

# INTRODUCTION

## **1.0 INTRODUCTION**

The Project “**ONLINE PAYMENT PORTAL**” gives us the information about all the mobile service providers. This application provides us the complete information in a service provider wise. It contains 3 major modules that are Admin, User and Visitor. Admin module contains all the details of the users like when it was created and what all the transactions done by the user, detailed information of the user can be accessed or can be manipulated by the administrator. User module consists of how to create the user and how to access the service provider and any time he can have the complete information of his account, when he had updated his balance and how the balance has been utilized that can be viewed in the form of reports. Visitor is the module where he can visit the proposed system and can have the complete information of all the service providers.

## **1.1 ABOUT ORGANIZATION**

M.ES College, Nedumkandam, managed by Muslim Educational Society (Regd) Kozhikode, was started in 1982. The College is affiliated to Mahatma Gandhi University, Kottayam. Now the College has 7 graduate courses and 6 Post graduate courses.

The College being the only committed center of higher education in the area, serves the educational needs of generations. The College is situated in an ideal pleasant and calm location surrounded by cardamom and pepper plantations at Thazhakandam near Vattapara in Pampadumpara Panchayat of Udumbanchola Taluk in Idukki District.

The College is an eminent center playing a key role in the development of higher education.

## **1.2 DEFINITION OF THE PROBLEM**

With advancement in technology, things around us have changed drastically. Technology caters to man's comfort and convenience. With the help of your smartphone, you can do everything. Be it ordering food or groceries, booking a cab or movie tickets, etc.

With the introduction of Mobile Wallet, it has become extremely convenient for a person to make cashless transactions. And although a number of companies have cropped up in India, offering consumers this product called 'mobile wallet', there is still a lack of awareness among people about the concept and its utility.

**What is a mobile wallet:** Mobile wallet is the digital equivalent to the physical wallet in which we carry money. It is an online platform which allows a user to keep money in it, just like a bank account.

A user needs to make an account with a mobile wallet provider. After which money is added to the 'mobile wallet' account using a debit, credit, online transaction from bank account or via cash (a recharge kiosk).

The main difference between a mobile wallet and online transactions via bank account is that, unlike banks mobile wallet does not charge any amount of money on every transaction and saves the customer from the hassle of entering card details and pin number for each and every transaction. It is easy and convenient as the user just needs to sign in the account and make the payment.

Mobile Wallet target audience is mainly young tech savvy people. It could be an existing banking customer or an aspirational rural consumer who wants to transact digitally. Mobile wallet will play a significant role in day to day life as an increase in use of smartphone can be seen and people are relying on digital lifestyle to make things convenient and fast

Some of the mobile wallet providers are Paytm, Citrus, Oxigen, Freecharge, Mobikwik, Zaakpay, ItzCash etc.

# SYSTEM ANALYSIS

## **2.0 SYSTEM ANALYSIS**

### **2.1 PRINCIPLES OF SYSTEM ANALYSIS:**

System Analysis is the process of gathering and interpreting facts, diagnosing the problems and using the information to recommend improvement on the system. It is a problem solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of any system development process. The system is studied to the minutest detail and analyzed. The system analyst plays the role of the interrogator and dwells deep into the working of the present system. The system is viewed as a whole and the input to the system are identified. The outputs from the organizations are traced to the various processes. System analysis is concerned with becoming aware of the problem, identifying the relevant and decisional variables, analyzing and synthesizing the various factors and determining an optimal or at least a satisfactory solution or program of action.

A detailed study of the process must be made by various techniques like interviews, questionnaires etc. The data collected by these sources must be scrutinized to arrive to a conclusion. The conclusion is an understanding of how the system functions. This system is called the existing system. Now the existing system is subjected to close study and problem areas are identified. The designer now functions as a problem solver and tries to sort out the difficulties that the enterprise faces. The solutions are given as proposals. The proposal is then weighed with the existing system analytically and the best one is selected. The proposal is presented to the user for an endorsement by the user. The proposal is reviewed on user request and suitable changes are made. This is loop that ends as soon as the user is satisfied with proposal.

Preliminary study is the process of gathering and interpreting facts, using the information for further studies on the system. Preliminary study is problem solving activity that requires intensive communication between the system users and system developers. It does various feasibility studies. In these studies a rough figure

of the system activities can be obtained, from which the decision about the strategies to be followed for effective system study and analysis can be taken.

## **2.2 EXISTING SYSTEM**

In the current scenario, the importance of online payments and transactions have reached the heights. As of now e-payment gateways are gaining popularity very much. This has become a competition among e-commercial giants like paytm, mobikwik, freecharge etc. these are some of the best and most popular online payment portals in India. These providers are very well advanced with highly capable servers, highly secure and has a very large customer base. Online payment portals are getting more and more trusted and used all classes of people. The application that we're developing is a similar one to that are currently in the market.

## **2.3 PROPOSED SYSTEM**

The development of this new system contains the following activities, which try to automate the entire process keeping in the view of database integration approach. User Friendliness is provided in the application with various controls provided by system Rich User Interface.

- Φ Provides secure registration and profile management of all users.
- Φ The system provides online recharge facility for all network users at one point.
- Φ It can be accessed over the Intranet.
- Φ In this system user is able to pay bills of mobile, DTH, electricity and other basic services.
- Φ The users information files can be stored in centralized database which can be maintained by the system.
- Φ This can give the good security for employee information because data is not in client machine.
- Φ Authentication is provided for this application.
- Φ For users of Mobile Payment System, advantages primarily concern access, time, and factors compared to those incurred from attending as manual.
- Φ for the flexibility of usage, the interface has been developed with a graphics concept in mind, associated through a browser interface
- Φ users to make online registration, view his profile and update his profile and access various payment facilities

### **2.3.1 ADVANTAGES OF THE PROPOSED SYSTEM**

The main Advantages of the proposed system can be enumerated as follows:

- Φ This is useful for customer to recharge mobile from anywhere and anytime.
- Φ Easy to get information as per requirement.
- Φ More user friendly since .net is a easy language.



- Φ Maintain history of past as well as present recharges
- Φ Reduces paperwork.
- Φ Very easy to maintain data and information about data.

### **2.3.2 OBJECTIVES OF THE PROPOSED SYSTEM**

This project is my effort for Online Mobile Recharge of mobile. This project useful for online recharging of mobile. This System provides recharge of many mobile companies as well as all kind of recharge are possible. This System will provide facility for customer to recharge mobile at anytime from anywhere. This System keeps the history of the past recharges. The user have to register himself.

# **FEASIBILITY STUDY**

### 3.0 FEASIBILITY STUDY

During System Analysis, the feasibility of the proposed system was studied carried to identify the potential benefits of developing the proposed system. The study also helped to uncover problems and limitations of the system. An important outcome of the preliminary investigation determining whether the system required is feasible.

Feasibility study is a test of system proposal according to its workability, impact on organization, ability to meet user needs and effective use of resources. The objective of feasibility study is to acquire a sense of scope of the problem. The primary purpose of a project study is to provide with quantitative and/or qualitative information on the difference the project made at the scientific and community levels. Quantitative information is important as it gives an indication of the extent of the difference the project has made; qualitative information adds depth to the quantitative data by explaining why or why not the project results have been implemented. During the study the problem definition is crystallized, as aspects of the problems to be included in the system are determined.

