

DOKUZ EYLÜL UNIVERSITY
ENGINEERING FACULTY
DEPARTMENT OF COMPUTER ENGINEERING

CME 2210
Object Oriented Analysis and Design

DOKUZ EYLUL GROCERY STORE PROJECT

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OUTLINE

- Chapter 1: Introduction	1
- Chapter 2: Planning	2
-Feasibility	
- Chapter 3: Requirements Analysis	3
- Chapter 4: Requirements Specification.	4
-Actions / Events	
-Classes	
-Interfaces & Swing	
- Chapter 5: System Design	5
-Class Diagram	
-Use Case Diagram	
-Activity Diagram	
-Sequence Diagram	
-Layout Relationship Diagram	
- Chapter 6: Implementation	6
- Chapter 7: Testing	7
- Chapter 8: Support	8
- Chapter 9: Conclusion & Future Works	9

CHAPTER ONE

INTRODUCTION

The DGS(Dokuz Eylül Grocery Store) project is a basic system developed to manage every aspect of a market. The project is include two main areas, Manager System and Customer (Shopping) System. Considering the needs of a market, it is prepared under various steps and titles.

It consists of 7 basic steps such as Planning, Requirement Analysis, Requirement Specification, System Design, Implementation ,Testing and Support.

Sale: The process beginning to customer entering to the market and goes until leaving the market. It includes searching items, taking and releasing items, buying items. At this part Customer and Cashier takes active roles.

Stock: Stock management is one of the part background works. It make shelf refresh every time and stock to shelf moves. When the stock is running low, manager makes orders. Stock personel, Manager take active roles at this part.

Staff Management: This part is also on of the background part of the system, this part includes Staff hiring & firing and Paying salaries.

CHAPTER TWO

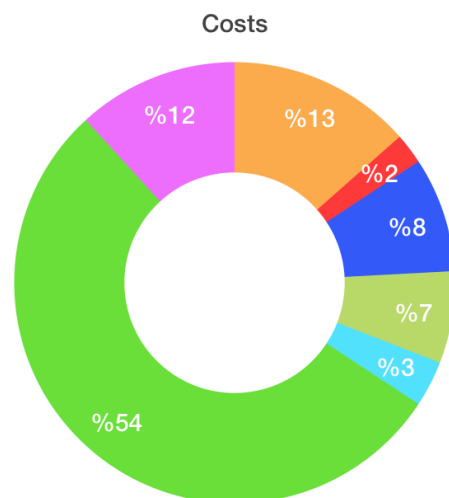
PLANNING

First step of the project is Planning. At this step, customer company and producer company makes meetings for discuss the ideas. Every other steps following this starter step. This step begins with the idea that the consumer firm wants to create an idea and realize it as a project. For handling one or two meetings can be settled, then the project can be started.

Since the consumer company needs a market application, it applies to a manufacturer company. They expected Management system for market and selling system for customers. At this step our team make small analysis for making to first feasibility report.

FEASIBILITY

COSTS	
Database Experts	₺24.000
Database Services	₺4.000
System administrator	₺15.000
Trainers	₺12.000
Interface Illustrators	₺6.000
Back-End Developers	₺96.000
Front-End Developers	₺21.000
TOTAL COST OF THE PROJECT	₺178.000



- Database Experts
- Database Services
- 36.000 Db experts
- Trainers
- Interface Illustrators
- Back-End Developers
- Front-End Developers

CHAPTER THREE

REQUIREMENTS ANALYSIS

At this step consumer and producer companies arrange several meetings for determine what the company looking for and what are they need actually. This step include little project for the make a abstract software to make real product which can correctable by consumer.

They say they have several types employees and one leader for each market who called manager. They have many type of Products. They want to order their need from Global Market and the Global Market send the products their stocks. They want to handle the order steps. Also they need to keep Shelf and Stocks data at somewhere for handle the Products Management. Finally they also need the interface for customer which has registration and shopping systems.

CHAPTER FOUR

REQUIREMENTS SPECIFICATION

Producer company's team noted the all requirements at meetings. Then using this requirement docs for discover what company actually needs.

This step is quite important for after steps of the project, if requirement specification documents prepared perfectly after release problems or implementation problems can handle more easily and cheap. Implementation team can know what they need to change for actually.

