# Chapter 3:

# 3.1 Design:

Project design is early phase of the project where key’s features, structure, criteria for the success and all the major deliverable are planned out. By using different types of tools, technique, models first implemented in the paper or in the design tool and later implemented in the real system. we have design the system for the grocery store. Design is the most important part and its play the vital role in my project.

In my project design phase generate a variety of different output, including final class diagram, behavioral model, flow chart, database design, prototype of the system, user interface and also give an over view for the backend and the front of the system.

# 3.2 structural model:

## 3.2.1 class diagram:

Class diagram is static diagram which represent static view of the application. It describes the attributes and the operation of a class and also constraints on the system. Its shows a collection of classes, interfaces, association and constraints. It referred as the blueprint of the system.

The main purpose of the class diagram is:

* Analysis and design of the static view of an application.
* Describes the responsibilities of a system.

Notation used in the class diagram:

|  |  |
| --- | --- |
| **Notation used** | **Description** |
| Association | It is used to attach an association class to an association relationship to provide an information about the relation ship |
| Dependency |  |
|  |  |

# Behavioral diagram

# Activity diagram:

Activity diagram is another important part of UML diagram to describe the dynamic aspect of the system. It is important part in the project, it shows the dynamic representation of the system in my project. It shows the flow of one activity to another activity in the system. It can be described as the operation of the system.

Notation used in activity diagram.

|  |  |
| --- | --- |
| Notation used | Descriptions |
| Start/initial point | A small filled circle followed by the arrow represent the initial action state or start point of any activity diagram. |
| Action or activity state | An activity state represents the non-interruptible action of objects. It is a rectangle with rounded corners. |
| Action flow | Action flows, also called edge and paths, explained the transitions from one action state to the another. |
| Decision nodes | A diamond represents a decision with alternate paths. |
| Final state/end point |  |
| Swimlanes |  |

## sequence diagram:

sequence diagram are interaction diagrams that detailed how operation are carried out. it displays and explain the object relationship and interaction between them. It helps to represent the details of use case diagram. The purpose of the sequence diagram is used to show the relations between objects in the sequential order that those interactions occur.

Notation used in sequences diagram:

|  |  |
| --- | --- |
| **Notation used** | **Description** |
| Lifeline notation | A sequences diagram is made up of several of these lifeline notation that should be arranged horizontally across the top of the diagram. |
| Activation bars | Activation bars are placed on the lifeline. It used to indicate that an object is active during the interaction between two objects. |
| Asynchronous message | An asynchronous message is used when the message caller does not wait for the receiver to process the message and return before sending other message to other objects with the system. |
| Option combination fragmentation | It is used to indicate the sequences that is only occurs in the certain conditions otherwise it won’t occur. It’s a “if statement” |
| Reply message | Reply message used to indicate that message receiver is done processing the message and is returning control over the messaged caller. |

# 3.4 Database design:

It is a collection of processes that facilitates the designing, developing, implementation and maintenance of the data management system. A good database is important in ensuring reliable data, elimination of data redundancy, efficient execution of queries and high performance application.

## 3.4.1 Data dictionary:

Data dictionary consists of database metadata i.e. data about the database. It records about object in the database. It consists of table name, relationships, keys and the explanation the function elements. It is important as it contain information such as details about all database tables and their representations, physical information about the tables such as where they stored and how.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Datatype | Constraints | Nullable | Description |
| Cid | Integer(10) | PK | No |  |
| email | Varchar(100) | - | Yes |  |
| fname | Varchar(50) | - | Yes |  |
| lname | Varchar(50) | - | Yes |  |
| phone | Varchar(50) | - | Yes |  |
| address | Varchar(50) | - | Yes |  |
| Password | Varchar(50) | - | Yes |  |
| pid | Integer(10) | FK | No |  |

Registration

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Datatype | Constraints | Nullable | Description |
| Pid | Integer(10) | PK | No |  |
| image | Varchar(10) | - | Yes |  |
| pname | Varchar(100) | - | Yes |  |
| details | Varchar(150) | - | Yes |  |
| price | Float |  |  |  |
| Catid | Integer(10) | FK |  |  |
| email | Varchar(100) | FK |  |  |

Product

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Datatype | Constraints | Nullable | Description |
| id | Integer(10) | PK | No |  |
| email | Varchar(100) | - | Yes |  |

Subscription

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Datatype | Constraints | Nullable | Description |
| fid | Integer | PK | No |  |
| fullname | Varchar(100) | - | Yes |  |
| email | Varchar (100) | - | Yes |  |
| subject | Varchar(100) | - | Yes |  |
| message | Varchar (100) | - | yes |  |

message

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Datatype | Constraints | Nullable | Description |
| Oid |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

## 3.4.2 Entity relationship diagram

An entity relationship diagram shows relationships entity sets stored in the database. Its defines the entities, their attributes and showing the relationship between them.

# Architectural modelling

# 3.6 prototyping

A prototype is a basic working sample, model, mock-up or just an imitation of the actual product based on which the others forms are developed. Motive behind prototyping is to validate the design of the actual product. It may also have called as it is first step of transforming the virtual or conceptualized design into the real physical form.