Last Honor

(Funeral Services Application)

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2022

Bachelor of Science in Information Technology (2018-2022)

The candidate confirms that the work submitted is their own and appropriate credit has been given where reference has been made to the work of others.

DECLARATION

We hereby declare that this software, neither whole nor as a part has been copied out from any source. It is further declared that we have developed this software documentation and accompanied report entirely on the basis of our personal efforts. If any part of this project is proved to be copied out from any source or found to be reproduction of some other. We will stand by the consequences. No Portion of the work presented has been submitted of any application for any other degree or qualification of this or any other university or institute of learning.

Samina Sarfaraz	**Bushra Younas**	**Dania Waheed**
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CERTIFICATE OF APPROVAL

It is to certify that the final year project of BS (IT) "**Last Honor Funeral Application**" was developed by "**Samina Sarfaraz, 18-Arid-2823"**, "**Bushra Younas, 18-Arid-2754"**and "**Dania Waheed, 18-Arid-2755"** under the supervision of "**Ms. Sidra Tahir**" and that in their opinion; it is fully adequate, in scope and quality for the degree of Bachelors of Information Technology.

Supervisor

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Executive Summary

Funeral home software program allows proprietors and bosses to schedule funerals and speak with clients. Funeral domestic operators can use the software solutions to manipulate scheduling, resources, and custom offerings. The software frequently offers a portal via which clients request services and deliver information about the deceased. These platforms offer equipment to keep records concerning funeral offerings and the deceased. They assist customers create a database for previous offerings and plan for destiny offerings. The application will serve as the single service provider which enables people to make arrangements of Kafon Dafon and Tajheez O Takfeen in dignified affordable and meaningful manners. Registration and booking with simple steps will help user to get their arrangement done timely at a time of grief and bereavement. The system will suggest different funeral homes and nearby graveyard according to chosen location of users.

Acknowledgement

All praise is to Almighty Allah who bestowed upon us a minute portion of His boundless knowledge by virtue of which we were able to accomplish this challenging task.

We are greatly indebted to our project supervisor "**Ms. Sidra Tahir**" and for personal supervision, advice, valuable guidance and completion of this project. We are deeply indebted to her for encouragement and continual help during this work.

And we are also thankful to our parents and family who have been a constant source of encouragement for us and brought us the values of honesty & hard work.

Samina Sarfaraz	**Bushra Younas**	**Dania Waheed**
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Abbreviations

SRS	Software Requirement Specification
PC	Personal Computer
TCP	Transmission Control Protocol
IP	Internet Protocol
HTTP	Hyper Text Transfer Protocol
UML	Unified Modeling Language
ERD	Entity Relationship Diagram

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Chapter 1: Introduction

In this chapter we will talk about outline of our entire venture, its concise presentation, and how it is applicable to the courses which we have contemplated during our certification. We will likewise talk about project writing audit and its investigation and procedure that we will use in project.

1.1. Brief

Funeral services software program allows users to schedule funerals and speak with service providers. Funeral domestic operators can use the software solutions to manipulate scheduling, resources, and custom offerings. The software frequently offers a portal via which clients request services and deliver information about the deceased. The platform offers equipment to keep records concerning funeral offerings and the deceased. The system maintains services availability and schedule for destiny offerings.

Each and every one of us will be affected by the death of a loved one during our lifetime. To most, it can be an upsetting event. Since the beginning of time, death has been an event that brings people together to say farewell to someone that has passed. All populations across the world have different traditions, but the final product is ultimately the same. The large variation in funeral practices is mainly due to both personal preference or religious traditions and the fact that not all funeral homes are able to accommodate different styles of funerals. Because of the wide range in services, it's often overwhelming for people when they first start planning the funeral. So, this funeral services application will be very helpful. After dealing with the initial shock of a death, the funeral planning can be difficult, especially when it's your first time doing it. The options and cost are usually unknown for many people, yet they happen to be the most important part of the planning process. To ease this lack of awareness and difficulty, an interactive platform will be developed to aide customers in their funeral planning process.

The current technology is outdated and not meeting the needs of the current cliental, therefore, the enhancement will be created such that it will initiate better customer service and promote more business.

The three main goals of funeral services app are following:

- Increase public awareness and knowledge of how the funeral process works

- Distinguish all the funeral options available
- Explain the services provided in an easy way

1.2. Relevance to Course Modules

During our degree program we have covered so many programming details and modules that make LAST HONOR relevant to the course material as in Object Oriented programming we come to understand about the class and object that makes the basic structure of the project.

- Despite that we have also covered many concepts from object-oriented analysis and design, which helps in understanding of UML diagrams and Entity relationship diagram.
- Modern programming language and Android Application development courses facilitates in understanding of the Mobile application development and language usage with various perspectives.
- Database Administration and system helps to maintain data records in form of relations, which begin easy for users and system Administration to handle data of the application.

1.3. Project Background

It is important to honor all aspects of a person's death services during the funeral ceremony. So, The project background aims to provide a death services platform form people of Pakistan at a time of grief and agony on the death of their beloved one. We are well known about the fact that death is such an event in the life of anyone that makes people restless and tires so it becomes difficult for people to manage all the basis services and requirements of funerals by them. Therefore, LAST HONOR would be an android application that facilitates the users by providing them with all the necessary funeral services. Funerals are the most highly performed events in all over the world. Every religion pays great attention in performing these events according to its own teaching. There are many countries that have especially designed applications to help people in performing these activities more conveniently. But there is no such application in Pakistan so far. The proposed system helps the Pakistan's people to make these funeral arrangements effective and to keep their last time with their loved ones easier by taking all the ceremonial responsibilities under control. The proposed application serves as a single platform to provide essential funeral services and ceremonial arrangements to the people of Pakistan regardless of their religion. On our behalf users can contact the appropriate services providers according to their feasibility and

approach. They could book for various services including burial arrangements, sitting arrangement, catering services, Transport services etc. Any user can avail the services regardless of the religion and gender.

Project overview

The proposed application will be the single platform providing funeral arrangement services including transport, burial arrangements, catering and sitting arrangements in a dignified and affordable way. Registration and reservations would be done with simple steps to make the process convenient for the customers and the arrangements would be done on time. The system will suggest different funeral homes and nearby graveyard according to chosen location of users and provides step by step tracking visuals on the basis of its progress made during the service delivery.

Project aim

Make the arrangements to honor the deceased according to the desire of the bereaved family. Conduct other preparations such as dressing the body to make it presentable. It will help the customer in difficult time. It will offer availability of the internet and browser so that user can easily access on it. To provide all these services on time and in well define manner. Our project is reliable with effective response time.

1.4. Lecture Overview

There are few funeral homes and services application that are working in foreign countries but according to specified religions and races. So, it is dire need to provide platform for people of Pakistan so that it would become easy for them to get their funeral services done without any trouble and problem.