System feasibility is a test or evaluation of the complete system plan. Such an evaluation is necessary to define the application area along with its extends and complexity, to provide the scope of computerization together with suggested output and input format and potential benefits. The system study has to examine whether a technically feasible solution is possible.

During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are:

- Φ Economic Feasibility
- Φ Technical Feasibility
- Φ Behavioral Feasibility

### **3.1.1 ECONOMIC FEASIBILITY**

Economic analysis is the most frequently used method for evaluating the effectiveness of a system, and is commonly known as Cost/Benefit Analysis. The procedure made to determine the benefits and savings that are expected from a system and compare them with costs. The result of comparison is found out and changed if needed. This is an on-going effort that improves the accuracy at each phase of the system life cycle. If benefits outweigh costs, then decision is made to decide and implement the system.

The following are some of the important financial questions asked during preliminary investigation:

- Φ The costs conduct a full system investigation.
- Φ The cost of the hardware and software.
- Φ The benefits in the form of reduced costs or fewer costly errors.

Since the system is developed as part of project work, there is no manual cost to spend for the proposed system. Also all the resources are already available, it give an indication of the system is economically possible for development.

### **3.1.2 TECHNICAL FEASIBILITY**

The system must be evaluated from the technical point of view first. The assessment of this feasibility must be based on an outline design of the system requirement in the terms of input, output, programs and procedures. Having identified an outline system, the investigation must go on to suggest the type of equipment, required method developing the system, of running the system once it has been designed.

Technical issues raised during the investigation are:

- Φ Does the existing technology sufficient for the suggested one?
- Φ Can the system expand if developed?

The project should be developed such that the necessary functions and performance are achieved within the constraints. Through the technology may become obsolete after some period of time, due to the fact that newer version of same software supports older versions, the system may still be used. So there are minimal constraints involved with this project. The system has been developed using ASP.NET in front end and SQL server in back end, the project is technically feasible for development.

### **3.1.3 BEHAVIORAL / OPERATIONAL FEASIBILITY**

Operational feasibility is concerned with the working of the system after its installation. The company has a good record of development, installation and maintenance of systems for its clients. So this system can be installed in the client environment and the company will help in maintenance of the system in future.

This analysis involves how it will work when the system runs in the environment in which it is implemented. The new proposed system is made with user friendly interfaces that the user can easily understand and use. The new system is very user friendly and the operational cost is bearable. The maintenance and working of the new system need less human effort.

## **3.2 SYSTEM SPECIFICATION**

### **3.2.1. HARDWARE SPECIFICATION**

The selection of hardware is very important in the existence and proper working of any application. As the proposed system is a web application it can run in any system that runs a web browser.

#### **BASIC REQUIREMENTS:**

Processor: Intel® Celeron® CPU 1005M @ 1.90GHz 1.90 GHz

RAM: 2.00GB

Hard disk: 40 GB

### **3.2.2 SOFTWARE DESCRIPTION**

Front End: ASP.NET

Backend: SQL Server 2008

Client on PC: Any Operating System that support web access.

Technologies used: JS, HTML5, AJAX, JQuery

### **3.2.3. FRONTEND DESCRIPTION**

Microsoft Visual Studio is an integrated development environment (IDE) from Microsoft. It is used to develop console and graphical user interface applications along with Windows Forms applications, web sites, web applications, and web services in both native code together with managed code for all platforms supported by Microsoft Windows, Windows Mobile, Windows CE,.NET Framework, .NET Compact Framework and Microsoft Silver light.

Visual Studio supports different programming languages by means of language services, which allow the code editor and debugger to support (to varying degrees) nearly any programming language, provided a language-specific service exists. Built-in languages include C/C++ (via Visual C ++), VB.NET (via Visual Basic .NET), C# (via Visual C#), and F# (as of Visual Studio 2010).

### 3.2.4 OVERVIEW OF THE LANGUAGE USED

#### ASP.NET

.NET is an object-oriented programming (OOP) model introduced to help developers create Internet-based distributed systems. It provides a platform-independent framework that enables developers to quickly build, deploy, and manage Web-based applications, smart client applications, and XML Web services application. The platform-independence feature enables businesses to quickly integrate their systems, information, and devices, thereby helping users collaborate and communicate effectively

ASP .NET is a server side scripting technology that enables scripts (embedded in web pages) to be executed by an Internet server. ASP.NET is a unified Web development model that includes the services necessary for us to build enterprise-class Web applications with a minimum of coding. ASP.NET is part of the .NET Framework, and when coding ASP.NET applications we have access to classes in the .NET Framework. You can code our applications in any language compatible with the common language runtime (CLR), including Microsoft Visual Basic and C#. These languages enable us to develop ASP.NET applications that benefit from the common language runtime, type safety, inheritance, and so on.

#### WORKING OF ASP.NET:

1. When a browser requests an HTML file, the server returns the file
2. When a browser requests an ASP.NET file, IIS passes the request to the ASP.NET engine on the server
3. The ASP.NET engine reads the file, line by line, and executes the scripts in the file
4. Finally, the ASP.NET file is returned to the browser as plain HTML.

#### ASP.NET FILE

- Φ An ASP.NET file can contain HTML, XML, and scripts
- Φ Scripts in an ASP.NET file are executed on the server
- Φ An ASP.NET file has the file extension ".aspx"

**COMPARISON OF ASP.NET WITH OTHER PROGRAMMING LANGUAGES:** ASP.NET framework also provides big number of built-in classes. However, PHP provides limited built-in classes. PHP application development is mostly done in Dreamweaver. Dreamweaver application development environment provides limited functionalities and features. ASP.NET application also provides better error trace than PHP application. Thus, application development is easier and faster using ASP.NET than PHP. Some of the main features of ASP.NET are:

Φ **MULTIPLE LANGUAGE SUPPORT**

ASP.NET supports multiple programming languages for web application development. Applications using ASP.NET can be developed using over 20 languages. Microsoft has the compilers for Visual Basic, MS Visual C#, MS Visual C++, and MS Jscript. .NET compilers for COBOL, Pascal, Perl and Smalltalk, among others, can also be used to develop the Web application. For example, a programmer may write code for one module in Visual Basic.NET and code for another module in Jscript and Visual C#.

Φ **CODE IS COMPILED**

One of the most important features of ASP.NET is that the code is compiled. Code compilation means that the programmatic instructions are converted to the machine language. In ASP.NET, however, code is not compiled to the machine language directly. It is compiled to an intermediate language called Microsoft Intermediate Language (MSIL or IL). This code is further compiled to machine language by the JIT compiler (just-in-time compiler). The JIT compiler compiles each portion of code as it is called, instead of compiling the complete application at one shot. Due to this, application start-up time is less. The compiled code is stored till the application exits and hence does not have to be recompiled each time the compiled portion of the code gets called. The compilation of code greatly improves Web applications performance.

Φ **CLASSES AND NAMESPACES**

ASP.NET is an object oriented technology and includes a collection of useful classes and namespaces. For example, the Classes HtmlTextBox, HtmlLabel and HtmlForm are included within the System.Web.UI.HtmlControlsNamespace.



