



Yogidham Gurukul, Kalawad Road, Rajkot - 360005, Gujarat (INDIA)

Project Report

On

"ONLINE GROCERY SHOPPING"

Under subject of

MAJOR PROJECT

B.Tech, Semester - VIII

(Department of Information Technology)

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Academic Year (2022-23)



CANDIDATE'S DECLARATION

We hereby declare that the work presented in this project entitled "Online Grocery Shopping Application" submitted towards completion of project in 8th Semester of B. Tech. (Information Technology) is an authentic record of our original work carried out under the guidance of "Prof. Hiren Bhatt".

We have not submitted the matter embodied in this project for the award of any other degree.

Semester: 8th Place: Atmiya University, Rajkot

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CERTIFICATE

Date: 5/04/2023

This is to certify that the "**Online Grocery Shopping Application**" has been carried out by **Naitik Shah** under my guidance in fulfillment of the subject Major Project in Information Technology (8th Semester) of Atmiya University, Rajkot during the academic year 2022-23.

Prof. Hiren Bhatt

Prof. Darshan Jani

(Project Guide)

(Head of the Department)



CERTIFICATE

Date:5/04/2023

This is to certify that the "**Online Grocery Shopping Application**" has been carried out by **Het Suhagiya** under my guidance in fulfillment of the subject Major Project in Information Technology (8th Semester) of Atmiya University, Rajkot during the academic year 2022-23.

Prof. Hiren Bhatt

Prof. Darshan Jani

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CERTIFICATE

Date:5/04/2023

This is to certify that the "**Online Grocery Shopping Application**" has been carried out by **Yashrajsinh Zala** under my guidance in fulfillment of the subject Major Project in Information Technology (8th Semester) of Atmiya University, Rajkot during the academic year 2022-23.

Prof. Hiren Bhatt

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(Head of the Department)

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We even thank and appreciate to our colleague in developing the project and people who have willingly helped us out with their abilities.

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ABSTRACT

The "Online Grocery Shopping System" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover, this system is designed for the particular need of the company to carry out operations in a smooth and effective manner. It also provides error message while entering invalid data. No formal knowledge is needed to use this application. There is no confinement for placing and receiving orders, since the order can be placed online. The delivery of the placed order is received at your doorstep. Database includes Customers who can order any grocery item from their nearby grocery stores on the basis of their current location; from different food categories and staff will process the orders and deliver the requested order, and asking the customers for the reviews or feedbacks.

INDEX

Sr. No.	TITLES		Page No.	
110.			1	
	Acknowledgement Abstract List of Figures List of Tables			2
				9
				10
1.	Introduction		11	
	1.1	Purpo	se	11
	1.2	Scope		11
	1.3		ology and tool	12
2.	Proj	ect Ma	nagement	13
	2.1	Projec	et Planning	13
	2.2	Projec	et Scheduling	13
	2.3	Risk N	Management	13
		2.3.1	Risk Identification	14
		2.3.2	Risk Analysis	15
3.	Syst	em Req	quirements Study	17
	3.1	Hardw	vare and Software Requirements	17
		3.1.1	Server side hardware requirement	17
		3.1.2	Software requirement	17
		3.1.3	Client Side requirement	17
	3.2	Constr	raints	18
		3.2.1	Hardware Limitation	18
		3.2.2	Reliability requirements	18
4.	Syst	em Ana	alysis	19
	4.1	Study	of Current System	19
	4.2	Proble	em and Weaknesses of Current System	19
	4.3	Requi	rements of New System	20
		4.3.1	User Requirements	20
		4.3.2	System Requirements	20
	4.4	Feasib	bility Study	21

