

**MARMARA UNIVERSITY COMPUTER ENGINEERING DEPARTMENT**

Step 2: Requirement Analysis & Conceptual Database Design

Due To: 19/12/2022

Lecturer: Associate Professor Mustafa AĞAOĞLU

Course: CSE 3055 Database Systems

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**1) INTRODUCTION**

The aim of this project is creating database system and web interface for ISTANBULDC. This project provides to company for manage data in order to facilitete. In addiation, we will design user-friendly web interface. We use MS SQL technology for this project.

**2) ENTITIES & DEFINITIONS**

* **Customer** entity keeps detail information about purchaser. Each customer has unique CustomerID, FullName (composed of FirstName and LastName), Gender, Birthdate, Age (derived from BirthDate), Mail, PhoneNumber, UserID ,UserPassword and RepresentaticeID. A customer has to a representative.
* **Employee** entity keeps detail information about company workers. Each employee has unique EmployeeID, FullName (composed of FirstName and LastName), Gender, Birthdate, Age (derived from BirthDate), Mail, PhoneNumber, Salary, DeptNo and SuperSsn. A employee has to a department number and manager.
* **Address** entity keeps information address of employees and customers. Each address has Ssn of customer and employee, Address (composed of District,City,ZipCode).
* **Department** entitykeeps detail information about company’s departments. Each department has unique DepartmentNo, DepartmentName and MgrSsn. A department has a manager.
* **Server** entity keeps detail information about products owned by the company. Each server has unique ServisTag, Model, CPU, RAM, Storeage, Price, CustomerID, CabinID and OrderID. A server is hired by a customer. A server is located in a cabin.A server can be found in an order.
* **Cabin** entity keeps servers information about the area where located.Each cabin has a unique CabinID, Capacity and CabinType. A cabin can contain one or more server.
* **Network\_Switch** entity keeps information about server’s network properties. Each network switch has a unique SwitchID, CabinID, EthernetPort and IdracPortNo. A network switch locates in a cabin.
* **Order** entity keeps customer’s information about purchasing. Each order has a unique OrderID and CustomerID. An order is placed by a customer. An order can contain one or more servers. An order is billed by a bill.
* **Bill** entity keeps information about orders. Each bill has a unique BillID,OrderID, Amount (derived from price of server), Date. A bill contains an order.

**3) BUSINESS PROCESSES & DEFINITIONS**

* **Consultancy:** The customer contacts the company and states their needs. The company appoints a consultant to the client. The company determines the required system features according to the customer's needs. The representative contacts with the customer throughout the purchasing and use process.
* **Products and Sale:** Dedicated Server hosting service, you can choose one of our three server category offers: Single Processor Servers, Dual Processor Servers, Quad+ Processor Servers. You can manage your server as you want, and control your applications as you wish. After the server is determined according to the customer's needs, the price is determined by the sales department. The customer's first payment is received immediately after the sale.
* **Wholesale Purchansing:** The company procures the necessary materials from the wholesaler it works with.
* **Making The Product Ready:** The system is prepared with the supplied parts. The necessary software process starts according to the customer's needs analysis. The server is placed in the cabin and controls are provided. It is then made available to the customer.
* **Customer Complaint:** The customer informs the company about the server connection problems, system crashes, and storage problems. Then, for the customer's request, a contact is established with the customer representative and the examination of the system is started.
* **Produciton Destruction:** If the broken part in the system is due to the company, the part is thrown away.
* **Wholesale Return:** If the broken part in the system is not due to the company, the part is returned to the supplier.
* **Services:** The servers are maintained on a monthly basis. If the system is not sufficient for the customer's needs, hardware updates are made.

**4) BUSINESS RULES & CONTRAINTS**

* Using MSSQL
* Meeting at regular intervals
* Distribution of tasks among group members
* Doing the necessary research
* Satisfy the requirements of company

**5) BUSINESS REQUIREMENTS**

**1) Functional Requirments**

* The database could be rearranged for the adding new features, customers' information and customer requirements.
* The customer should be able to log in to the system with their user ID and user password.
* Authentication of user whenever he or she logs into the system.
* The customer can be view product information and bill of purchased products via website.
* Price of any product can be change easily.
* The manager of company can be reach the database fields.Also manager can change the salary of desired employee.
* The manager can adds the new employee into the system.
* The system allows to modify previously entered data in the database.
* The historical events(purchased product,previous price of product etc.) can be viewed.
* Database System is also able to support the entity definitions.
* All sales can be retrieve the desired date range.

**2 ) Non-Functional Requirments**

* Employees never allowed to update their salary information. Such attempt should be reported to the security administrator.
* Data must be stored in website.A website should be capable enough to handle 2 million users with affecting its performance
* The database should be portable. So moving from one OS to other OS does not create any problem.
* The user interface should be user-friendly in a way that everyone can easily understand.
* The project has to include requirements analysis design(RAD).(Brief introduction about project, overview, list of entities and its definitions, at last list of functional and non-functional requirements.)