Some of the already available systems are mentioned below.

Khan Funeral Home, Bougheed flowers and Sendoff funeral app are the existing applications providing their services for the arrangements of the funeral activities. The basic purpose of the existing systems is to make the funeral event easier for the families at their difficult times.

- **Khan Funeral Home** is providing services to only Muslim families. While this system doesn't show the obituaries list for whom it had provided its services before.
- **Bougheed flowers** are providing their services to all regardless of religion. But their services are same for everyone. They are bound to their fixed service if any specific requirements are

needed to be done on religion basis; they are unable to meet any specific customer requirements.

- **Sendoff funeral app** provides different packages offering their services to the customers. But their packages and costs are fixed. Packages will be costly if anyone doesn't want to avail all the services offered in a single package.

1.5. Analysis from Literature Review

The system aims to facilitate users in time of grief and sorrow to select funeral arrangement services in a package form or individually as per their requirements. System asks the user to get registered for the service and give the required information. Customers views different packages that are being offered by the system and select one. Proper information of the deceased is taken by the system in order to make funeral arrangements. Service starts with the sitting arrangements by asking the customers whether they want to make arrangements at their own place or at the area which the system is offering. Catering arrangements are done on the basis of the number of the people who are going to attend the funeral. Burial services include the coffin daffon and ghusl of the deceased which are efficiently done by the system service providers in a friendly way. Transport is provided for the departure of the body from the home to graveyard to pay the last rituals of the deceased. Visual tracks are added to make customers aware of the process and the costs are customized according to the services availed by the customers. Payments are done by the online methods. Feedback is taken to know the experience of the customers regarding services of the funeral application.

1.6. Methodology and Software Lifecycle for This Project

Agile software methodology would be used for development of funeral services application. This method assists in responding to the unpredictability of constructing software. This method offers a light framework and focus on rapid delivery of the software. Moreover, agile method facilitates us to create and respond to change in an uncertain and turbulent situation. Our focus is to collaborate with stakeholders during project to ensure the product quality which is impossible without using agile methodology.

The Agile Methodology is needed for this project because of the following reasons:

- This software methodology would help to minimize risk and help in risk management.

- The cost risk, errors and bugs, requirement changes could easily be handled.
- Agile helps to add new functionalities, develop the system in iterative manner.
- Earlier software benefits realization and frequent incremental improvements.

Diagram for Agile Methodology

Following diagram shows the steps involve in agile software development methodology. These include requirement, design, development, testing, development and maintenance.

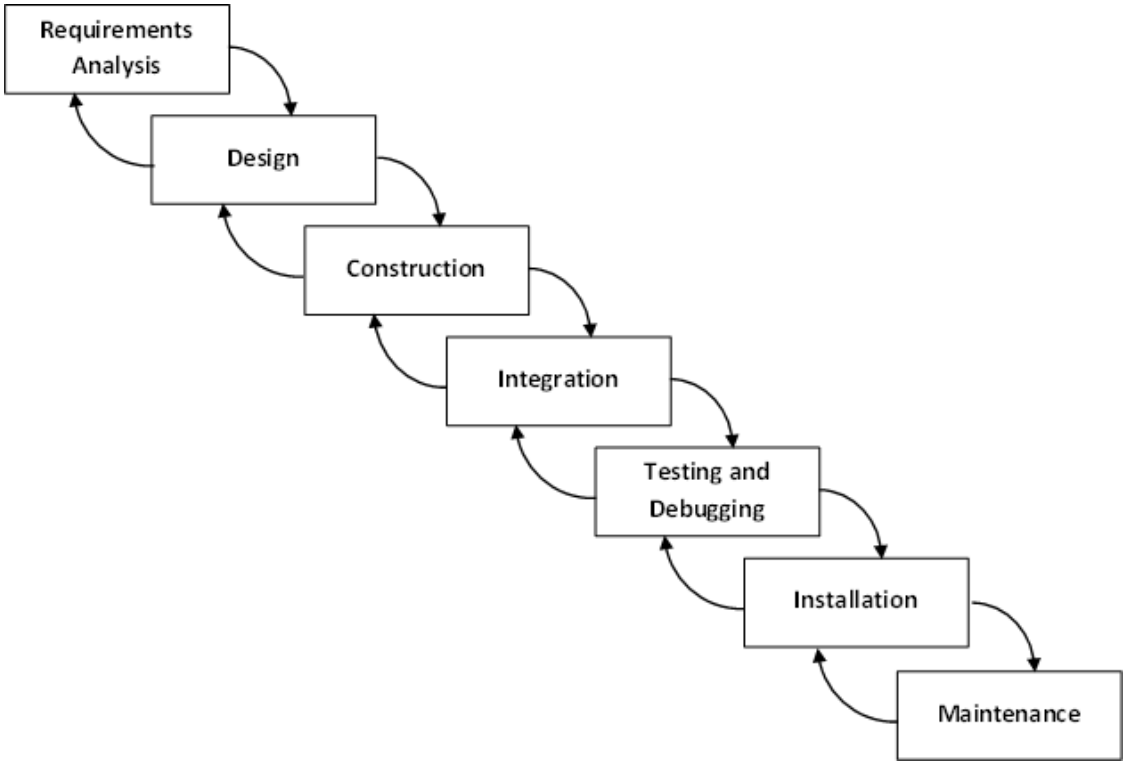

Figure 1.1: Agile Development Lifecycle Steps

Chapter summary

The chapter includes the brief introduction about the project and also covers the details about the literature review analysis, Software methodology being used in development of the project. Project relevance and course modules covers the details about the basic concepts which have been covered during the degree program and which are relevant to this android project development.

Chapter 2: Problem Definition

2.1. Problem Statement

Funerals are the most highly performed events in all over the world. Every religion pays great attention in performing these events according to its own teaching. There are many countries that have especially designed applications to help people in performing these activities more conveniently. But there is no such application in Pakistan so far. The proposed system helps the Pakistan's people to make these funeral arrangements effective and to keep their last time with their loved ones easier by taking all the ceremonial responsibilities under control. The proposed application serves as a single platform to provide essential funeral services and ceremonial arrangements to the people of Pakistan regardless of their religion.

2.2. Product Functions:

The product functions of the Last Honor funeral application are:

- ✓ Login/Signup
- ✓ Reservation(Catering, Casket, Sitting Arrangements and transportation)
- ✓ Cancel Reservation
- ✓ Payment
- ✓ Admin Roles

Login/Signup: The customer or user will sign up for the first time when performing a selection package process and get registered for the application as a member. By doing so the user can make funeral reservations for their loved ones otherwise the user can only view the gallery or the provided info but can't select any packages or services.

Database Connectivity: Database will be used to store all the information regarding the funeral arrangement process, customer info, deceased info, different service providers involving sitting arrangements, burial services, transportation, tracking info etc. All the

information provided by the customers at the signup or registration time, the information about the deceased or the service providers providing different services in the funeral arrangements will be stored in the database. For this purpose, ***Firebase*** database will be used.