ATMIYA UNIVERSITY, RAJKOT

	4.5	Select	ion Of Hardware and Software and Justification	21
5	Syst	em Des	22	
	5.1	Input /	24	
	5.2	Interface Design		24
		5.2.1	Use Case Diagram	25
		5.2.2	Data Flow Diagram	26
6	Cod	e Imple	ementation	28
	6.1	Implei	mentation Environment	28
	6.2	Progra	am/Module Specification	28
	6.3	Codin	28	
7	Test	ing		29
	7.1	Testin	29	
	7.2	Testing Method		
		7.2.1	Unit Testing	29
		7.2.2	Integration Testing	29
		7.2.3	Validation Testing	29
8	Lim	itations and Future Enhancement 3		30
	8.1	Limitations		30
	8.2	Future Enhancement		30
9	Conclusion			31
10	References			32

ATMIYA UNIVERSITY, RAJKOT

LIST OF FIGURES

Figure	Table Title	
No.	Table The	No.
5.1.1	Login / Registration Activity	22
5.1.2	Main Activity	23
5.1.3	Order Activity	24
5.2.1	Use case Diagram	25
5.2.2.1	Context Level DFD	26
5.2.2.2	First Level DFD	27

LIST OF TABLES

Table	Table Title	Page
No.	Table Title	No.
3.1.1.1	Server side Hardware Requirements	17
3.1.2.1	Software Requirements	17
3.1.3.1	Client side Requirements	17

<u>CHAPTER – 1</u> INTRODUCTION

1.1 Purpose

The purpose of the Online Grocery Shopping System is to automate the existing manual system by the help of computerized equipments and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. The required software and hardware are easily available and easy to work with. The main objective is to learn and implement a real-time application on database. It manages all the information about Grocery, Address, Product. Purpose of making the project is to build an application program to reduce the manual work. It tracks all the the details about the orders, products, etc.

1.2 Scope

It may help collecting perfect management in details. In a very short time, the collection will be obvious, simple and sensible. It will help a person to know the management of passed year perfectly and vividly. It also helps in current all works relative to Online Grocery Ordering System. It will be also reduced the cost of collecting the management & collection procedure will go on smoothly.

Our project aims at Business process automation, i.e. we have tried to computerize various processes of Online Grocery Ordering System.

- In computer system the person has to fill the various forms & number of copies of the forms can be easily generated at a time.
- In computer system, it is not necessary to create the manifest but we can directly print it, which saves our time.
- To assist the staff in capturing the effort spent on their respective working areas.
- To utilize resources in an efficient manner by increasing their productivity through automation.
- The system generates types of information that can be used for various purposes.
- It satisfy the user requirement Atmiya University, Rajkot

- Be easy to understand by the user and operator
- Be easy to operate
- Have a good user interface
- Be expandable
- Delivered on schedule within the budget.

1.3 Technology and tools:

1.3.1 Flutter

This application This application is built on Flutter technology. Flutter offers several advantages because it is a Google product. The following is a quick overview of flutter. The app development process is revolutionized by Flutter. You can design, test, and publish stunning mobile, web, desktop, and embedded apps by writing onetime code. Google built Flutter as an open-source project. It's used to make hybrid apps for Android, iOS, Linux, macOS, Windows, Google Fuchsia, and the web from a single codebase.

You can develop and iterate quickly using Hot Reload. You'll observe changes very immediately after updating the code, with no loss of state. Maintain every pixel to create unique, responsive designs that look and feel great on every device.

Every component in flutter is referred to as a widget. It is entirely widget based. Stateless or stateful widgets are available. There are several states in a stateful widget, not just one. They have the ability to modify their state in response to user interest. A Stateless widget, on the other hand, is a static widget that is utilized for static data or functionality. It is devoid of any state. We need to utilize it in some circumstances because we work with static data.

Flutter is an open-source project, anybody may use and contribute to it at any level. Flutter code is written in Dart, which has many cryptos and encrypts libraries that employ various cryptographic hashing and encryption techniques.

1.3.2 Android

Android is a multitasking mobile operating system that runs on smartphones, tablets, readers, televisions, and even domestic robots. Android is a very adaptive and engaging system, and a basic acquaintance takes less than an hour. Because there are so many essential programs accessible, any customer may easily configure OS settings. You can modify everything past recognition: if you don't like the look, symbols, or ringtone, simply go to the Google Play Store, download a significant program, and quickly customize everything to your desire.