### Φ **SERVER CONTROLS**

A set of server controls is provided in ASP.NET. These controls provide various properties, methods and events for simplifying the making of powerful web applications

### **HTML**

HTML, which stands for Hyper Text Markup Language, is the predominant markup language for web pages. HTML is the basic building-blocks of web pages. A markup language is a set of markup tags, and HTML uses markup tags to describe web pages. The purpose of a web browser is to read HTML documents and compose them into visual or audible web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page.

HTML elements form the building blocks of all websites. HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. It can embed scripts in languages such as JavaScript which affect the behavior of HTML web pages. Web browsers can also refer to Cascading Style Sheets (CSS) to define the appearance and layout of text and other material. The W3C, maintainer of both the HTML and the CSS standards, encourages the use of CSS over explicitly presentational HTML markup.

### **3.2.5 OVERVIEW OF THE DATABASE USED**

**MICROSOFT SQL SERVER** is a relational database management system developed by Microsoft. As a database, it is a software product whose primary function is to store and retrieve data as requested by other software applications, be it those on the same computer or those running on another computer across a network (including the Internet). There are at least a dozen different editions of Microsoft SQL Server aimed at different audiences and for different workloads (ranging from small applications that store and retrieve data on the same computer, to millions

of users and computers that access huge amounts of data from the Internet at the same time).

SQL Server 2008 (formerly codenamed "Katmai") was released on August 6, 2008 and aims to make data management self-tuning, self-organizing, and self-maintaining with the development of SQL Server Always On technologies, to provide near-zero downtime.

SQL Server 2008 also include support for structured and semi-structured data, including digital media formats for pictures, audio, video and other multimedia data. In current versions, such multimedia data can be stored as BLOBs (binary large objects), but they are generic bit streams. Intrinsic awareness of multimedia data will allow specialized functions to be performed on them. SQL Server 2008 can be a data storage backend for different varieties of data: XML, email, time/calendar, file, document, spatial, etc as well as perform search, query, analysis, sharing, and synchronization across all data types. SQL Server 2008 also natively supports hierarchical data, and includes T-SQL constructs to directly deal with them, without using recursive queries. SQL Server 2008 R2 adds certain features to SQL Server 2008 including a master data management system branded as Master Data Services, a central management of master data entities and hierarchies. Also Multi Server Management, a centralized console to manage multiple SQL Server 2008 instances and services including relational databases, Reporting Services, Analysis Services & Integration Services.

Microsoft SQL Server 2008 is a set of components that work together to meet the data storage and analysis needs of the largest Web sites and enterprise data processing systems. SQL Server is a relational database management system for distributed Client-Server computing. Like all other database management systems, it provides the following features:

#### **FEATURES**

- Φ A variety of user interfaces
- Φ Physical data independence
- Φ Logical data independence
- Φ Query optimization

- Φ Data integrity
- Φ Concurrency control
- Φ Backup and recovery
- Φ Security and authorization

### **QUERY ANALYZER**

Query Analyzer is another tool with SQL server, which extends the capabilities of ANSI standard SQL. It is an application that recognizes and executes SQL commands and specialized T\_SQL commands that can be used to create database objects using SQL commands. We can use query analyzer commands to

- ☐ Enter, Edit, Store, and Retrieve and Run SQL commands
- ☐ Format, perform calculations on, store, and print query results.
- ☐ List column definitions for any table.
- ☐ Access any copy of data between SQL databases.
- ☐ We can create tables and insert data or alter it or we can delete data using SQL commands.

### **FEATURES OF SQL SERVER**

#### **Φ INTERNET INTEGRATION**

The SQL Server 2008 database engine includes integrated XM support. It has the scalability, availability, and security features required to operate as the data storage component of the largest Web sites.

#### **Φ SCALABILITY AND AVAILABILITY**

The same database engine can be used across platforms ranging from laptop computers running Microsoft Windows 98 through large, multiprocessor servers running Microsoft Windows 2005 Data Center Edition. SQL Server 2008 Enterprise Edition supports features such as federated servers, indexed views, and large memory support that allow it to scale to the performance levels required by the largest Web sites.

#### **Φ ENTERPRISE-LEVEL DATABASE FEATURES**

The SQL Server 2008 relational database engine supports the features required to support demanding data processing environments. The database engine protects data integrity while minimizing the overhead of managing thousands of users concurrently modifying the database.

#### Φ **EASE OF INSTALLATION, DEPLOYMENT, AND USE**

SQL Server 2008 includes a set of administrative and development tools that improve upon the process of installing, deploying, managing and using SQL Server across several sites. SQL Server 2008 also supports a standards-based programming model integrated with the Windows DNA, making the use of SQL Server databases and data warehouses a seamless part of building powerful and scalable systems.

#### Φ **DATA WAREHOUSING**

SQL Server 2008 includes tools for extracting and analyzing summary data for online analytical processing. SQL Server also includes tools for visually designing databases and analyzing data using English-based questions.

### **ADVANTAGES OF SQL SERVER 2008 AS A DATABASE SERVER**

Microsoft SQL Server 2008 is capable of supplying the database services needed by extremely large systems. Large servers may have thousands of users connected to an instance of SQL Server 2008 at the same time. SQL Server 2008 has full protection for these environments, with safeguards that prevent problems, such as having multiple users trying to update the same piece of data at the same time. SQL Server 2008 also allocates the available resources effectively, such as memory, network bandwidth, and disk I/O, among the multiple users. Extremely large Internet sites can partition their data across multiple servers, spreading the processing load across many computers, and allowing the site to serve thousands of concurrent users. Multiple instances of SQL Server 2008 can be run on a single computer.

# **SYSTEM DESIGN**

## **4.0 SYSTEM DESIGN**

The design document that we will develop during this phase is the blueprint of the software. It describes how the solution to the customer problem is to be built. Since solution to complex problems isn't usually found in the first try, iterations are most likely required. This is true for software design as well. For this reason, any design strategy, design method, or design language must be flexible and must easily accommodate changes due to iterations in the design. Any technique or design needs to support and guide the partitioning process in such a way that the resulting sub-problems are as independent as possible from each other and can be combined easily for the solution to the overall problem.

The design of a system is essentially a blueprint or a plan for a solution for the system. The design activity begins when the requirements document for the software to be developed is available. Design is essentially the bridge between requirements specification and the final solution for satisfying the requirements.

The design process for software systems, often, has two levels. At the first level, the focus is on deciding which modules are needed for the system, the specifications of these modules, and how the modules should be interconnected. This is what is called the system design or top-level design. In the second level, the internal design of the modules, or how the specifications of the module can be satisfied, is decided. This design level is often called detailed design or logic design. Detailed design essentially expands the system design to contain a more detailed description of the processing logic and data structures so that the design is sufficiently complete for coding. Because the detailed design is an extension of system design, the system design controls the major structural characteristics of the system. The system design has a major impact on the testability and modifiability of a system, and it impacts its efficiency. Much of the design effort for designing software is spent creating the system design.