Reservation: The customer will select a package from the given packages. Each package consists of different services and different costs. The purpose of the varying package cost is to ensure that each and every person belonging to any class or religion will be fully beneficial from the application. The customer will also be able to customize the offered services so that each customer can get maximum services according to his own choice.

Cancel Reservation: They can also cancel the reservation at any time but the payment would not be refundable.

Payment: After selecting a package, the customer will be directed to make payment for the confirmation of the reservation and to start the funeral arrangement process.

Admin Roles: Admin will manage the whole application by contacting both the customer and the service providers. He can add, delete, modify the package or services details and communicate with both parties until the last step of the ceremonial arrangement is done.

2.3. Deliverables and Development Requirements

Deliverables and development requirements are:

2.3.1 Projects Deliverables:

Deliverables are the result or end product that a project would provide at its completion. The result could be tangible or intangible. In the proposed project the deliverables could be the services that the application is offering as the main purpose of the application is to provide funeral services to the customers. In this aspect, the deliverable could be all the services like transport, catering, burial, tracking system, sitting arrangement which help to provide the main deliverable that is the funeral arrangement.

Project Proposal, project drawings, progress reports and documentation that help to complete these small deliverables would also be consider as deliverables.

2.3.2 Development Requirements:

Project Development Requirements are conditions or tasks that must be completed to ensure the success or completion of the project. Project requirements can be categorized into three main categories: business, solution, and stakeholder requirements.

Business requirements: Last Honor app is being designed to provide funeral services to its customers to make their difficult times easy by taking full responsibility of the ceremonial activities.

Solution requirements: Last Honor app make funeral arrangements by taking complete information from its customers and provide them their asked services in an easy and friendly manner. All the services should be done on time without any problems or complaints from the customers.

Stakeholder: Customers who have used the suggested app should be fully satisfied with the whole process and get their required services without hurdles.

2.4. Proposed Architecture:

3Tier Architecture has been used in the project.

We have three layers in 3Tier Architecture:

1. Presentation Tier
2. Application Tier
3. Data Tier

- **Presentation Tier:** This layer provides multiple interfaces to the user through which user interact with the application. Presentation layer acts as a communicator between app and its customers. This is top layer of the application architecture.
- **Application Tier:** In this layer we will apply logics in our Android Application by using Java Language. This tier- also called Middle tier, Logic tier and Business tier, pulled from presentation tier.
- **Data Tier:** Data is this tier is kept independent of application servers and Business logic. In this layer we will use phpMyAdmin which will store all the data.

Following Diagram shows the interaction among different tiers:

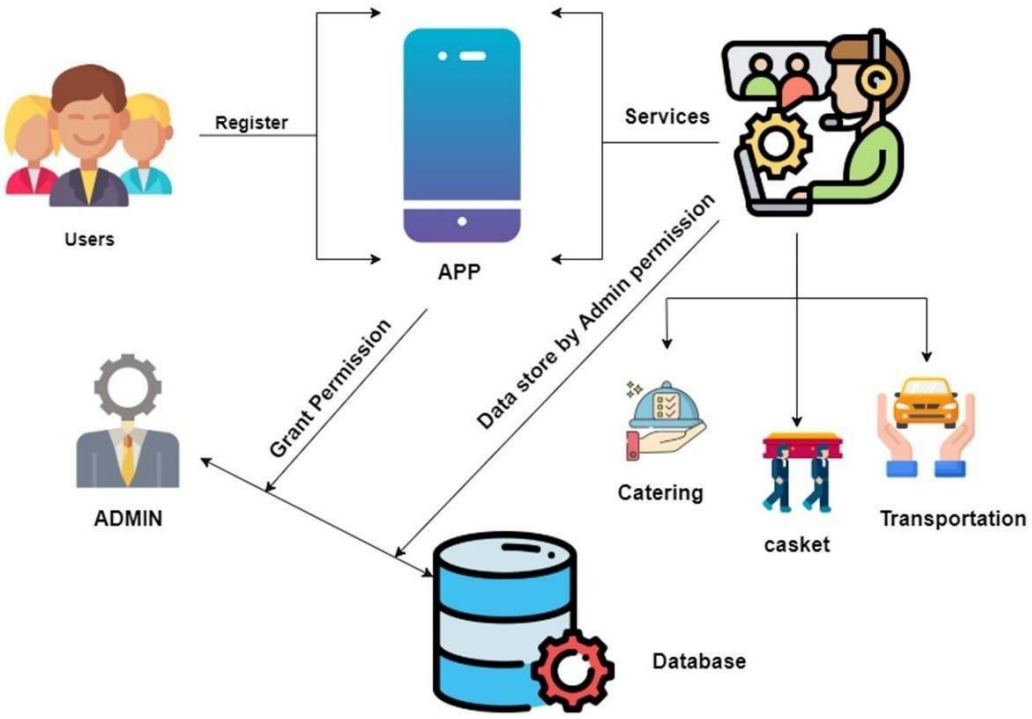

Figure 2.1:Architecture Diagram of the System

2.5. Operating Environment:

Operating environment for the Last Honor app is listed below:

Operating System: Window 10 and Android Operating system

Database: MySQL

Platform: Android Studio is used with java language. Front end will be designed in xml and backend will be designed in Java.

2.6. Current System

Khan Funeral Home, Bougheed flowers and Sendoff funeral app are the existing applications providing their services for the arrangements of the funeral activities. The basic purpose of the existing systems is to make the funeral event easier for the families at their difficult times.

Khan Funeral Home is providing services to only Muslim families. While this system doesn't show the obituaries list for whom it had provided its services before.

Bougheed flowers are providing their services to all regardless of religion. But their services are same for everyone. They are bound to their fixed service if any specific requirements are needed to be done on religion basis they are unable to meet any specific customer requirements. ***Sendoff funeral*** app provides different packages offering their services to the customers. But their packages and costs are fixed. Packages will be costly if anyone doesn't want to avail all the services offered in a single package.

Chapter 3: Requirement Analysis

This chapter will cover the details about functional and Non-functional requirements of the proposed system and in which that requirement satisfies the system needs. Moreover, we will also discuss various use cases along with use case specifications and how the system interacts with those use cases.

3.1. Functional Requirements

In order to allow users to get maximum benefits out of the system various functional requirements are being required. These functional requirements enable system users to interact to the system with easy to access and users' friendly interface.

The functional requirements of the proposed system are as follow.

- The system will allow clients (those who will get funeral services) and services providers to get themselves registered so that they can have more functionalities of the system.
- The system will authenticate the user through login functionality.
- The system will display different funeral packages in gallery view.
- The system will allow the users to select already available packages or to customize their own packages.
- The system will provide the booking of services (including burial, transport, catering, sitting etc.)
- The system will allow the users to make payments through easypaisa and jazz cash.
- The system will provide clients with option of visual tracking so that clients can track their services.
- The system will help users to communicate with service providers according to their locality.
- The system permits Admin to define package services, modify the already present packages, can delete them, and view the data and requirements of the clients.