1.3.3 Dart

Dart is a client-oriented programming language that enables rapid app development across all platforms. Its primary goal is to create one of the most productive languages on a variety of platforms. Both the server and the user will benefit from it. The Dart SDK includes the Dart VM compiler as well as the dart2js tool, which generates the JavaScript version of a Dart Script so that it may be executed on sites that don't support Dart. It is a very similar object-oriented programming language to C++.

Dart is a popular programming language for creating single-page websites and online apps Dart is designed to provide logic and, as a result, a beautiful user interface. For mobile, desktop, and backend apps, compile specialized machine code. Alternatively, for web use, compile to JavaScript.

Backend Technology:

1.3.4 Firebase

Firebase is a Google program that allows developers to create apps for a variety of platforms, including iOS, Android, and web-based apps. Firebase is a quick tool for developing things that would take a long time in a traditional database system, such as bespoke APIs. Firebase has built-in APIs that allow us to construct applications quickly. One of the nicest features of Firebase is that it gives us tools for tracking business reports and experimenting with different goods.

The Firebase database is a real-time database that allows clients to immediately access data. Even if you are not connected to the internet, you can still use your program with all of your prior data sets. Firebase allows users to use data in a secure and secured manner.

Software used:

1.3.5 Android Studio

It's a Google-created integrated development environment (IDE). The goal of Android is to speed up progress and make it easier for users to create high-quality apps for Android devices. Commonly used operating frameworks, such as Mac and Windows, allow variations of this IDE. It also provides a development kit and plugins for developers. cross-platform application support (IDE).

2.PROJECT MANAGEMENT

2.1 Project Planning:

Project Planning is concerned with identifying and measuring the activities, milestones and deliverables produced by the project. Project planning is undertaken and completed sometimes even before any development activity starts. Project planning consists of following essential activities:

- Scheduling manpower and other resources needed to develop the system.
- Staff organization and staffing plans.
- Risk identification, analysis, and accurate planning.

• Estimating some of the basic attributes of the project like cost, duration and efforts. The effectiveness of the subsequent planning activities is based on the accuracy of these estimations.

• Miscellaneous plans like quality assurance plan, configuration management plan, etc.

Project management involves planning, monitoring and control of the people, process, and the events that occurs as the software evolves from a preliminary concept to an operational implementation. Cost estimation is a relative activity that is concerned with the resources required to accomplish the project plan.

2.2 Project Scheduling:

The scheduling is the peak of a planning activity, a primary component of software project management. When combined with estimation methods and risk analysis, scheduling establishes a roadmap for project management. The characteristics of the project are used to adapt an appropriate task set for doing work.

2.3 Risk Management:

Risk management consists of a series of steps that help a software development team to understood and manage uncertain problems that may arise during the course of software development and can plague a software project. Risks are the dangerous conditions or potential problems for the system which may damage the system functionalities to very high level which would not be acceptable at any cost. So in order to make our system stable and give its 100% performance we must have identify those risks, analyze their occurrences and effects on our system and must prevent them to occur.

2.3.1 Risk Identification:

Risk identification is a first systematic attempt to specify risks to project plan, Scheduling resources, project development. It may be carried out as a team process using brainstorming approach

Technology risk:

Technical risks concern implementation, potential design, Interfacing, testing, and maintenance problems

- Database Corruptness
- Garbage Collection

People Risks:

These risks are concerns with the team and its members who are taking part in developing the system.

- Leaking an important data
- Failure of the administration
- Lack of knowledge,
- Lack of clear product vision.
- Technical staff conflict
- Poor communication between people

Tools Risks:

These are more concerned with tools used to develop the system

• Tools containing virus.

General Risks:

General Risks are the risks, which are concerned with the mentality and resources.

- Lack of resources can cause great harm to efficiency and timely productivity.
- Rapidly changing requirements.
- Changes in requirements can cause a great harm to implementation, designing and schedule of developing the system.
- Insufficient planning and task identification.