## **4.1 MODULE DESIGN**

### **NUMBER OF MODULES**

The system after careful analysis has been identified to be presented with the following modules:

- Φ Administrator
- Φ Customer
- Φ Web Registration

### **ADMINISTRATOR**

- Φ Administrator is treated as a super user in this system. He can have all the privileges to do anything in this system.
- Φ Should able to add new operators and service providers to the system. Should able to add or update the different offers provided by the Vendors which can be used by the customers through internet.
- Φ Should able to receive the Complaint from Customers for the transaction related issues.

### **CUSTOMERS**

- Φ Should able to register to the site to get pay the Mobile bill online.
- Φ Should able to Recharge/pay with or without using the offers provided by the vendors
- Φ Should able to register Complaint against the issues in Recharge or Mobile Online payments.
- Φ Should able to check the previous payment details as History.

### **Web Registration**

- Φ Every User need to submit his complete details in the form of registration. Whenever a User registration completed automatically he/she can get a user id and password.

- Φ every user must enter into the system through login page. The login page will restrict the Unauthorized users.
- Φ Whenever a user enters his user id and password, it checks in the database for user existence. If the user is existing, he can be treated as a valid user. Otherwise the request will throw back.

### **INPUTS AND OUTPUTS**

The major inputs and outputs and major functions of the system are follows:

#### **Inputs:**

- Φ Admin enter his user id and password for login
- Φ Admin Add the new service provider Details into the System.
- Φ Admin add the offers provided by the vendors in to the system.
- Φ New user gives his completed personnel, address and phone details for registration.
- Φ He can register Complaint against the issues in Recharge or Mobile Online payments

#### **Outputs:**

- Φ Admin can get all the vendor details.
- Φ Customers can get their previous payment details.
- Φ Customers can get their profile to update.
- Φ Admin receives the complaints from customers.



## **4.2 DATA FLOW DIAGRAM**

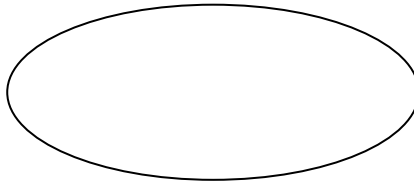
A Data Flow Diagram (DFD) is a diagram that describes the flow of data and the processes that change data throughout a system. It's a structured analysis and design tool that can be used for flowcharting in place of or in association with information. Oriented and process oriented system flowcharts. When analysts prepare the Data Flow Diagram, they specify the user needs at a level of detail that virtually determines the information flow into and out of the system and the required data resources. This network is constructed by using a set of symbols that do not imply physical implementations. The Data Flow Diagram reviews the current physical system, prepares input and output specification, specifies the implementation plan etc. Throughout the project, the context flow diagrams, data flow diagrams and flow charts have been extensively used to achieve the successful design of the system.

The data flow diagrams were first developed by Larry Constantine as way for expressing system requirements in graphical form. A data flow diagram also known as "bubble chart" has the purpose of clarifying system requirements and identifying major transformations that will become programs in system design. It functionally decomposes the requirement specification down to the lowest level. DFD depicts the information flow, the transformation flow and the transformations that are applied as data move from input to output. Thus DFD describes what data flows rather than how they are processed.

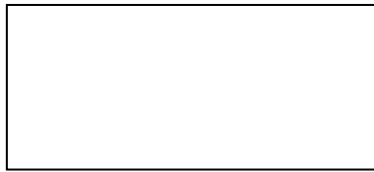
Data Flow Diagram is quite effective, especially when the required design is unclear and the user and analyst need a notational language for communication. It is one of the most important tools used during system analysis. It is used to model the system components such as the system process, the data used by the process, any external entities that interact with the system and information flows in the system. Four basic symbols are used to construct data flow diagrams. They are symbols that represent data source, data flows, and data transformations and data storage. The points at which data are transformed are represented by enclosed figures, usually circles, which are called nodes.

**MAIN SYMBOLS USED IN THE DATA FLOW DIAGRAM ARE:**

- Φ Circle represents a process that transforms incoming data flows in to outgoing data flows.



- Φ A square defines a source and destination of system data.



- Φ Arrow identifies data in motion.



- Φ An open rectangle defines a data store, data at rest or temporary repository of data.



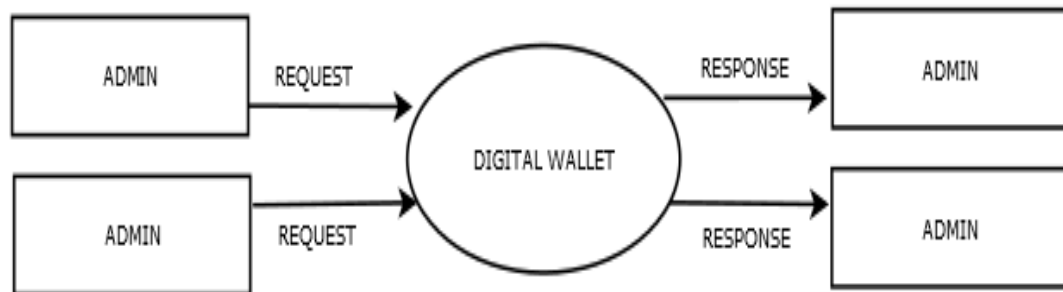
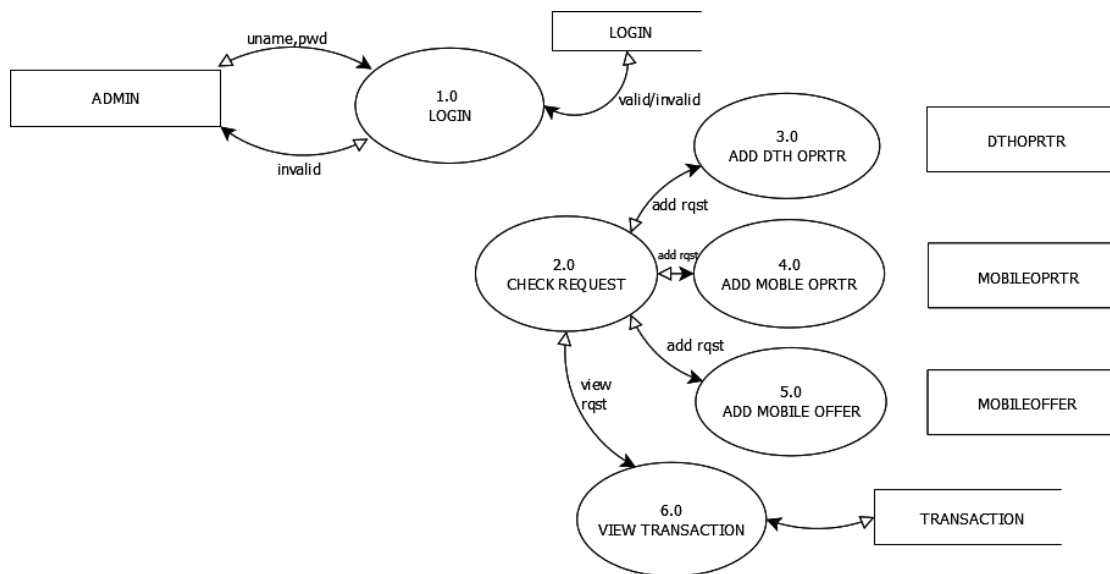
**STEPS TO CONSTRUCT DATA FLOW DIAGRAMS:-**