3.2. Non- Functional Requirements

Some of the non-functional requirements of the system are given below.

- The system should be able to handle the concurrent requests from different users.
- The system should provide confidentiality for user data.

- The system should be stable and reliable enough to handle the exceptions.
- The system should be available for 24/7 of the time to handle the concurrent request of users.
- The system should permit only authorize users to ensure its security.
- The system should be efficient enough to handle the concurrent request to the user.
- Interface and the system itself should be user friendly so that the customer will feel it easy to use.
- The system will authenticate the user by verifying the credentials to database.

3.3. Use Case Model

In unified modeling language the use case diagram is used to represent users' interaction with the system. These users are named as actors and various use case notions and symbols are used to represent system, user interaction. The Use case diagram is the graphical representation of the interaction of various actors with the system. The use case diagram for funeral services application shows the two primary actors which are given below as

- Customers/ Users
- Service Providers

The use case of the system has been shown through the ovals. Include and Extend use cases are used to describe the necessary use cases depend upon other use case for their fulfillment and the independent one.

Use case diagram for the Last honor (funeral services application) is given below.

3.3.1. Use Case Diagram

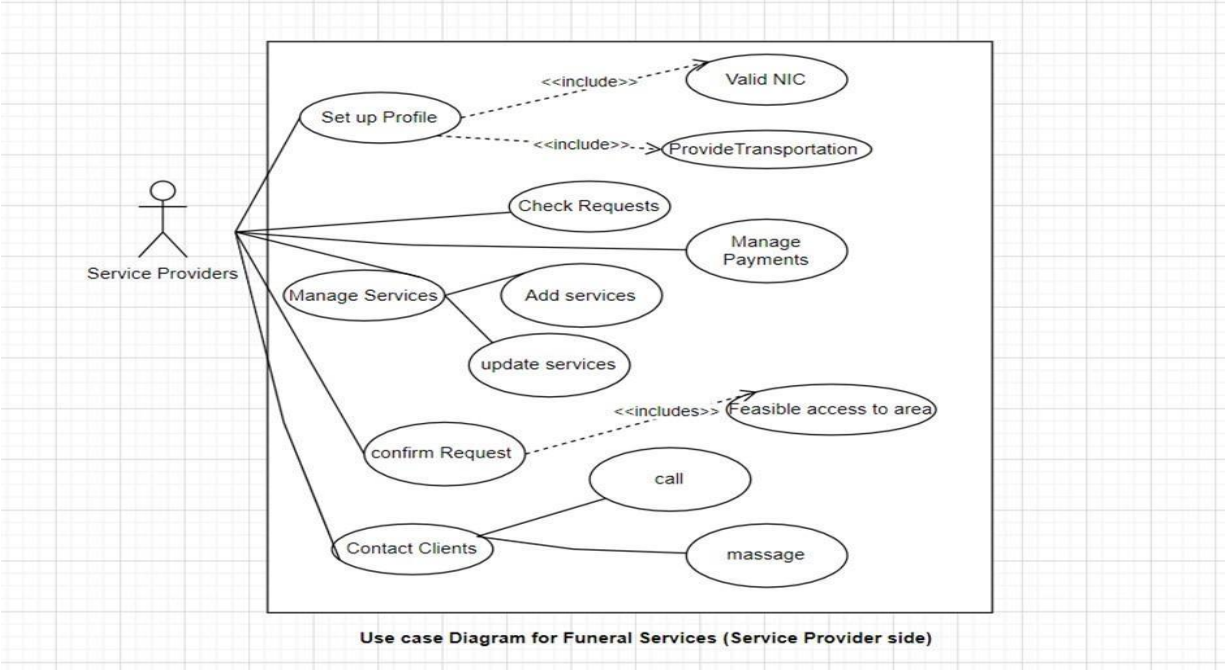

Figure 3.1: Use case diagram service provider side

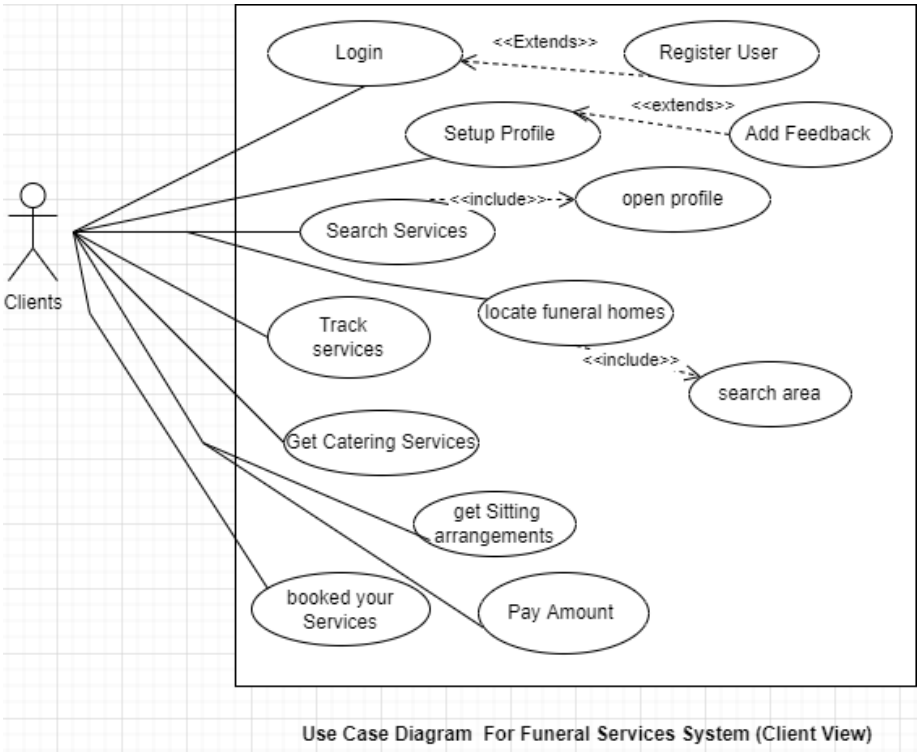

Figure 3.2 : Use case diagram client side

3.3.2. Actors Description

In the above-mentioned use case diagram, we have four main actors that are interacting with each other and the system.

The brief description of each actor is given below.

1. **Client:**

   Client is the primary actor that directly interacts with the system to get the funeral packages including various services like burial, catering, transport, sitting etc. The client can also get his/her self-registered and set up their profile so that booking and payment could be done accordingly.

2. **Admin:**

   Admin registers and authenticates himself. Also, He manages the database which contains information regarding different funeral services. He can also modify the packages detail.