2.3.2 Risk Analysis

"Risk analysis = risk assessment + risk management + risk communication." Risk analysis is employed in its broadest sense to include:

Risk assessment:

Involves identifying sources of potential harm, assessing the likelihood that harm will occur and the consequences if harm does occur.

For this project It might be :- • System Crash.

Risk management:

Evaluates which risks identified in the risk assessment process require management and selects and implements the plans or actions that are required to ensure that those risks are controlled.

Precautions taken to make risks minimal are as under:-

• Periodical backups are taken to avoid major loss in case of system crash.

Risk communication:

Involves an interactive dialogue between stakeholders and risk assessors and risk managers which actively informs the other processes.

Steps taken for risk communication is as under:-

- Probability of certain risks is negotiated with client.
- All the possible risks are listed out during communication and project is developed taking care of that risks.

3. SYSTEM REQUIREMENTS STUDY

3.1 Hardware and Software Requirement

This shows minimum requirements to carry on to run this system efficiently.

3.1.1 Hardware Requirements

Server side Hardware Requirement:

Devices	Description
Processor	Intel Core Duo 2.0 GHz or more
RAM	512 MB or more
Hard Disk	10 GB or more

 Table 3.1.1.1 Server side Hardware Requirement

3.1.2 Software Requirements

For which	Software
Operating System	Windows 7/8/10, Linux
Front End	Flutter
Back End	Flutter, Firebase
Coding language	Dart

Table 3.1.2.1 Software Requirement

3.1.3 Client side Requirements

For which	<u>Requirement</u>
Android	Greater than 4.1

Table 3.1.3.1 Client side Requirement

3.2 Constraints

3.2.1 Hardware Limitations

The major hardware limitations faced by the system are as follows:

If the appropriate hardware is not there like processor, RAM, hard disks

-The problem in processing requests of client

-If appropriate storage is not there our whole database will crash due to less storage because our main requirement is large storage.

3.2.2 Reliability Requirements

Since many users can access the server simultaneously, load on the server becomes very high. Hence, the server should be of enough high configurations. There should be high back up storage and management of huge data for overall ideas, videos, images, multiple countries, multiple user profile.

The Reliability requirements are the validations used to protect the system against one or more incorrect activities. Without proper validation of the system, the failure possibilities of it grow higher so it is must to understand the proper validation of the system and must implement them. All the required validator controls spend very good role to keep the system secure from any unauthorized or incorrect information. In all these validation actions if system found one or more entries violating validation rules then user will be warned by proper error messages and the details or the record is not going to be saved until corrections are made to them.

4. SYSTEM ANALYSIS

4.1 Study Current System

Implementation is the stage where the theoretical design is turned into a working system. The most crucial stage in achieving a new successful system and in giving confidence on the new system for the users that it will work efficiently and effectively.

The system can be implemented only after thorough testing is done and if it is found to work according to the specification.

It involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the change over and an evaluation of change over methods a part from planning. Two major tasks of preparing the implementation are education and training of the users and testing of the system.

The more complex the system being implemented, the more involved will be the systems analysis and design effort required just for implementation.

The implementation phase comprises of several activities. The required hardware and software acquisition is carried out. The system may require some software to be developed. For this, programs are written and tested. The user then changes over to his new fully tested system and the old system is discontinued.

4.2 Problem and weakness of current system:

In the existing system the exams are done only manually but in proposed system we have to computerize the exams using this application.

- Lack of security of data.
- More man power.
- Time consuming.
- Consumes large volume of pare work.
- Needs manual calculations.
- No direct role for the higher officials

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4.3 Requirements of New System

4.3.1 User Requirements:

The user requirement for this system is to make the system fast, flexible, less prone to error, reduce expenses and save the time.

4.3.2 System Requirements:

The Software Requirements Specification is produced at the culmination of the analysis task. The function and performance allocated to software as part of system engineering are refine by establishing a complete information description, a detailed functional and behavioral description, an indication of performance requirements and design constraints, appropriate validation criteria, and other data pertinent to requirements.

