DHL  Atamex  FedEx

UK

Shipped Date: 27-Avg-09

Required Date: 06-Sen-09

Bill To: BP  
120 Hanover Sq.  
London W/A1 1DP

Ship To: Around the Horn  
Brook Farm  
Stratford St. Mary  
Colchester Essex CO7 6JX

Product	Unit Price	Quantity	Discount	Subtotal
IPAD 1	\$550.00	1	0%	550.00 man.

Display products of the month

Print an Invoice \$10.96

Record: 23 of 830

Figure 5.39 Orders

Products

Alphabetical List of Products

Output product list to HTML format

Product ID: IPAD 2

Product Name: Apple

Supplier: ComputerLaptop/Netbook

Quantity Per Unit: 1

Unit Price: \$650.00

Units In Stock: 50

Units On Order: 0

Reorder Level: 0

Discontinued:

Record: 1 of 77

Figure 5.40 Products

Suppliers

Supplier ID: 1

Company Name: Apple

Contact Name: Seidat Ibrahimov

Title: Purchasing Manager

Address: Netchler ave.2

Region: AZ

Country: Azerbaijan

Fax:

City: Baki

Postal Code: AZ100

Phone: (055) 555-2222

Home Page: almaslora.az

Add Products

Review Products

Record: 1 of 29

Figure 5.41 Products Suppliers

# Run a Reports

## Alphabetical List of Products

21-jun-11

Umbrella  
Computer/Laptop/Netbook/

Product Name:	Product ID:	Quantity Per Unit:	Unit Price:
Acer laser book	49	1	600,00 man.
ADSL P660 T1 Simple	43	1	800,00 man.
APC Energy Source	16	1	199,00 man.
Ali 5200i	18	1	599,00 man.
Ali 9600GT	39	1	900,00 man.
AutoCad2005	38	1	100,00 man.
AutoCad2007	2	1	550,00 man.
Avira Internet Security	73	1	300,00 man.
	3	1	200,00 man.
	63	1	000,00 man.

Product Name:	Product ID:	Quantity Per Unit:	Unit Price:
BlackBerry Bold 9700	7	1	30,00 man.
BlackBerryTouch9600	6	1	2,5,00 man.
Boston APC energy saver			

Product Name:	Product ID:	Quantity Per Unit:	Unit Price:
calculator inst TI-84Plus			
Canon 10000			
canon eos 4			
Canon scanner du25			
Casio Scientific calculator P100			
Cisco 2801 Router			
Cisco 6550 Router			
Cisco switch 2660			
Clock for office			

Figure 5.42 Alphabetical List of Products

Figure 5.43 Catalog



# INVOICE

Address: Mehasti street 12, Netchikarmetro, Nzami distric  
 Tel: +894 12 422-7200  
 Fax: +894 50 556-5555  
 E-mail: info@umbrella.com

Date: 21-lyun-11

Franklin Offshore  
 Huppst: 20  
 Detroit 06022  
 America

ASC OM GMBH  
 Eugen-Müller  
 Salzburg 5020  
 Austria

Swift  
 m.kayl Mus hving 37  
 Baki Az Az1xxx  
 Azerbaijan

Ricardo Home Collection  
 Av. Copacabana, 267  
 Rio de Janeiro RJ 02389-890  
 Brazil