Last part of this step Consumer and Producer must meet on same ideas. This step define the final product features.

ACTIONS / EVENTS

Manager logining, Customer registration, ShelftoStock, StocktoShelf, ListShelf, ListStock, HireEmployee, FireEmployee, LookDGSInfo, BuyfromGlobalMarket, StartShopping, TakeItem, ReleaseItem, CalculateBasket, BuyBasket, Return

CLASSES

Address, BankAccount, Case, Cashier, Customer, Employee, GlobalOrderMarket, Item, Manager, Market, Phone, Security, Stockman

INTERFACES & SWING

EmployeeInterface

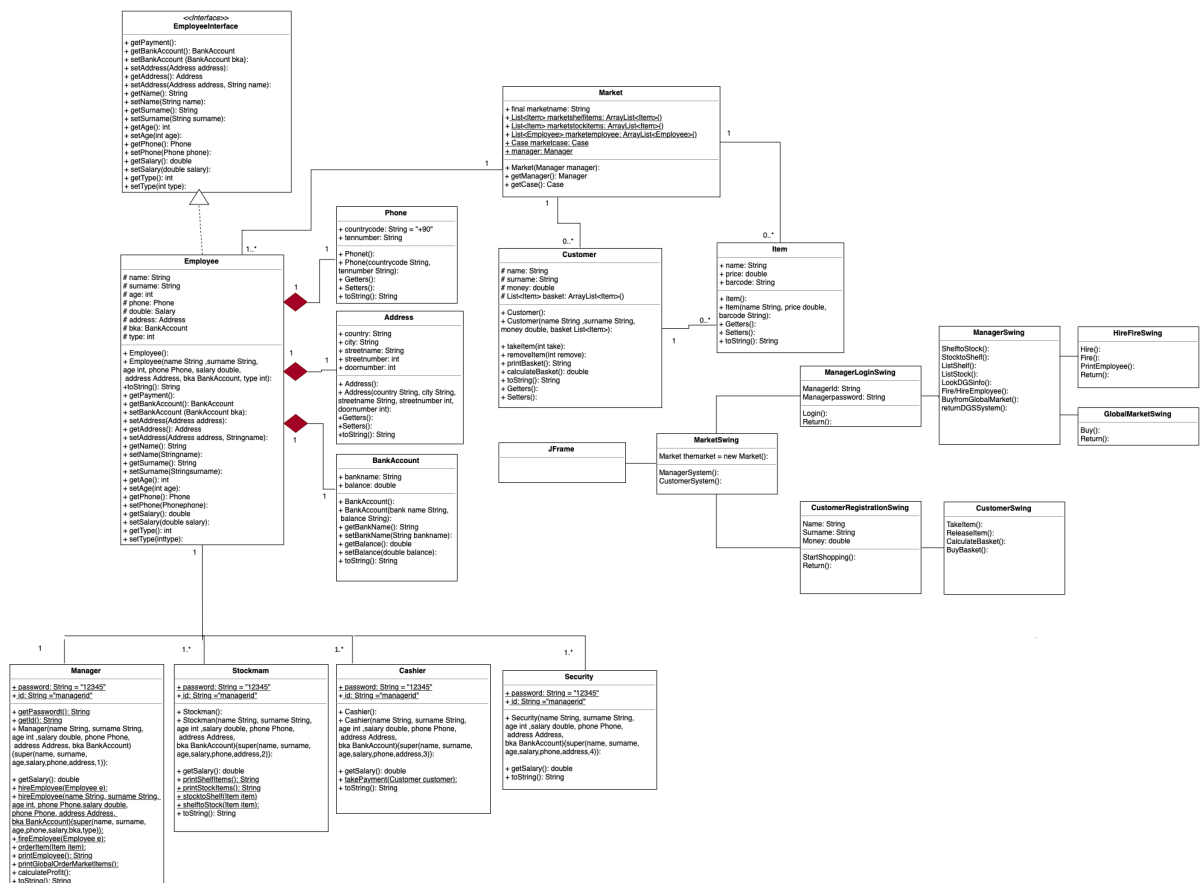
CustomerRegistrationSwing, CustomerSwing, GlobalMarketSwing, HireFireSwing, ManagerLoginSwing, MarketSwing.