Four steps are commonly used to construct a DFD

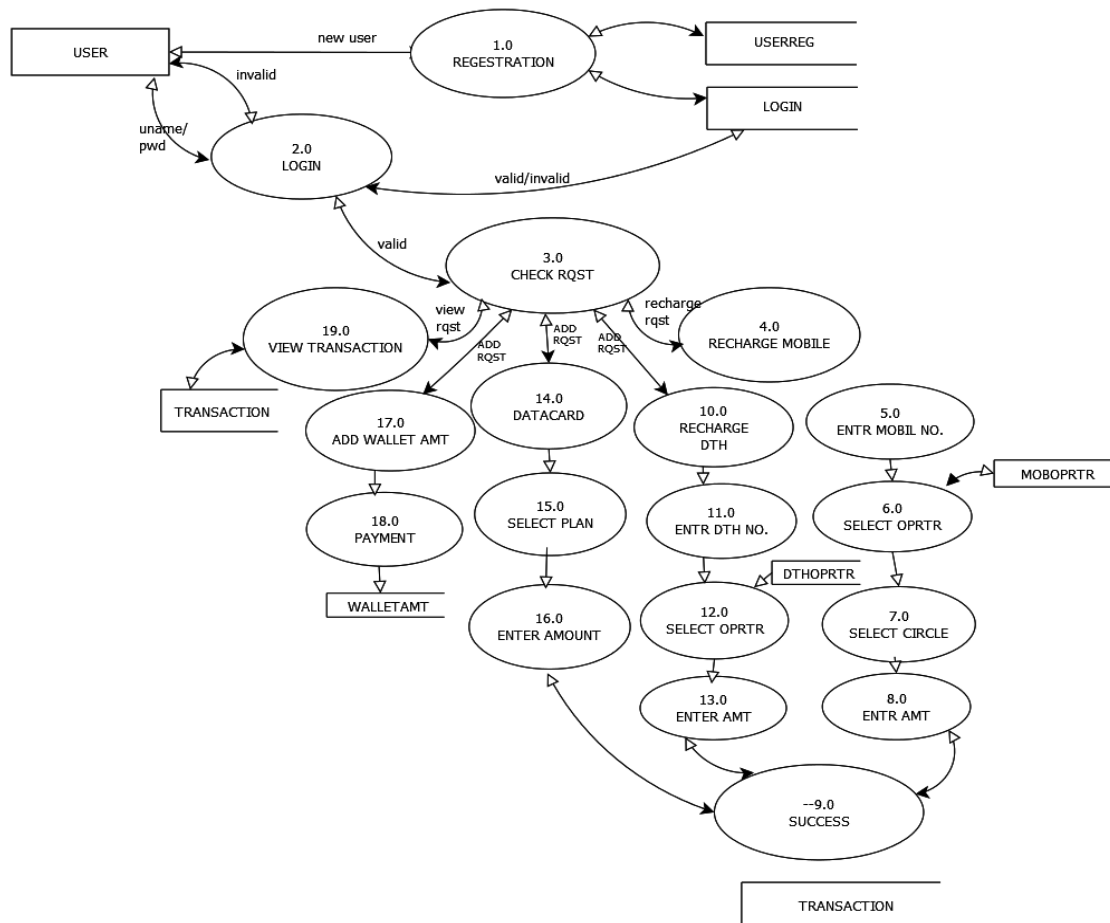
- Φ Process should be named and numbered for easy reference. Each name should be representative of the process.
- Φ The destination of flow is from top to bottom and from left to right.
- Φ When a process is exploded in to lower level details they are numbered.
- Φ The names of data stores, sources and destinations are written in capital letters.

**RULES FOR CONSTRUCTING A DATA FLOW DIAGRAM**

- Φ Arrows should not cross each other.
- Φ Squares, circles and files must bear names.
- Φ Decomposed data flow squares and circles can have same names.
- Φ Draw all data flow around the outside of the diagram.

**CONTEXT DIAGRAM/ZERO TH LEVEL DFD****Level 1 DFD: Admin**

## Level 1 DFD: User



## **4.3 USER INTERFACE DESIGN**

### **4.3.1 INPUT DESIGN**

The input to the design phase is the specifications for the system to be designed. Hence, reasonable entry criteria can be that the specifications are stable and have been approved, hoping that the approval mechanism will ensure that the specifications are complete, consistent, unambiguous, etc. The output of the top-level design phase is the architectural design or the system design for the software system to be built. This can be produced with or without using a design methodology. A reasonable exit criteria for the phase could be that the design has been verified against the input specifications and has been evaluated and approved for quality.

A design can be object-oriented or function-oriented. In function-oriented design, the design consists of module definitions, with each module supporting a functional abstraction. In object-oriented design, the modules in the design represent data abstraction.

### **4.3.2 OUTPUT DESIGN**

Output Design of the computer is the most important and direct with the system. The output design phase of the system design is concerned with the conveyance of information to the end users in a user-friendly manner. The output design should be efficient, intelligible so that the systems relationship with the end user is improved and thereby enhancing the process of decision making.

The output design is an ongoing activity almost from the beginning of the project, and follows the principles of form design. Efficient and well-defined output design improves the relation of the system and the user, thus facilitating decision making. The primary considerations in the design of the output are the requirement of the information and the objectives of the end users

## **4.4 DATABASE DESIGN**

Database Design is an important activity in design. The efficiency of the system lies in the efficiency of the database. The database design consists of predetermining number of tables that are to be used and fields that are to be used in each table. The efficiency of the system to retrieve the appropriate data depends on how the fields are specified and the coding mostly depends on format of the database. A database is a collection of interrelated data stored with a minimum of redundancy to serve many applications. In a database environment, common data are available and used by several users. Instead of each program or user managing its own data, authorized users share data across applications with the database software managing the data as entity. Database design is one of the important parts in developing software. It is the model of developing conceptual data. The primary objective are fast response time to enquiries, more information at low cost, control: of redundancy, clarity and ease of use, data and program independency, accuracy and integrity of system, fast recovery, privacy and security of information and availability of powerful and user language. In database environment, many users share the data available that is authorize users share data across application with the database software managing the data as entity. A database and this information as an interrelated data shared with the minimum redundancy to serve many users quickly and efficiently. The general objectives are to make information access easy, quick, inexpensive and flexible for the user. During database designs major issues are considered are,

### **Φ Redundancy**

Data redundancy is a condition created within a database or data storage technology in which the same piece of data is held in two separate places. A positive type of data redundancy works to safeguard data and promote consistency. Many developers consider it acceptable for data to be stored in multiple places. The key is to have a central, master field or space for this data, so that there is a way to update all of the places where data is redundant through one central access point. Otherwise, data redundancy can lead to big problems with

data inconsistency, where one update does not automatically update another field. As a result, pieces of data that are supposed to be identical end up having different values.

#### Φ **Data independence**

Data independence is the idea that generated and stored data should be kept separate from applications that use the data for computing and presentation. In many systems, data independence is an innate function related to the multiple components of the system; however, it is possible to keep data contained within a use application.