3. **System:**

   System performs all the action that are being automated in our project. It displays available services detail, verifies package from clients and allows booking and payment for services.

4. **Database:**

Database stores all the information and data fetched through it as well.

4.3.3. Use Case Description

Authentication:

Use Cases	**Description**
Use Case ID:	ID-01
Use Case Name:	Authentication
Actors:	User, System
Description:	User will provide its credentials and authenticated by the system through database.
Trigger:	When user click on login app
Preconditions:	Username and password must be provided by the users.
Post-conditions:	User will login successfully.
Normal Flow:	Credentials will be entered by users Credentials will be authenticated from database of the system User will be successfully login
Alternative Flows:	If user is not already registered, then user will first sign up User will then provide credentials User will again be authenticated through database
Exceptions:	If user will be not authenticated, error message will be appeared.
Special Requirements:	None
Assumptions:	None
Notes and Issues:	User will have only 3 attempts for login. After 3 attempts user will have to wait for 30 seconds to retry.

Table 1.1: Use Case for Authentication

Booking:

Use Case ID:	ID-02
Use Case Name:	Booking
Actors:	User, System
Description:	System will display packages and services and user will book already available options or can customize their own. System will show payment option and after payment system will send confirmation message to the user.
Trigger:	When user want to place a booking.
Preconditions:	User should be authenticating. User should have Wi-Fi connection.
Post conditions:	The system will book the funeral packages.
Normal Flow:	User will first login then request for booking System will display services and user will book. System will show payment option and after payment system will send confirmation message to the user.
Alternative Flows:	None
Exceptions:	if user cancel the booking, then payment will not be refundable
Special Requirements:	None
Assumptions:	Android app will be connected to the system.
Notes and Issues:	if user want to book services, then user must be sent request for booking.

Table 1.2: Use Case for Booking

Payment:

Use Case ID:	ID-03
Use Case Name:	Make Payment
Actors:	System, user

Description:	The client selects desire services. The system confirms the selected option and user will pay.
Trigger:	When user select package or services.
Preconditions:	Booking must be done.
Post conditions:	System offers services
Normal Flow:	The reach the system. Select the desire package communicates with service providers. System verifies it and booking can be made.
Alternative Flows:	Services are not selected Service providers are not available. Booking is not made.
Exceptions:	If wrong information is given no service would be provided.
Special Requirements:	None
Assumptions:	None

Table 1.3: Use Case for Payment

3.4. Chapter Summary

The chapter covers the details of functional and non- functional requirements of the Last Honor application. Moreover, it also describes the way primary and secondary actors interacting with the system and the brief details about use case description of Authentications, booking and payment.

Chapter 4: Design and Architecture

Design and Architecture of the system is an important feature for the development and understanding of the system. Therefore, the architecture diagram of the system is as following.

4.1. System Architecture:

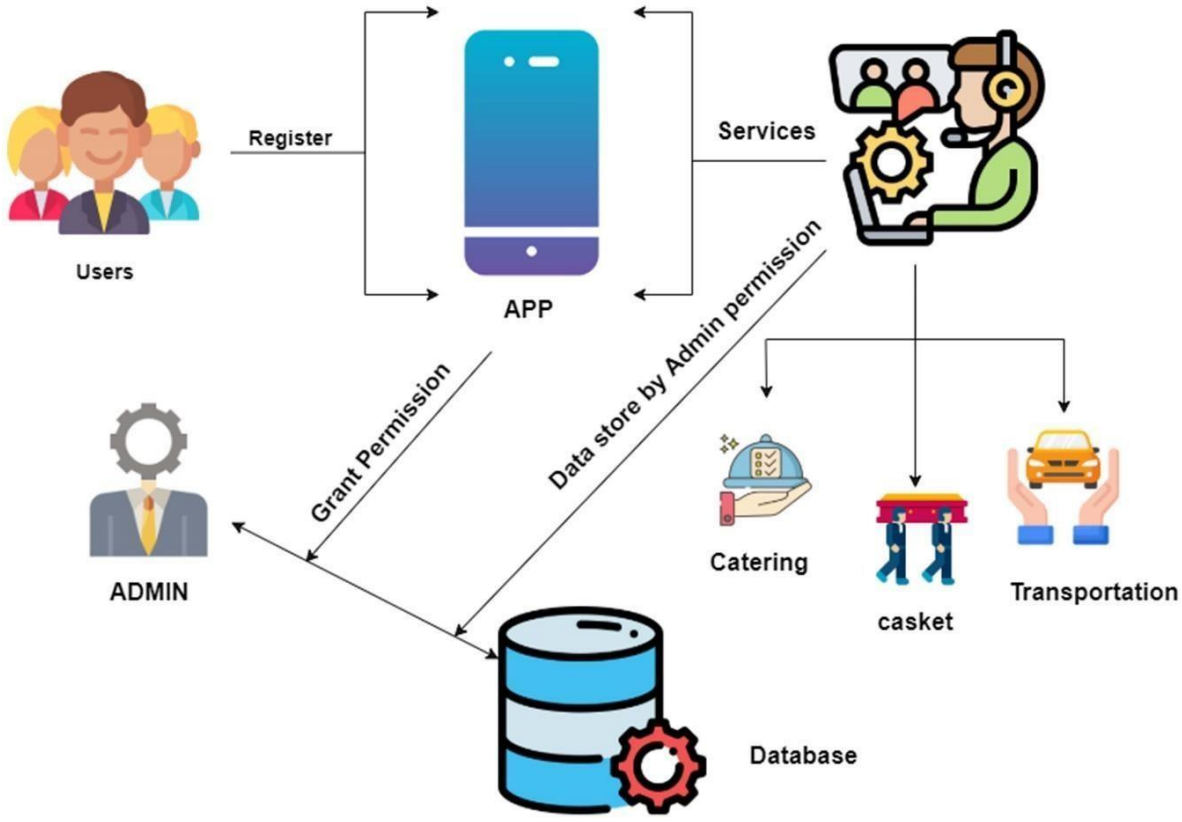

Figure 4.1: Architecture Diagram of the Proposed System

4.2. System Design:

Systems layout is the manner of defining factors of machine-like components, modules, structure and their interfaces and records for a machine primarily based totally on the desired requirements. The cause of the System Design manner is to offer enough unique records and facts approximately the machine.

Following is the system design of the Last Honor Application.

4.3. UML Structural Diagrams

Below diagrams are the UML diagrams of the system.