CHAPTER FIVE

SYSTEM DESIGN

Based the detailed Requirements Specifications documents Software Engineers begin to design system. This step the engineer team must define; How to system run, what are the classes, interfaces, inputs, outputs and errors. Methods, variables, classes communications, data sharing and coupling of the projects. Also Drawing various types of Diagrams is very important part of this step.

CLASS DIAGRAM



```

    usecaseDiagram
        actor Stockman
        actor Manager
        actor Customer
        actor Market
        actor Cashier
        actor Security

        Stockman --> UC1[Check stocks]
        Stockman --> UC2[Check shelf]
        Stockman --> UC3[Take salary]
        Stockman --> UC4[Make order request]
        Stockman --> UC5[Take of product request]

        UC1 --> UC1a[AddStock]
        UC1 --> UC1b[RemoveStock]
        UC2 --> UC2a[Add shelf]

        UC3 --> UC3a[Take salary]
        UC3 --> UC3b[Pay salary]

        UC4 --> UC4a[Order the product]
        UC4 --> UC4b[Calculate the profit]
        UC4 --> UC4c[Take request from Stockman]

        UC5 --> UC5a[Take payment]
        UC5 --> UC5b[Give receipt]
        UC5 --> UC5c[Read barcodes]
        UC5 --> UC5d[Take salary]

        UC5a --> UC5a1[Take payment]
        UC5a --> UC5a2[Give receipt]
        UC5a --> UC5a3[Read barcodes]
        UC5a --> UC5a4[Take salary]

        UC5b --> UC5b1[Take payment]
        UC5b --> UC5b2[Give receipt]
        UC5b --> UC5b3[Read barcodes]
        UC5b --> UC5b4[Take salary]

        UC5c --> UC5c1[Take payment]
        UC5c --> UC5c2[Give receipt]
        UC5c --> UC5c3[Read barcodes]
        UC5c --> UC5c4[Take salary]

        UC5d --> UC5d1[Take payment]
        UC5d --> UC5d2[Give receipt]
        UC5d --> UC5d3[Read barcodes]
        UC5d --> UC5d4[Take salary]

        UC5e[Provide Security (interfere with people)] --> UC5e1[Take salary]

        UC6[Take salary] --> UC6a[Take salary]
        UC6 --> UC6b[Pay salary]

        UC7[Order the product] --> UC7a[Order the product]
        UC7 --> UC7b[Calculate the profit]
        UC7 --> UC7c[Take request from Stockman]

        UC8[Take payment] --> UC8a[Take payment]
        UC8 --> UC8b[Give receipt]
        UC8 --> UC8c[Read barcodes]
        UC8 --> UC8d[Take salary]

        UC9[Give receipt] --> UC9a[Take payment]
        UC9 --> UC9b[Give receipt]
        UC9 --> UC9c[Read barcodes]
        UC9 --> UC9d[Take salary]

        UC10[Read barcodes] --> UC10a[Take payment]
        UC10 --> UC10b[Give receipt]
        UC10 --> UC10c[Read barcodes]
        UC10 --> UC10d[Take salary]

        UC11[Take salary] --> UC11a[Take salary]
        UC11 --> UC11b[Pay salary]

        UC12[Provide Security (interfere with people)] --> UC12a[Take salary]

        UC13[Take salary] --> UC13a[Take salary]
        UC13 --> UC13b[Pay salary]

        UC14[Order the product] --> UC14a[Order the product]
        UC14 --> UC14b[Calculate the profit]
        UC14 --> UC14c[Take request from Stockman]