Wellington Papers  
 Rua do Mercado, 12  
 Resende SP 08737-363  
 Brazil

William Kala  
 Keskuskatu 46  
 Helsinki 21240  
 Finland

VinNet Chips  
 50 rue de l'abbaye  
 Reims 51100  
 France

Special Life  
 26, rue Lauriston  
 Paris 75016  
 France

Wlan Dek mouse  
 Adenauerallee 900  
 Stuttgart 70563  
 Germany

Tortuga Steel  
 Avda. Azteca 123  
 Mexico D.F. 06033  
 Mexico

Franklin Offshore  
 Berkeley Gardens  
 12, Brewery  
 Detroit 06022  
 America

Ranch Homes  
 Av. del Libertador 900  
 Buenos Aires 1010  
 Argentina

Swift  
 Suleyman Rustam 46  
 Baki Az Az1xxx  
 Azerbaijan

Quede Banisul  
 Rua da Pacificadora, 12  
 Rio de Janeiro 02389-073  
 Brazil

Trado Hipercats  
 Av. Inês de Castro, 414  
 São Paulo SP 06634-030  
 Brazil

Vaari Studio  
 Smaagslet 46  
 Åhus 8200  
 Denmark

ENI  
 12, rue des Bouchers  
 Marseille 13008  
 France

Victu Electronics  
 2, rue du Commerce  
 Lyon 69004  
 France

Antony Zimmer  
 Luisenstr. 48  
 Münster 44087  
 Germany

Swift  
 Matadero: 2312  
 Mexico D.F. 06023  
 Mexico

Franklin Offshore  
 Av. dos Lusíadas, 23  
 Detroit 06022  
 America

Franklin Offshore  
 Sierras de Guanajuato 8988  
 Detroit 06022  
 America

Cameroon  
 H.Javid 546  
 Baki  
 Azerbaijan

Super Electronics  
 Boulevard Tirou, 265  
 Charleroi B-8000  
 Belgium

Queen Braxox  
 Alameda 891  
 San Paulo 06487-020  
 Brazil

Simons hardware  
 Vinbeillet 34  
 København 1734  
 Denmark

Wärthi  
 Toivokatu 38  
 Oulu 90110  
 Finland

Total  
 24, place Kléber  
 Strasbourg 67000  
 France

QUICK Solutions  
 Taucherstraße 10  
 Cuneo 01307  
 Germany

Reggiani Beauty  
 Strada Provinciale 124  
 Reggio Emilia 42100  
 Italy

## Ship T

## Bill T

Order ID:	Customer ID:	Salesperson	Order Date:	Required Date:	Shipped Date:	Ship Via:
-----------	--------------	-------------	-------------	----------------	---------------	-----------

Product ID:	Product Name:	Quantity:	Unit Price:	Discount:
-------------	---------------	-----------	-------------	-----------

Subtotot
Freight
Total











Figure 5.44 Customer Labels

Figure 5.45 Invoice



Address: Mahsati street 12, Nefchilar metro, Nizami district.  
Tel: +994 12 422-72-00  
Fax: +994 50 555-55-55  
E-mail: info@umbrella.com

Quick accessing to Forms and Reports database Please use buttons below.

 Categories	 Alphabetical List of Products
 Customer Labels Dialog	 Customer Labels
 Customer Orders	 Invoice
 Customer Orders Subform1	 Products by Category
 Customer Orders Subform2	 Summary of Sales by Quarter
 Customer Phone List	 Summary of Sales by Year
 Customers	
 Employees (page break)	
 Quarterly Orders	
 Quarterly Orders Subform	
 Orders	
 Orders Subform	
 Product List	
 Products	
 Suppliers	

[Start Up View](#) [Exit Windows](#)

Figure 5.46 Design a window which is running switchboard and accessing to final result.

## CONCLUSION

Not all ERP implementations lead to success. It is not realistic to assume that buying an ERP package to solve all company problems. ERP is no silver bullet. This thesis showed that project planning & implementation plays a very important role in realization of Enterprise Resource Planning systems. Lack of a strong plan may result in project failure. System analysis should be started before searching and deciding to buy a particular ERP package. Because system analysis outputs the requirements of the company and shows the parts of the processes that go wrong. Wrong going processes should be addressed before stepping to ERP selection phase.

Besides the points stated above, quality of the project team, synchronization of project plan with jobs being done, top management's support to project, support from ERP vendor are among the most important success factors of ERP implementation.

And lastly, end users should be included in the implementation process. They have to feel that they own the project. If all these conditions are satisfied, ERP implementation process can be done successfully.