4.3.1. Component Diagram:

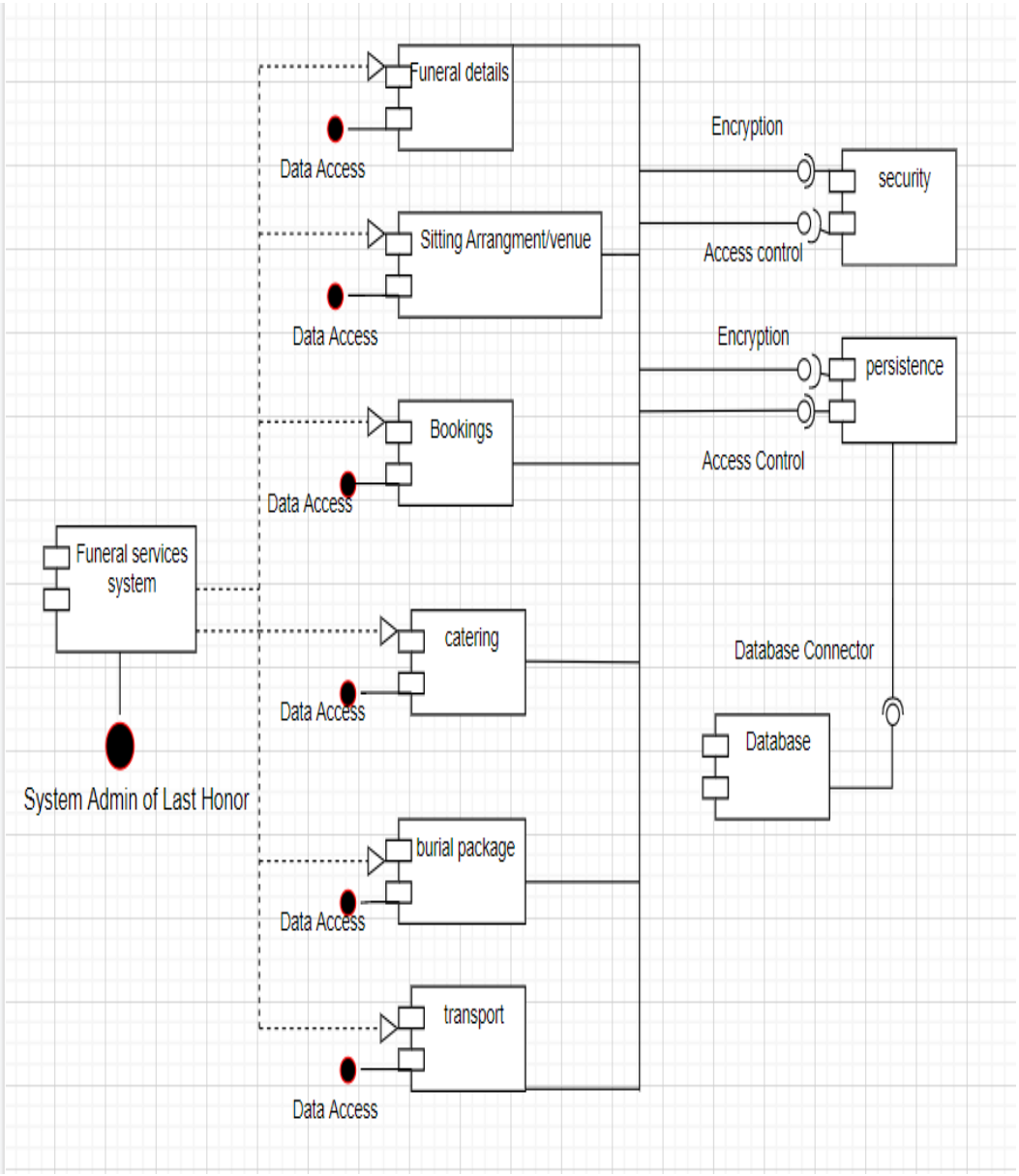

Figure 4.2:Component Diagram of the System

4.3.2. Package Diagram:

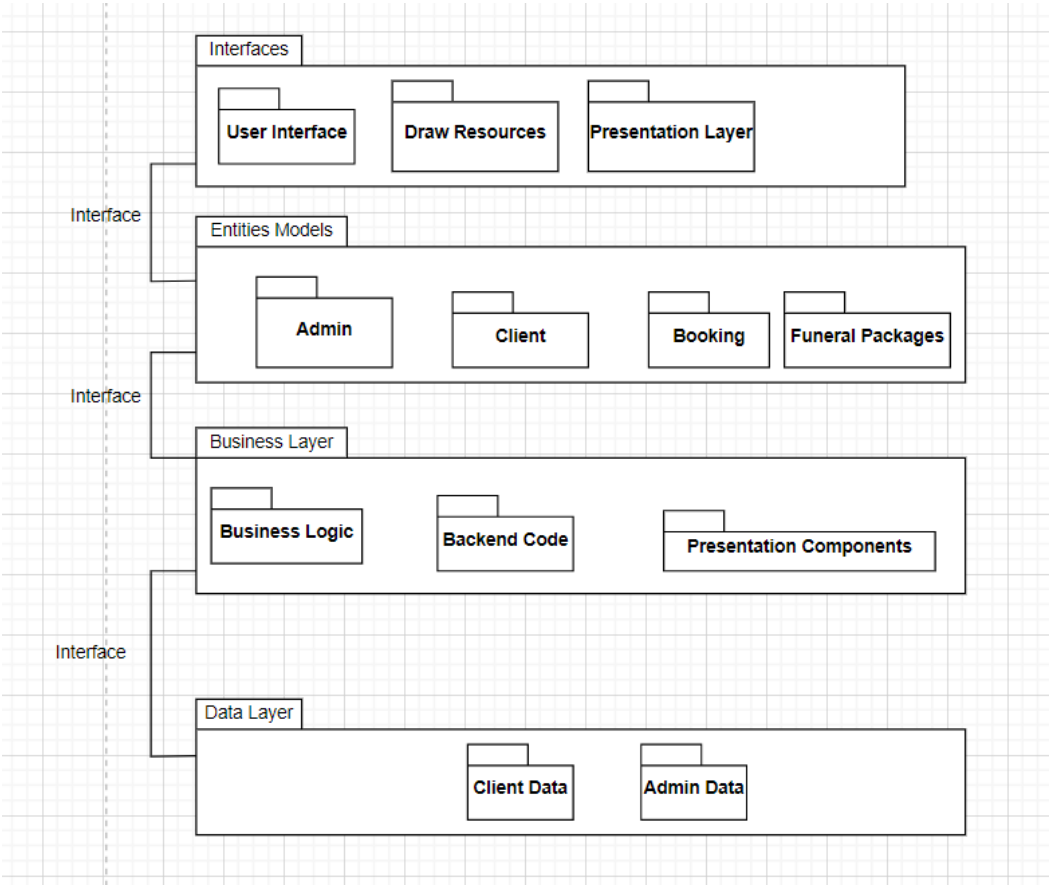

Figure 4.3:Package Diagram of the System

4.3.3. Deployment Diagram:

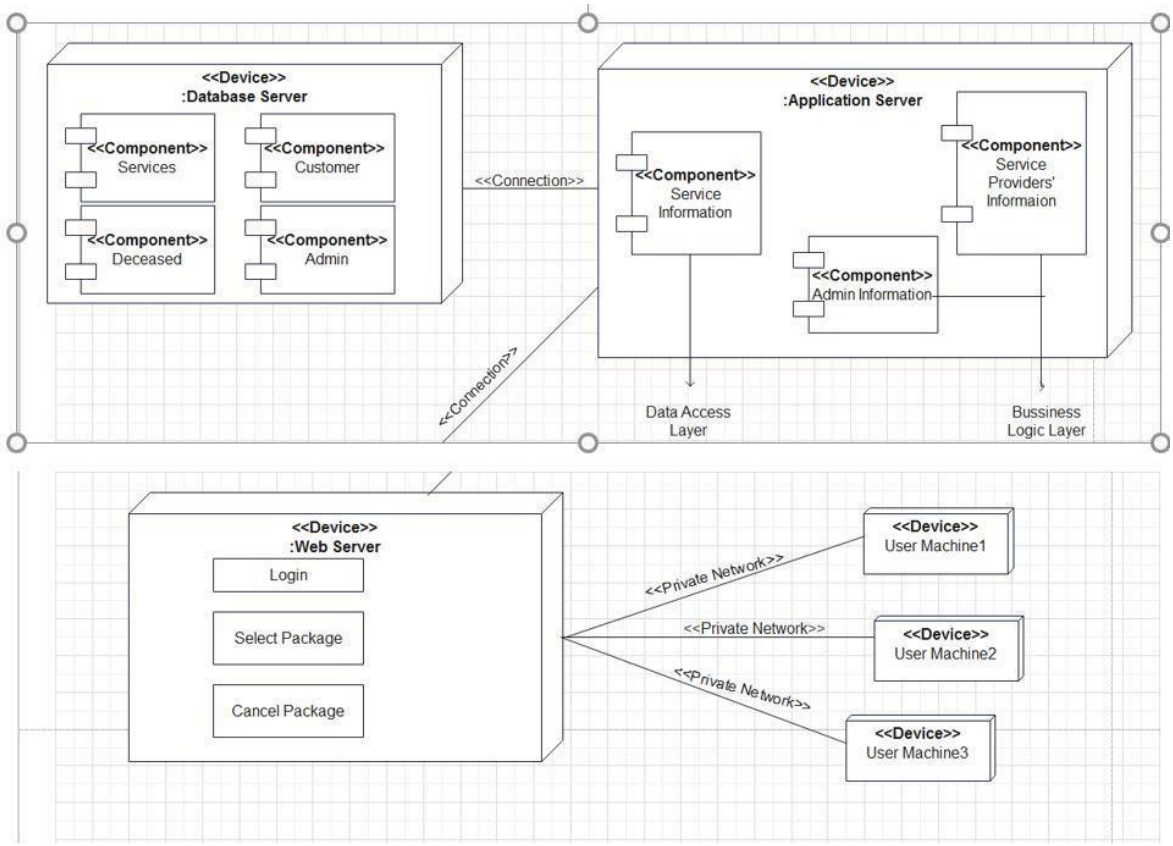