        UC15[Take payment] --> UC15a[Take payment]
        UC15 --> UC15b[Give receipt]
        UC15 --> UC15c[Read barcodes]
        UC15 --> UC15d[Take salary]

        UC16[Give receipt] --> UC16a[Take payment]
        UC16 --> UC16b[Give receipt]
        UC16 --> UC16c[Read barcodes]
        UC16 --> UC16d[Take salary]

        UC17[Read barcodes] --> UC17a[Take payment]
        UC17 --> UC17b[Give receipt]
        UC17 --> UC17c[Read barcodes]
        UC17 --> UC17d[Take salary]

        UC18[Take salary] --> UC18a[Take salary]
        UC18 --> UC18b[Pay salary]

        UC19[Provide Security (interfere with people)] --> UC19a[Take salary]

        UC20[Take salary] --> UC20a[Take salary]
        UC20 --> UC20b[Pay salary]

        UC21[Order the product] --> UC21a[Order the product]
        UC21 --> UC21b[Calculate the profit]
        UC21 --> UC21c[Take request from Stockman]

        UC22[Take payment] --> UC22a[Take payment]
        UC22 --> UC22b[Give receipt]
        UC22 --> UC22c[Read barcodes]
        UC22 --> UC22d[Take salary]

        UC23[Give receipt] --> UC23a[Take payment]
        UC23 --> UC23b[Give receipt]
        UC23 --> UC23c[Read barcodes]
        UC23 --> UC23d[Take salary]

        UC24[Read barcodes] --> UC24a[Take payment]
        UC24 --> UC24b[Give receipt]
        UC24 --> UC24c[Read barcodes]
        UC24 --> UC24d[Take salary]

        UC25[Take salary] --> UC25a[Take salary]
        UC25 --> UC25b[Pay salary]

        UC26[Provide Security (interfere with people)] --> UC26a[Take salary]

        UC27[Take salary] --> UC27a[Take salary]
        UC27 --> UC27b[Pay salary]

        UC28[Order the product] --> UC28a[Order the product]
        UC28 --> UC28b[Calculate the profit]
        UC28 --> UC28c[Take request from Stockman]

        UC29[Take payment] --> UC29a[Take payment]
        UC29 --> UC29b[Give receipt]
        UC29 --> UC29c[Read barcodes]
        UC29 --> UC29d[Take salary]

        UC30[Give receipt] --> UC30a[Take payment]
        UC30 --> UC30b[Give receipt]
        UC30 --> UC30c[Read barcodes]
        UC30 --> UC30d[Take salary]

        UC31[Read barcodes] --> UC31a[Take payment]
        UC31 --> UC31b[Give receipt]
        UC31 --> UC31c[Read barcodes]
        UC31 --> UC31d[Take salary]

        UC32[Take salary] --> UC32a[Take salary]
        UC32 --> UC32b[Pay salary]

        UC33[Provide Security (interfere with people)] --> UC33a[Take salary]

        UC34[Take salary] --> UC34a[Take salary]
        UC34 --> UC34b[Pay salary]

        UC35[Order the product] --> UC35a[Order the product]
        UC35 --> UC35b[Calculate the profit]
        UC35 --> UC35c[Take request from Stockman]

        UC36[Take payment] --> UC36a[Take payment]
        UC36 --> UC36b[Give receipt]
        UC36 --> UC36c[Read barcodes]
        UC36 --> UC36d[Take salary]

        UC37[Give receipt] --> UC37a[Take payment]
        UC37 --> UC37b[Give receipt]
        UC37 --> UC37c[Read barcodes]
        UC37 --> UC37d[Take salary]

        UC38[Read barcodes] --> UC38a[Take payment]