The proposed system has the following requirements:

- System needs store information about new entry of Grocery.
- System needs to help the internal staff to keep information of Customer and find them as per various queries.
- System need to maintain quantity record.
- System need to keep the record of Order.
- System need to update and delete the record.
- System also needs a search area.
- It also needs a security system to prevent data.

4.4 Feasibility Study:

After doing the project Online Grocery Ordering System, study and analyzing all the existing or required functionalities of the system, the next task is to do the feasibility study for the project. All projects are feasible - given unlimited resources and infinite time.

Feasibility study includes consideration of all the possible ways to provide a solution to the given problem. The proposed solution should satisfy all the user requirements and should be flexible enough so that future changes can be easily done based on the future upcoming requirements.

A. Economical Feasibility

This is a very important aspect to be considered while developing a project. We decided the technology based on minimum possible cost factor. All hardware and software cost has to be borne by the organization. Overall we have estimated that the benefits the organization is going to receive from the proposed system will surely overcome the initial costs and the later on running cost for system.

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B. Technical Feasibility

This included the study of function, performance and constraints that may affect the ability to achieve an acceptable system. For this feasibility study, we studied complete functionality to be provided in the system, as described in the System Requirement Specification (SRS), and checked if everything was possible using different type of frontend and backend platforms

C. Operational Feasibility

No doubt the proposed system is fully GUI based that is very user friendly and all inputs to be taken all self-explanatory even to a layman. Besides, a proper training has been conducted to let know the essence of the system to the users so that they feel comfortable with new system. As far our study is concerned the clients are comfortable and happy as the system has cut down their loads and doing.

4.5 Selection of Hardware and Software and Justification

The configuration of the existing systems is:

Processor : Pentium III, 500 MHz (or above)

Memory : 128 MB (or above) Secondary

Storage : 20 GB (or above)

For Software there are following alternatives:

Operating System : Window 9/8/10, 2000, XP, NT

Development tools : Flutter, Dart language, Firebase

for database (JSON format)

Documentation tool : MS-Word

5. System Design

5.1 Input /output interface

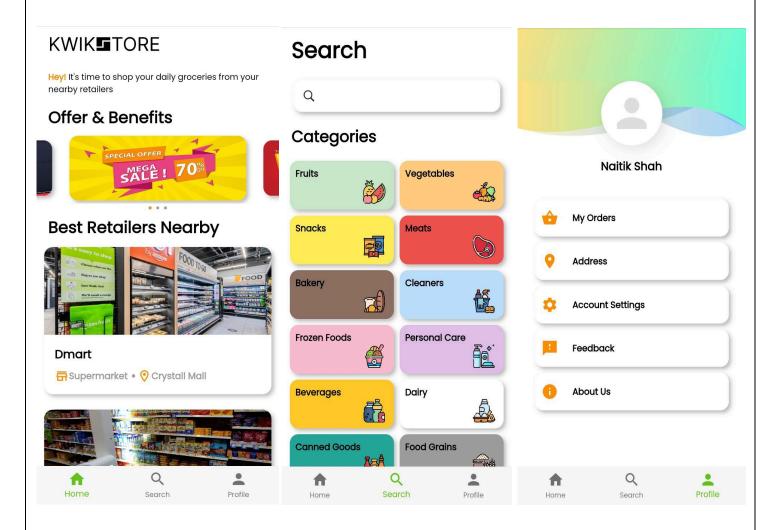
5.1.1 Registration / Login activity

4:20	ତ 🔛 : 🎾 36% 🖬	4:20	전 🔛 = 🎾 36% 🖨
		Wel	come
		Get your	groceries KWIK
H	ello	E-mail address	
Signin inte	o your account		
Username – Enter your use	rname	Password	Ø
		Confirm Passw	vord 💿
Password	•		
	forgot your password?	I accept all	terms and conditions.
		Si	ign Up
s	ign In	Or create accou	int using social media
New to Kwi	kShop? Sign Up	G+	O 0
		Joined us	before? Login
_			