Figure 4.4:Deployment Diagram of the System

4.4. UML Behavioral Diagrams:

4.4.1 State Flow Diagram:

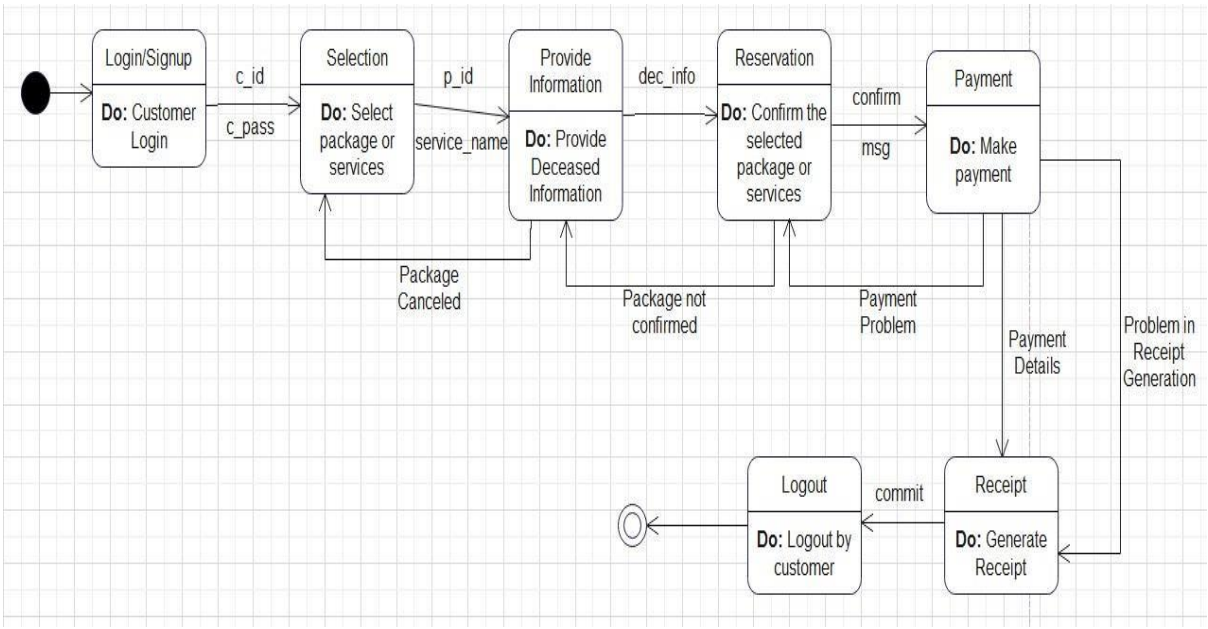

Figure 4.5: State Flow Diagram of the System

4.4.2 Activity Diagram:

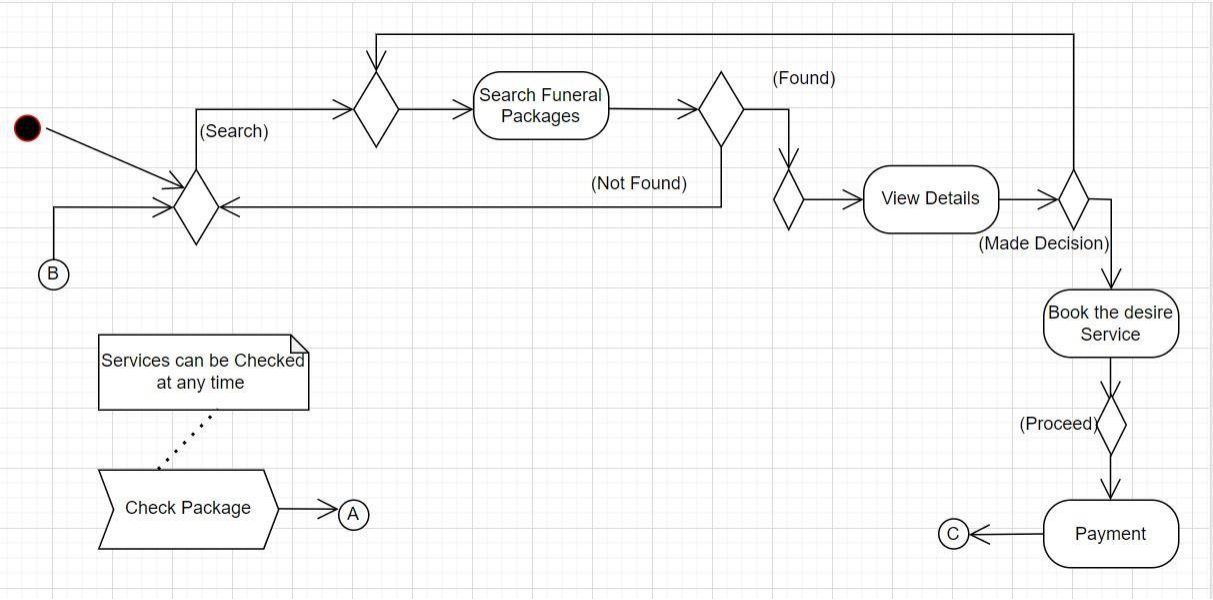

Figure 4.6: Activity Diagram of the System