#### Φ **Accurate and integrity**

integrity also known as the CIA triad, is a model designed to guide policies for information security within an organization. The model is also sometimes referred to as the AIC triad (availability, integrity and confidentiality) to avoid confusion with the Central Intelligence Agency. The elements of the triad are considered the three most crucial components of security. Integrity involves maintaining the consistency, accuracy, and trustworthiness of data over its entire life cycle. Data must not be changed in transit, and steps must be taken to ensure that data cannot be altered by unauthorized people (for example, in a breach of confidentiality). These measures include file permissions and user access controls. Version control maybe used to prevent erroneous changes or accidental deletion by authorized users becoming a problem. In addition, some means must be in place to detect any changes in data that might occur as a result of non-human-caused events such as an electromagnetic pulse (EMP) or server crash. Some data might include checksums, even cryptographic checksums, for verification of integrity. Backups or redundancies must be available to restore the affected data to its correct state.

#### Φ **More information at low cost**

A pricing strategy in which a company offers is relatively low price to stimulate demand and gain market share. It is one of three generic marketing strategies (see differentiation strategy and focus strategy for the other two) that can be adopted by any company, and is usually employed where the product has few or no competitive advantage or where economies of scale are achievable with higher production volumes. Also called low price strategy.



For designing a table the analyst must decide the fields of the tables, type of fields, the field length, default values etc. For this the quantity and the relationship must be identified, second their attributes must be specified. This method of organizing the data into table is known as Normalization. The structure can be refined through normalization process that groups data in simplest way possible so that later changes can be made with ease. Normalization is design to simplify relationship and establish logical links between files without losing information.

In other words, normalization implies splitting the tables in to two or more table with fewer columns. Most designing tries to reach 3NF and a few 4NF, but not too many reach 5NF. Database Normalization is a technique of organizing the data in the database. Normalization is a systematic approach of decomposing tables to eliminate data redundancy and undesirable characteristics like Insertion, Update and Deletion Anomalies. It is a multi-step process that puts data into tabular form by removing duplicated data from the relation tables.

Normalization is used for mainly two purpose,

- Φ Eliminating redundant (useless) data.
- Φ Ensuring data dependencies make sense i.e. data is logically stored.

The normalization rules are,

### **First Normal Form**

The first Normal form states that the domain of an attribute must include only atomic values and that the values of any attribute in a tuple must be a single value form a domain of that attribute in other words 1NF disallows “relation within relation” Or “relation as attribute values with in tuple”. The only attribute values permitted by 1NF are single atomic or individual values. The relation is said to be in 1NF if and only if it satisfies the constraints that contains the primary key only.

### **Second Normal Form**

The relations is said to be 2NF if and only if its satisfies all the first normal form conditions for the primary key and every non primary key attributes of the relation is fully dependents on its primary key alone. According to second normal form, for relations where primary key contains multiple attributes, no non-key attribute should be functionally depends on a part of the primary key.

**Third Normal Form**

According to 3NF, relation should not have a non-key attribute functionally determined by another non key attribute or by a set of non-key attribute. A relation is said to be in 3NF if and only if it is in 2NF and more and more over the non-key attributes of the relation should not be depends on other non-key attribute. In this project the database used is MySQL. To avoid redundancy of data and easier manipulation of the tables are normalized so as it can efficiently use.

**Key**

The key is uniquely identified a row in a table. These are two types of keys primary key and foreign key. A primary key is an element or combination of elements in a table. A foreign key is a column that uniquely identifies a record from different data: the foreign keys are used to store another table primary key describe the relationship from different table relationship.

There are three types.

- Φ One to One
- Φ One to Many
- Φ Many to Many

**4.5 TABLE DESIGN**

The most important aspect of building an application is the design of tables or the database schema. The data stored in the tables must be organized in some manner, which is meaningful. The overall objective in the process of table design has been to treat data as an organizational resource and as an integrated whole. The organization of data in a database aims to achieve three major objectives, which are given below:

- Φ Data integrity
- Φ Data independence

Several degrees of normalization have to be applied during the process of table design. The major aim of the process normalization is to reduce data redundancy and prevent losing data integrity. Redundancy refers to unwanted and unnecessary repetition of data. Data integrity has to be converted at all levels. Poor

normalization can cause problems related to storage and retrieval of data. During the process of normalization, dependencies can be identified which cause serious problems during deletion and updating, normalizing also helps in simplifying the structure of tables.

## **TABLES:-**

### **Debit card**

NAME	DATATYPE	ALLOW NULLS
Card_no ¶	Varchar(50)	yes
Holder_name	Varchar(50)	Yes
Cvv	int	Yes
Balanve	Bigint	Yes
pwd	Varchar(50)	yes

### **Dth operator**

NAME	DATATYPE	ALLOW NULL
Dthoprtr ¶	Varchar(50)	no
website	Varchar(50)	Yes

### **Login**

NAME	DATATYPE	ALLOW NULL
Uname ¶	Varchar(50)	No
Pwd	Varchar(50)	No
utype	Varchar(50)	no

**Moboffer**

NAME	DATATYPE	ALLOW NULL
Oprtr ¶	Varchar(50)	no
Amt	int	No
Type	Varchar(50)	Yes
Validity	Varchar(50)	Yes
description	Varchar(50)	Yes

**moboprtr**

NAME	DATATYPE	ALLOW NULL
Oprtrname ¶	Varchar(50)	No
Circle	Varchar(50)	yes

**Userdata**

NAME	DATATYPE	ALLOW NULL
mob ¶	int	no
email	Varchar(50)	No
name	Varchar(50)	no
Occupation	Varchar(50)	yes
walletblnce	bigint	no

# Transaction

NAME	DATATYPE	ALLOW NULL
tid ¶	int	no
Uname	Varchar(50)	yes
Type	Varchar(50)	yes
Num	bigint	yes
Operator	Varchar(50)	yes
Amount	Numeric(18,0)	yes
Tdate	Date	yes
status	Varchar(50)	yes

# TESTING

## **5.0 TESTING**

Testing is a process to show the correctness of the program. Testing is needed to show completeness, it improve the quality of the software and to provide the maintenance aid. Some testing standards are therefore necessary reduce the testing costs and operation time. Testing software extends throughout the coding phase and it represents the ultimate review of configurations, design and coding. Based on the way the software reacts to these testing, we can decide whether the configuration that has been built is study or not. All components of an application are tested, as the failure to do so many results in a series of bugs after the software is put to use.

### **5.0.1 BLACK BOX TESTING**

Black box testing, also called behavioral testing, focuses on the functional requirements of software. This testing approach enables the software engineer to derive the input conditions that will fully exercise all requirements for a program. Black box testing attempts to find the errors like

- Φ Incorrect or missing functions
- Φ Interface errors
- Φ Errors in data structures or external database access
- Φ Behavior or performance errors
- Φ Initialization and termination errors

In Black box testing software is exercised over a full range of inputs and outputs are observed for correctness.