Login Page

Registration Page

5.1.2 Main activity

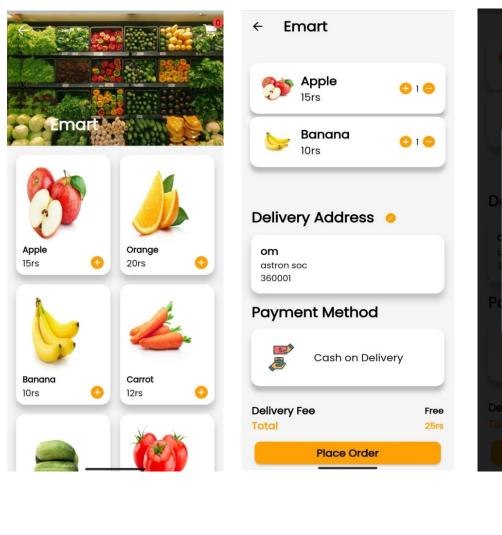


Home Page

Search Page

Profile Page

5.1.3 Order activity



Add Item

Cart

Order Confirmation

Order Successful

Thank you so much for

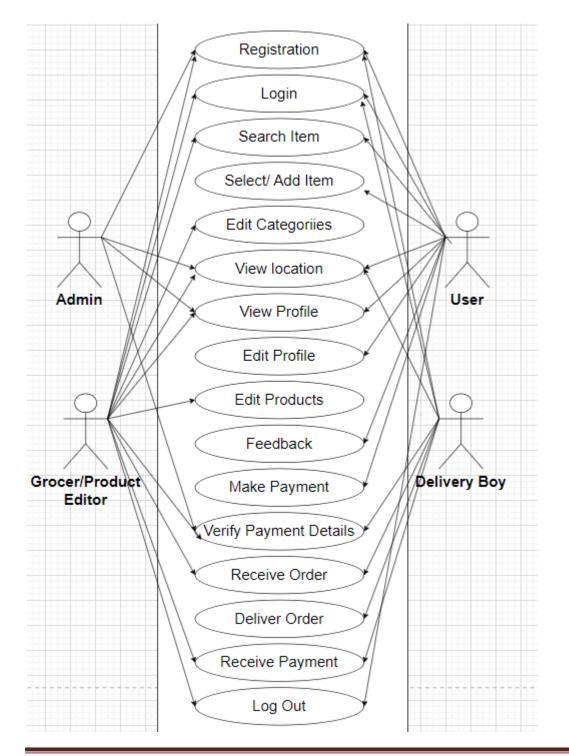
your order

Back to Home

X

5.2 Interface Design

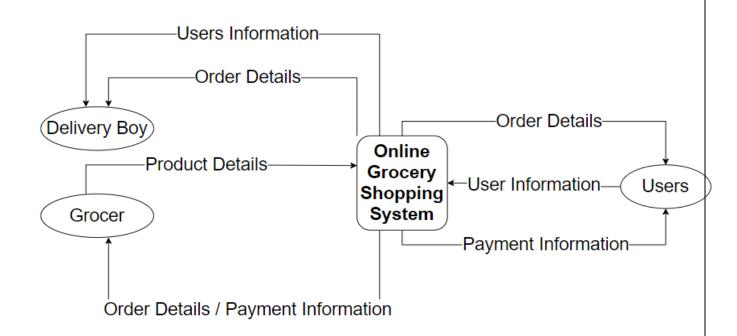
5.2.1 Use case diagram



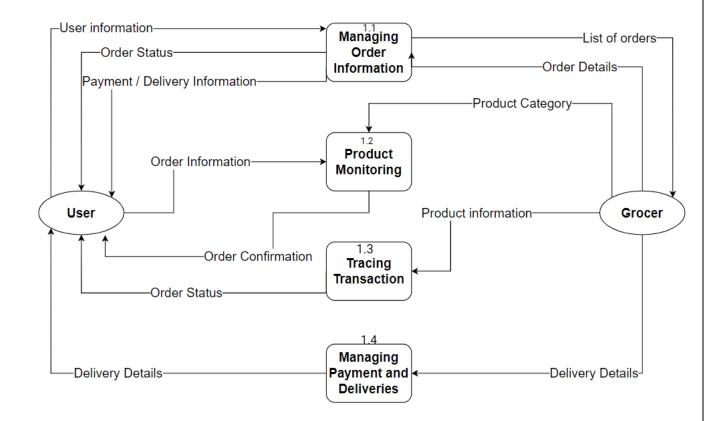
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5.2.2 Dataflow diagram