## Appendix A - Tables SQL view.

```
CREATE TABLE Employees (  
EmployeeID number NOT NULL PRIMARY  
KEY,  
FirstName text(20),  
LastName text(20),  
Title text(30),  
TitleOfCourtesy text(25),  
BirthDate date,  
HireDate date,  
Address text(60),  
City text(15),  
Region text(15),  
PostalCode text(15),  
Country text(15),  
Phonenumber text(24)  
OfficeExt text(4) )
```

```
CREATE TABLE Categories (  
CategoryID number NOT NULL PRIMARY  
KEY,  
CategoryName text(25))
```

```
CREATE TABLE Customers (  
CustomerID number NOT NULL PRIMARY  
KEY,  
CompanyName text(20)  
ContactName text(20)  
ContactTitle text(20)  
Address text(20)  
City text(15)  
Region text(15)  
PostalCode text(10)  
Country text(15)  
Phone text(12) )
```

```
CREATE TABLE OrderDeatils (  
OrderID number NOT NULL PRIMARY KEY,  
ProductID number NOT NULL PRIMARY KEY,  
UnitPrice currency,  
Discount number(10),  
Discount number(10))
```

```
CREATE TABLE Order (  
OrderID number NOT NULL PRIMARY KEY,  
CustomerID text(5),  
EmployeeID number(10)  
OrderDate date,  
RequiredDate date,  
ShippedDate date,  
ShipVia number(10),  
Freight currency,  
ShipName text(20),  
ShipAddress text(20),  
ShipCity text(15),  
ShipRegion text(15),  
ShipPostalCode text(10),  
ShipCountry text(15))
```

```
CREATE TABLE Shippers (  
ShipperID number NOT NULL PRIMARY KEY,  
CompanyName text(20),  
Phone text(12))
```



**CREATE TABLE Product (**

ProductID number NOT NULL PRIMARY KEY,  
ProductName text(20),  
SupplierID number(10),  
CategoryID number(10),  
QuantityPerUnit number(10),  
UnitPrice currency,  
UnitsInStock number(10),  
UnitsOnOrder number(10),  
ReorderLevel number(10),  
Discontinued char))

**CREATE TABLE Supplier (**

SupplierID number NOT NULL PRIMARY  
KEY,  
CompanyName text(20),  
ContactName text(20),  
ContactTitle text(20),  
Address text(20),  
City text(20),  
Region text(20),  
PostalCode text(10),  
Country text(20),  
Phone text(20),  
Fax text(20),  
HomePage text(20))

## Appendix B – Queries SQL view.

**SELECT** Categories.CategoryName  
FROM Categories  
ORDER BY Categories.CategoryName;

**SELECT** [Product List].ProductID, [Product List].ProductName  
FROM Products AS [Product List]  
WHERE ((([Product List].Discontinued)=No))  
ORDER BY [Product List].ProductID, [Product List].ProductName;

**SELECT** City, CompanyName, ContactName, "Customers" AS [Relationship]  
FROM Customers  
UNION SELECT City, CompanyName, ContactName, "Suppliers"  
FROM Suppliers  
ORDER BY City, CompanyName;

**PARAMETERS** [Beginning Date] DateTime, [Ending Date] DateTime;  
**SELECT** DISTINCTROW Employees.Country, Employees.LastName, Employees.FirstName,  
Orders.ShippedDate, Orders.OrderID, [Order Subtotals].Subtotal AS SaleAmount  
FROM Employees INNER JOIN (Orders INNER JOIN [Order Subtotals] ON Orders.OrderID =  
[Order Subtotals].OrderID) ON Employees.EmployeeID = Orders.EmployeeID  
WHERE (((Orders.ShippedDate) Between [Beginning Date] And [Ending Date]));

```

SELECT DISTINCTROW Orders.ShipName, Orders.ShipAddress, Orders.ShipCity,
Orders.ShipRegion, Orders.ShipPostalCode, Orders.ShipCountry, Orders.CustomerID,
Customers.CompanyName, Customers.Address, Customers.City, Customers.Region,
Customers.PostalCode, Customers.Country, [FirstName] & " " & [LastName] AS Salesperson,
Orders.OrderID, Orders.OrderDate, Orders.RequiredDate, Orders.ShippedDate,
Shippers.CompanyName, [Order Details].ProductID, Products.ProductName, [Order
Details].UnitPrice, [Order Details].Quantity, [Order Details].Discount, CCur([Order
Details].UnitPrice*[Quantity]*(1-[Discount])/100)*100 AS ExtendedPrice, Orders.Freight
FROM Shippers INNER JOIN (Products INNER JOIN ((Employees INNER JOIN (Customers
INNER JOIN Orders ON Customers.CustomerID = Orders.CustomerID) ON
Employees.EmployeeID = Orders.EmployeeID) INNER JOIN [Order Details] ON
Orders.OrderID = [Order Details].OrderID) ON Products.ProductID = [Order
Details].ProductID) ON Shippers.ShipperID = Orders.ShipVia
WHERE (((Customers.City)="Baki"));