### **5.0.2 WHITE BOX TESTING**

White box testing is also called Glass box testing is a test case design control; structure of the procedural design to derive test cases using White box testing method, the software engineer can derive the test cases that guarantee that all independent paths within the module have been exercised at least once. Exercise all logic decisions on their true or false sides. Execute all loops at their boundaries

and within their operational bounds. Exercise internal data structure to ensure their validity.

### **5.0.3 SOFTWARE TESTING STRATEGIES**

Testing involves

- Φ Unit testing
- Φ Integration testing
- Φ System testing
- Φ Acceptance testing

The first level of test is unit testing. The purpose of unit testing is to ensure that each program is fully tested.

The second step is integration testing. In this individual program units or programs are integrated and tested as a complete system to ensure that the software requirements are met. System testing involves a series of tests to verify that all system elements have been properly integrated it also attempts to verify the software's protection mechanisms. It also tests the run time performance of a system within the context of an integrated system. It also includes stress testing in which the system is executed in a manner that demands resources in abnormal quantity, frequency or volume.

Acceptance Testing involves planning and the execution of various types of tests in order to demonstrate that the implemented software system satisfies the requirements. Finally our project meets the requirements after going through all the levels of testing.

The Main Objective of System Testing are

- Φ To ensure during operation the system will perform as per specification.
- Φ To make sure that the system meets user's requirements during operation.
- Φ To verify that the controls incorporated in the system function as intended.

Software testing is a critical element of software development process. A system development involves a series of activities where opportunities for injection of human error are enormous. Errors may begin to occur at the very inception of the process where the objectives may erroneously or imperfect specified, as well as



later design and development stages. Because of human inability to perform and communicate with perfection, software development is accompanied by a quality assurance activity.

Testing is a process to show the correctness of the program. Testing is needed to show completeness, it improve the quality of the software and to provide the maintenance aid. Some testing standards are therefore necessary reduce the testing costs and operation time. Testing software extends throughout the coding phase and it represents the ultimate review of configurations, design and coding. Based on the way the software reacts to these testing, we can decide whether the configuration that has been built is study or not. All components of an application are tested, as the failure to do so many results in a series of bugs after the software is put to use. Testing is generally done at two levels, Testing of individual modules and testing of the entire system (System testing). During system testing, the system is used experimentally to ensure that the software does not fail, i.e., that it will run according to its specifications and in the way users expect. Special test data are input for processing, and the results examined

### **TESTING OBJECTIVES**

- Φ Testing is a process of executing a program with the intent of finding an error.
- Φ A successful test is one that uncovers an as-yet undiscovered error.
- Φ A good test cast is one that has a high probability of finding an as-yet undiscovered error.

### **TESTING PRINCIPLES**

- Φ All tests should be traceable to customer requirements.
- Φ Tests should be planned ling before testing begins.
- Φ Testing should begin “in the small” and progress towards testing “in the large”
- Φ To be more effective, an independent third party should conduct testing

# IMPLEMENTATION

## **6.0 IMPLEMENTATION**

### **6.1 IMPLEMENTATION PROCEDURE**

Implementation is one of the most important tasks in project. Implementation is the phase, in which one has to be cautious, because all the efforts undertaken during this project will be fruitful only if the software is properly implemented according to the plans made.

The implementation phase is less creative than system design. It is primarily concerned with the user-training for Web site preparation and data storage. When the user links the page, the required page is fetched from the client is connected through the telecommunication network and tests of the network along with the system are also included under implementation.

Depending upon the nature of the system, extensive user training may be required. Programming system should be modified as a result of programming efforts; programming provides a reality test for the assumptions made by the analyst. System testing checks the readiness and accuracy of the system access, update and retrieve data from new files. Once the program becomes available, the test data are read into computer and processed. In most conventions parallel Run was conducted to establish the efficiency of the system.

#### **6.1.1 USER TRAINING**

A well-designed system if not operated and used properly could fail. Training the users is important, as if not done well enough could prevent the successful implementation of an information system. Through the systems development life cycle the user has been involved. By this stage the analyst should possess an accurate idea of the users they need to be trained. They must know what their roles will be, how they can use the system and what the system will do and will not do. Both system operators and users need training. During their training, they need to be given a trouble-shooting list that identifies possible problems and identifies remedies for the problem. They should be advised of the common malfunctions that may arise and how to solve them.

### **6.1.2 OPERATIONAL DOCUMENTATION**

Once the implementation plan is decided, it is essential that the user of the system is made familiar and comfortable with the environment. Education involves right atmosphere and motivating the user. A documentation providing the whole operations of the system is being developed. The system developed in such a way that the user can work with it in a well consistent way. The system is developed user friendly so that the user can work the system form the tips given in the application itself. Useful tips and guidance is given inside the application itself to help the user. Users have to be made aware that what can be achieved with the new system and how it increases the performance of the system. The user of the system should be given a general idea of the system before he uses the system

### **6.1.3 SYSTEM MAINTENANCE**

The definition of software maintenance can be given by describing four activities that are undertaken after the program is released for use.

The first maintenance activity occurs since it is unreasonable to assume that testing will uncover all errors in a large software system. The process of including the diagnosis and correction of one or more errors is called corrective maintenance. The second activity that contributes to a definition of maintenance occurs since rapid change is encountered in every aspect of computing. Therefore adaptive maintenance modifies software to properly interface with a changing environment.

The third party involves activity occurs when software is changed to improve future reliability or maintainability. This is called preventive maintenance. This project is prone to all type of maintenance activity and carried out quite well.

# **CONCLUSION AND FUTURE SCOPE**

## **7.0 CONCLUSION AND FUTURE SCOPE**

Based on current developments, it is safe to say that mobile wallets will soon be a self-reliant ubiquitous ecosystem. In the near future, mobile wallets will be used to engage with the customer by the marketers and digital businesses. With the addition of the value-added services that go beyond just payment, experts believe that mobile wallets will become a new marketing channel.

One of the best examples of this conversion is the much-talked-about app of a leading coffee chain often referred to as a mobile payment success story. It is an integrated app, where the payment feature steps back to make space for various mobile engagement activities on the platform. However, the consumer still is not allowed to manage digitised valuables such as offers, coupons, loyalty rewards, etc from multiple brands while enabling payment transactions and that is something he/she is definitely looking for. Soon, if not already, we will see mobile wallets take off significantly to pivot into a new marketing channel where the online and offline marketing efforts will be merged together. Instead of replacing merchants' own integrated apps, mobile wallets will complement them and offer more reach to engage beyond apps and loyal brand enthusiasts.

Going ahead, mobile wallets won't just be about mobile payments; they would become one of the major contributors of a seamless shopping experience for the customers. Simply offering faster and more-secure payments would no longer be good enough; the industry players will have to counter the real pain points such as giving consumers the ability to see what's on stored value cards at any moment in time, access loyalty points, or automatically receive digital copies of payment receipts.

Irrespective of the market status of these mobile wallets, marketers should take advantage of the emerging opportunities to create a borrowed presence on their customers' mobile devices. The marketers will be seen developing integrated

mobile wallet apps, wherein they could add value beyond payments. Marketing leaders must develop content they want their customers to save and manage on mobile wallets. They will benefit from mobile wallets if they tie together loyalty programmes, coupons, product discovery, gift cards and promotions to create powerful and new brand experiences in the mobile moments of their customers.