        UC38 --> UC38b[Give receipt]
        UC38 --> UC38c[Read barcodes]
        UC38 --> UC38d[Take salary]

        UC39[Take salary] --> UC39a[Take salary]
        UC39 --> UC39b[Pay salary]

        UC40[Provide Security (interfere with people)] --> UC40a[Take salary]

        UC41[Take salary] --> UC41a[Take salary]
        UC41 --> UC41b[Pay salary]

        UC42[Order the product] --> UC42a[Order the product]
        UC42 --> UC42b[Calculate the profit]
        UC42 --> UC42c[Take request from Stockman]

        UC43[Take payment] --> UC43a[Take payment]
        UC43 --> UC43b[Give receipt]
        UC43 --> UC43c[Read barcodes]
        UC43 --> UC43d[Take salary]

        UC44[Give receipt] --> UC44a[Take payment]
        UC44 --> UC44b[Give receipt]
        UC44 --> UC44c[Read barcodes]
        UC44 --> UC44d[Take salary]

        UC45[Read barcodes] --> UC45a[Take payment]
        UC45 --> UC45b[Give receipt]
        UC45 --> UC45c[Read barcodes]
        UC45 --> UC45d[Take salary]

        UC46[Take salary] --> UC46a[Take salary]
        UC46 --> UC46b[Pay salary]

        UC47[Provide Security (interfere with people)] --> UC47a[Take salary]

        UC48[Take salary] --> UC48a[Take salary]
        UC48 --> UC48b[Pay salary]

        UC49[Order the product] --> UC49a[Order the product]
        UC49 --> UC49b[Calculate the profit]
        UC49 --> UC49c[Take request from Stockman]

        UC50[Take payment] --> UC50a[Take payment]
        UC50 --> UC50b[Give receipt]
        UC50 --> UC50c[Read barcodes]
        UC50 --> UC50d[Take salary]

        UC51[Give receipt] --> UC51a[Take payment]
        UC51 --> UC51b[Give receipt]
        UC51 --> UC51c[Read barcodes]
        UC51 --> UC51d[Take salary]

        UC52[Read barcodes] --> UC52a[Take payment]
        UC52 --> UC52b[Give receipt]
        UC52 --> UC52c[Read barcodes]
        UC52 --> UC52d[Take salary]

        UC53[Take salary] --> UC53a[Take salary]
        UC53 --> UC53b[Pay salary]

        UC54[Provide Security (interfere with people)] --> UC54a[Take salary]

        UC55[Take salary] --> UC55a[Take salary]
        UC55 --> UC55b[Pay salary]

        UC56[Order the product] --> UC56a[Order the product]
        UC56 --> UC56b[Calculate the profit]
        UC56 --> UC56c[Take request from Stockman]

        UC57[Take payment] --> UC57a[Take payment]
        UC57 --> UC57b[Give receipt]
        UC57 --> UC57c[Read barcodes]
        UC57 --> UC57d[Take salary]

        UC58[Give receipt] --> UC58a[Take payment]
        UC58 --> UC58b[Give receipt]
        UC58 --> UC58c[Read barcodes]
        UC58 --> UC58d[Take salary]

        UC59[Read barcodes] --> UC59a[Take payment]
        UC59 --> UC59b[Give receipt]
        UC59 --> UC59c[Read barcodes]
        UC59 --> UC59d[Take salary]

        UC60[Take salary] --> UC60a[Take salary]
        UC60 --> UC60b[Pay salary]

        UC61[Provide Security (interfere with people)] --> UC61a[Take salary]

        UC62[Take salary] --> UC62a[Take salary]
        UC62 --> UC62b[Pay salary]