```

```

SELECT DISTINCTROW Invoices.*
FROM Invoices
WHERE (((Invoices.OrderID)=[Forms]![Orders]![OrderID]));

```

```

SELECT DISTINCTROW Customers.CustomerID, Customers.CompanyName,
Customers.City, Customers.Country, Orders.OrderDate
FROM Orders INNER JOIN Customers ON Orders.CustomerID = Customers.CustomerID
WHERE (((Customers.CompanyName) Like "Swift") AND ((Customers.Country)="Azerbaijan")
AND ((Orders.OrderDate) Between #1/1/2008# And #12/31/2010#))
ORDER BY Customers.Country, Orders.OrderDate;

```

```

TRANSFORM Sum(CCur([Order Details].UnitPrice*[Quantity]*(1-[Discount])/100)*100) AS
ProductAmount
SELECT Products.ProductName, Orders.CustomerID, Year([OrderDate]) AS OrderYear
FROM Products INNER JOIN (Orders INNER JOIN [Order Details] ON Orders.OrderID =
[Order Details].OrderID) ON Products.ProductID = [Order Details].ProductID
WHERE (((Orders.OrderDate) Between #1/1/2008# And #12/31/2010#))
GROUP BY Products.ProductName, Orders.CustomerID, Year([OrderDate])
ORDER BY Year([OrderDate]) DESC
PIVOT "Qtr " & DatePart("q",[OrderDate],1,0) In ("Qtr 1","Qtr 2","Qtr 3","Qtr 4");

```

```

SELECT DISTINCTROW [Order Details].OrderID, [Order Details].ProductID,
Products.ProductName, [Order Details].UnitPrice, [Order Details].Quantity, [Order
Details].Discount, [Order Subtotals].Subtotal
FROM (Products INNER JOIN [Order Details] ON Products.ProductID = [Order
Details].ProductID) LEFT JOIN [Order Subtotals] ON [Order Details].OrderID = [Order
Subtotals].OrderID
ORDER BY [Order Details].OrderID;

```

```

SELECT DISTINCTROW [Order Details].OrderID, Sum(CCur([UnitPrice]*[Quantity]*(1-
[Discount])/100)*100) AS Subtotal
FROM [Order Details]
GROUP BY [Order Details].OrderID;

```

```

SELECT DISTINCTROW Categories.CategoryName, Products.ProductName,
Sum(CCur([Order Details].UnitPrice*[Quantity]*(1-[Discount])/100)*100) AS ProductSales
FROM (Categories INNER JOIN Products ON Categories.CategoryID = Products.CategoryID)
INNER JOIN (Orders INNER JOIN [Order Details] ON Orders.OrderID = [Order
Details].OrderID) ON Products.ProductID = [Order Details].ProductID
WHERE (((Orders.ShippedDate) Between #1/1/2008# And #12/31/2010#))
GROUP BY Categories.CategoryName, Products.ProductName;

```

```

SELECT DISTINCTROW Products.ProductName, Products.UnitPrice
FROM Products
WHERE (((Products.UnitPrice)>(SELECT AVG([UnitPrice]) From Products)))
ORDER BY Products.UnitPrice;

```

```

SELECT DISTINCTROW Categories.CategoryID, Categories.CategoryName,
Products.ProductName
FROM Categories INNER JOIN (Products INNER JOIN (Orders INNER JOIN [Order Details
Extended] ON Orders.OrderID = [Order Details Extended].OrderID) ON Products.ProductID =
[Order Details Extended].ProductID) ON Categories.CategoryID = Products.CategoryID
WHERE (((Orders.OrderDate) Between #1/1/2008# And #12/31/2010#))
GROUP BY Categories.CategoryID, Categories.CategoryName, Products.ProductName
ORDER BY Products.ProductName;

```

```

SELECT DISTINCTROW TOP 10 Products.ProductName AS TenMostExpensiveProducts,
Products.UnitPrice
FROM Products ORDER BY Products.UnitPrice DESC;

```

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