# APPENDIX



## SAMPLE CODE

### 1.DIGITAL\_WALLET.CS

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Data.SqlClient;
using System.Configuration;
using System.Data;
using System.Web.UI.WebControls;

/// <summary>
/// Summary description for digital_wallet
/// </summary>
public class digital_wallet
{
    public SqlConnection con = new SqlConnection();
    public SqlCommand cmd;
    public SqlDataReader dr;
    public SqlDataAdapter ad = new SqlDataAdapter();
    public DataTable dt = new DataTable();
    public void dbconnection()
    {
        if (con.State == ConnectionState.Open)
        {
            con.Close();
        }
        con.ConnectionString =
ConfigurationManager.ConnectionStrings["Digital_wallet_String"].ConnectionString;
        con.Open();
    }
    public void readdata(string sql)
    {
        dbconnection();
        cmd = new SqlCommand(sql, con);
        dr = cmd.ExecuteReader();
    }
    public void writedata(String sql)
    {
        dbconnection();
        cmd = new SqlCommand(sql, con);
        cmd.ExecuteNonQuery();
    }
    public void adapter(string sql)
    {
        dbconnection();
        dt.Rows.Clear();
        cmd = new SqlCommand(sql, con);
        ad.SelectCommand = cmd;
        ad.Fill(dt);
    }
    public void filldropdownlist(string text,string value,string table,string
condition,DropDownList ddllst)
    {

```

```

        if (condition == "")
        {
            string sql = "select " + text + "," + value + " from " + table;
            adapter(sql);
            if (dt.Rows.Count > 0)
            {
                dllst.DataSource = dt;
                dllst.DataTextField = text;
                dllst.DataValueField = value;
                dllst.DataBind();
            }
        }
        else
        {
            string sql = "select " + text + "," + value + " from " + table + "
where " + condition;
            adapter(sql);
            if (dt.Rows.Count > 0)
            {
                dllst.DataSource = dt;
                dllst.DataTextField = text;
                dllst.DataValueField = value;
                dllst.DataBind();
            }
        }
    }

    public void fillgrid(string Sql, GridView grd)
    {
        adapter(Sql);
        if (dt.Rows.Count > 0)
        {
            grd.DataSource = dt;
            grd.DataBind();
        }
    }

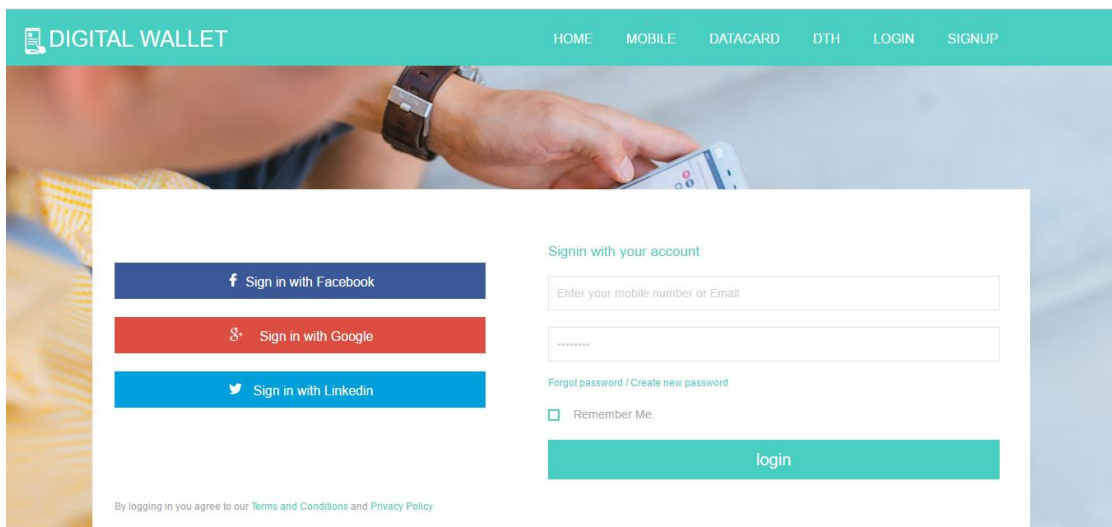
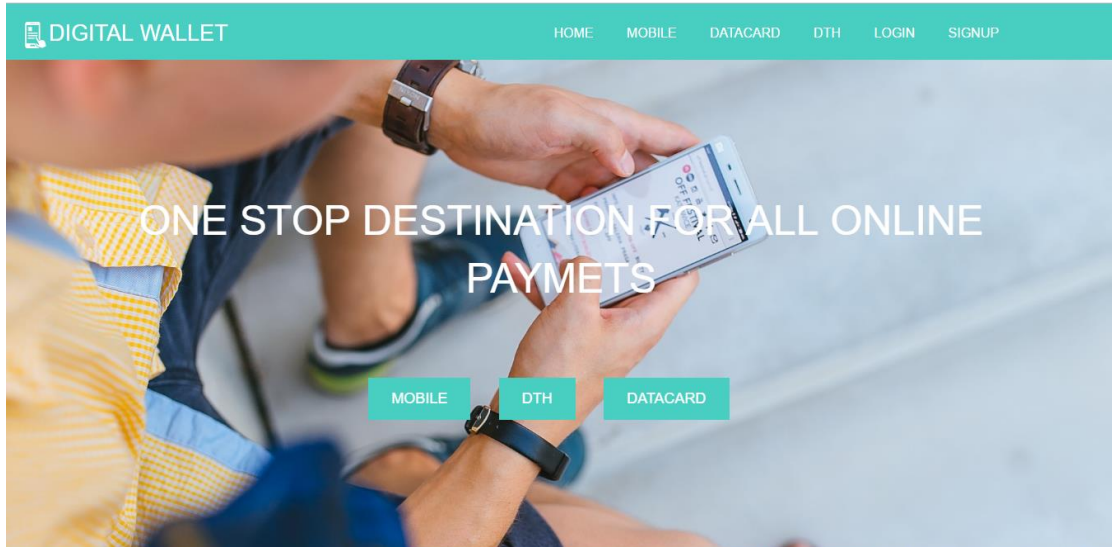
    public void filldetailsview(string sql, DetailsView dw)
    {
        adapter(sql);
        if (dt.Rows.Count > 0)
        {
            dw.DataSource = dt;
            dw.DataBind();
        }
    }

    public void filldatalist(string sql, DataList dtlst)
    {
        adapter(sql);
        if (dt.Rows.Count > 0)
        {
            dtlst.DataSource = dt;
            dtlst.DataBind();
        }
    }

    public string messagebox(string message)
    {
        string msg = "<script>alert('" + message + "')

```

## SAMPLE SCREENSHOTS



EASY RECHARGE

HOME

MOBILE

DATACARD

DTH

LOGOUT

Your Wallet Balance is Rs. **3000** /- ADD WALLET AMOUNT

Enter your mobile number

+91

Next

EASY RECHARGE

HOME

MOBILE

DATACARD

DTH

LOGOUT

Your Wallet Balance is Rs. **3000** /- ADD WALLET AMOUNT

Pay your landline bill.Which Provider?

Airtel Landline

Next