5.2.2.1 DFD level 0



5.2.2.2 DFD level 1



6. Code Implementation

6.1 Implementation Environment

Challenges identified for successful design and implementation of this project are dominated by:

• Complexity, reliability/availability, transparent data access. The project was a result of a group consensus. The team was having two members. The team was guided by project manager. The team structure depends on the management style of the organization, the no. of people in the team, their skill levels and the problem difficulty.

6.2 Program/Module Specification

• System GUI must be as simple and user friendly as anyone can use it. At front side we implemented User registration and login page.

• A Session is maintained throughout the system when a particular user enters their names into the system.

6.3 Coding Standards

• Normally, good software development organization requires their programmers to maintain some well-defined and standard style of coding called coding standard.

6.3.1 Comment Standards:

• The comment should describe what is happening, how it is being done, what parameters mean, which global are used and which are modified, and any registration or bugs.

The standards I have followed are:

• Comment may also be used to explain individual sections or lines of codes to easily get access and easily review or manage the classes or properties for the pages.

• Inline comments should be made with the //. Comment style and should be indented at the same level as the code described.

• For multiple line comments we write between /**/.

7. Testing

7.1 Testing Strategy

A strategy for software testing integrates software test case design method into a well-planned series of steps that result in the successful construction of the software. The strategy provides the roadmap that describes the steps to be conducted as a part of testing, then these steps are planned and then undertaken, and how much effort, time and resource will be required.

7.2 Testing Method

7.2.1 Unit Testing

The unit testing is meant for testing smallest unit of software. There are two approaches namely bottom-up and top-down. In bottom up approach the last module is tested and then moving towards the first module while top down approach reverses the action. In present work we opt for the first one. The bottom up approach for the current project is carried out as shown in.

7.2.2 Validation Testing

After the integration testing software is completely assembled as a package, interfacing error have been uncovered and corrected, and then validation testing may begin. Validation can be defined in many ways but a simple definition is what a validation succeeds when software functions in a manner that can be reasonably accepted by the user.

7.2.3 Integration Testing

The integration testing is meant to test all the modules simultaneously because it is possible that all the modules may function correctly when tested individually. But they may not work altogether and may lead to unexpected outcome.

8. Limitations and Future Enhancement

8.1 Limitations:

Although I have put my best efforts to make the software flexible, easy to operate but limitations cannot be ruled out even by me. Though the software presents a broad range of options to its users some intricate options could not be covered into it; partly because of logistic and partly due to lack of sophistication. Paucity of time was also major constraint, thus it was not possible to make the software foolproof and dynamic. Lack of time also compelled me to ignore some part such as storing old result of the candidate etc.

In the current project we have not worked on online payment methods.

8.2 Future Enhancement:

There is always a scope for enhancements in any developed system, especially when our nature of the project is iterative waterfall which allows us to rethink on the method of development to adopt changes in the project. Below mentioned are some of the changes possible in the future to increase the adaptability, and efficiency of the system.

- More attractive GUI (Graphical user interface).
- Communication options like chat.
- Online payment options.

9. Conclusion

Our project is only a humble venture to satisfy the needs to manage our project work. Several user friendly coding is also adopted. This package shall prove to be a powerful package with satisfying all the requirements. The objective of software planning is to provide a frame work that enables the manager to make reasonable estimates made within a limited time frame at the beginning of the software project and should be updated regularly as the project progresses.

10. Reference

We used Google for the reference. We learnt the whole flutter course from the Udemy courses. Images source: Google We also watched many YouTube tutorials.