        UC63[Order the product] --> UC63a[Order the product]
        UC63 --> UC63b[Calculate the profit]
        UC63 --> UC63c[Take request from Stockman]

        UC64[Take payment] --> UC64a[Take payment]
        UC64 --> UC64b[Give receipt]
        UC64 --> UC64c[Read barcodes]
        UC64 --> UC64d[Take salary]

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        UC65 --> UC65c[Read barcodes]
        UC65 --> UC65d[Take salary]

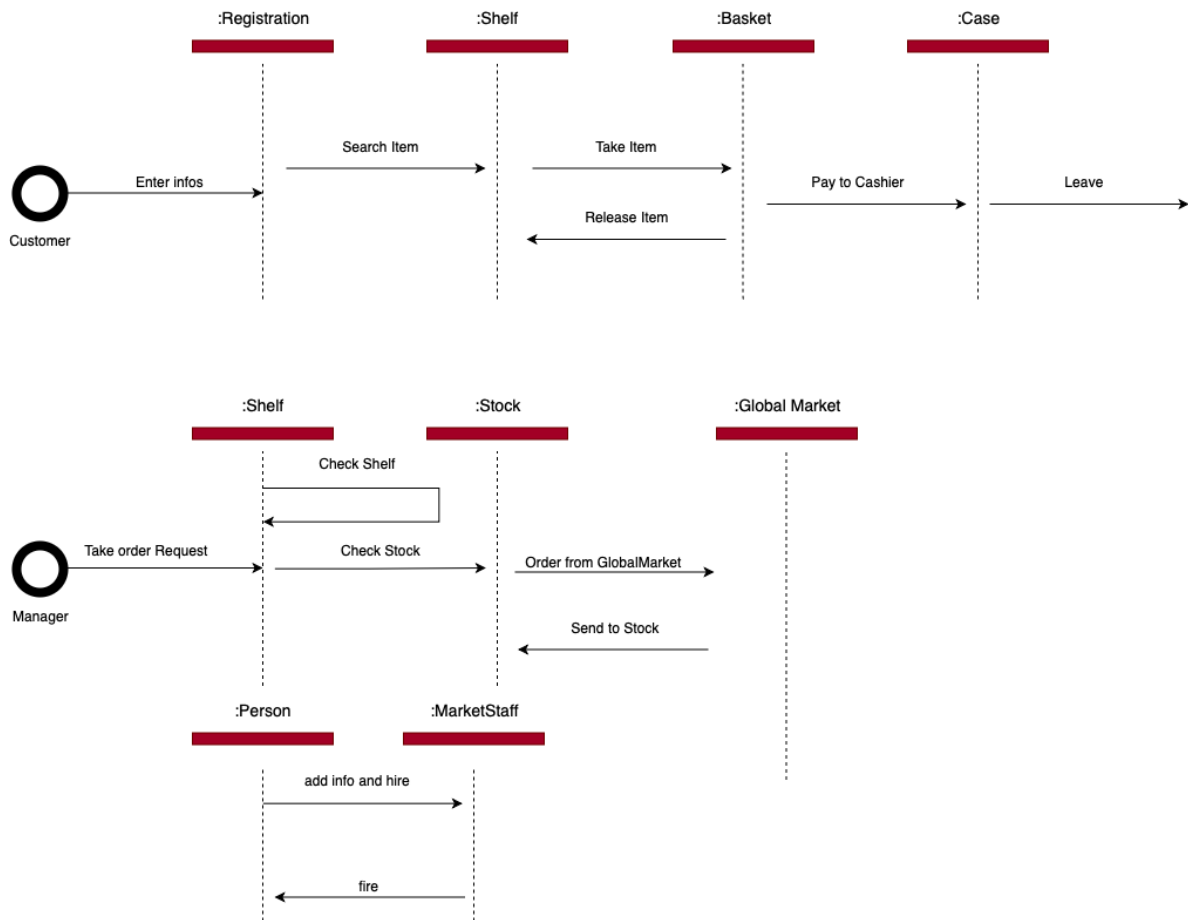
        UC66[Read barcodes] --> UC66a[Take payment]
        UC66 --> UC66b[Give receipt]
        UC66 --> UC66c[Read barcodes]
        UC66 --> UC66d[Take salary]

        UC67[Take salary] --> UC67a[Take salary]
        UC67 --> UC67b[Pay salary]

        UC68[Provide Security (interfere with people)] --> UC68a[Take salary]

        UC69[Take salary] --&gt
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SEQUENCE DIAGRAM



LAYOUTS RELATIONSHIP DIAGRAM



CHAPTER SIX

IMPLEMENTATION

The implementation step developers team start to implementation of the scope specification documents. Previous step's (Design) documents are most important source for Developers at this step. At this step developers convert the abstract idea to real usable product.

Consumer team by using the market design documents to code methods, define variables and relationships. According to Development style this part can be parallel or separate step. Agile approach combine this step and design step but heavy weight methods separate them. Spiral models or Iterative Waterfall can make this step iterative (ot repetitive).

CHAPTER SEVEN

TESTING

After the System Design complete and we get runnable project. Now the testing team start to testing the system. They try the system with various inputs and documents the result for expected outputs and errors.

At this step testers and users (at the beta test) testing the system. This part is important part of the project, the faults of the project discovered at this step, if the faults can be detective of this part, the cost of the correctness will be lower but if the faults will detective after the release project it cost will be more higher, even hundred times more.

CHAPTER EIGHT

SUPPORT

Last and longest part of the project is maintenance, at this part, the producer company keep to product life until the consumer company decide to retire the system. This step going until project retirement. Most companies biggest income provide by maintenance. Sometime for this reason companies found their own producer company.

CHAPTER NINE

CONCLUSION & FUTURE WORKS

Every project has various similar steps, this situation makes it called Engineering job. This DGS project and previous projects show us we have some approaches and design models. We define our task well than choose the correct method and approaches for handling the task.

SDLC steps, Developments methods and OOP Approaches which overriding, overloading, cohesion , coupling, inheritance, encapsulation are so important for all projects.