4.5. UML Interaction Diagrams

4.5.1. Sequence Diagrams

4.5.1.1. Sequence of Sign up

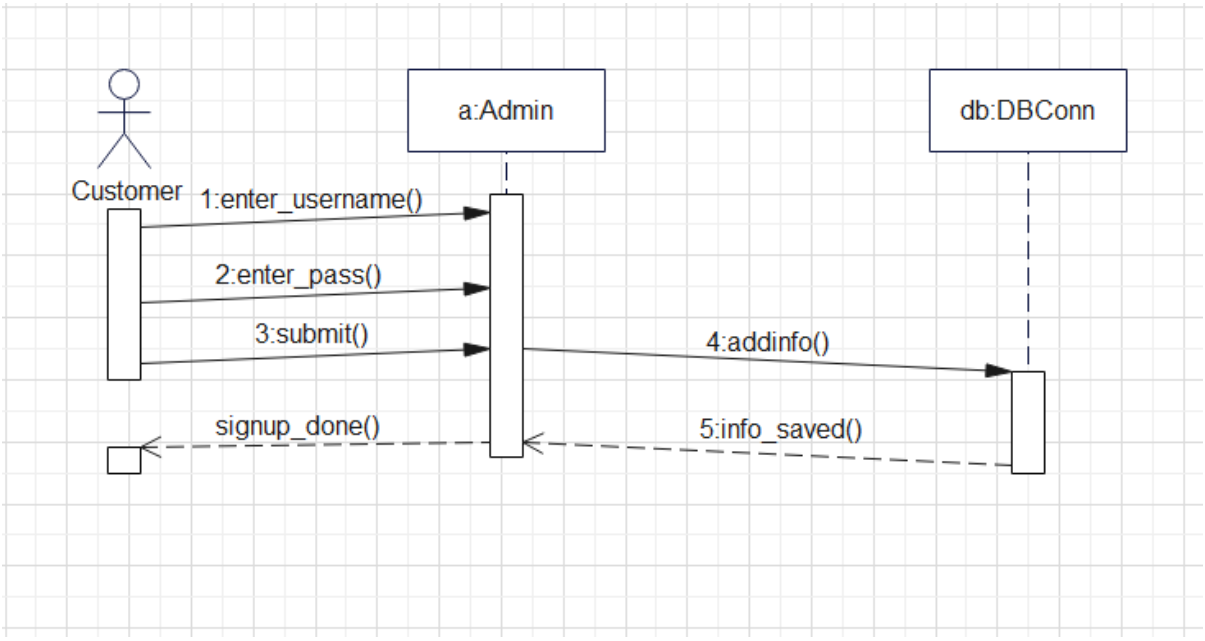

Figure 4.7: Sign up Sequence of system

4.5.1.2. Sequence of Login

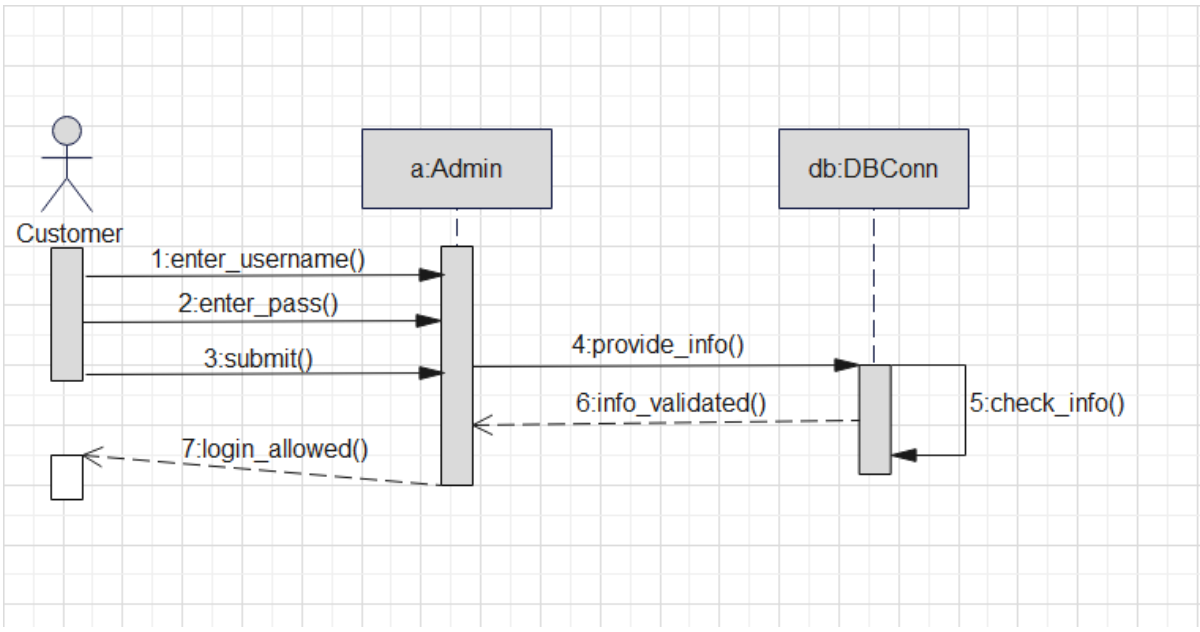

Figure 4.8: Login Sequence of System

4.5.1.3. Sequence of Services Selection

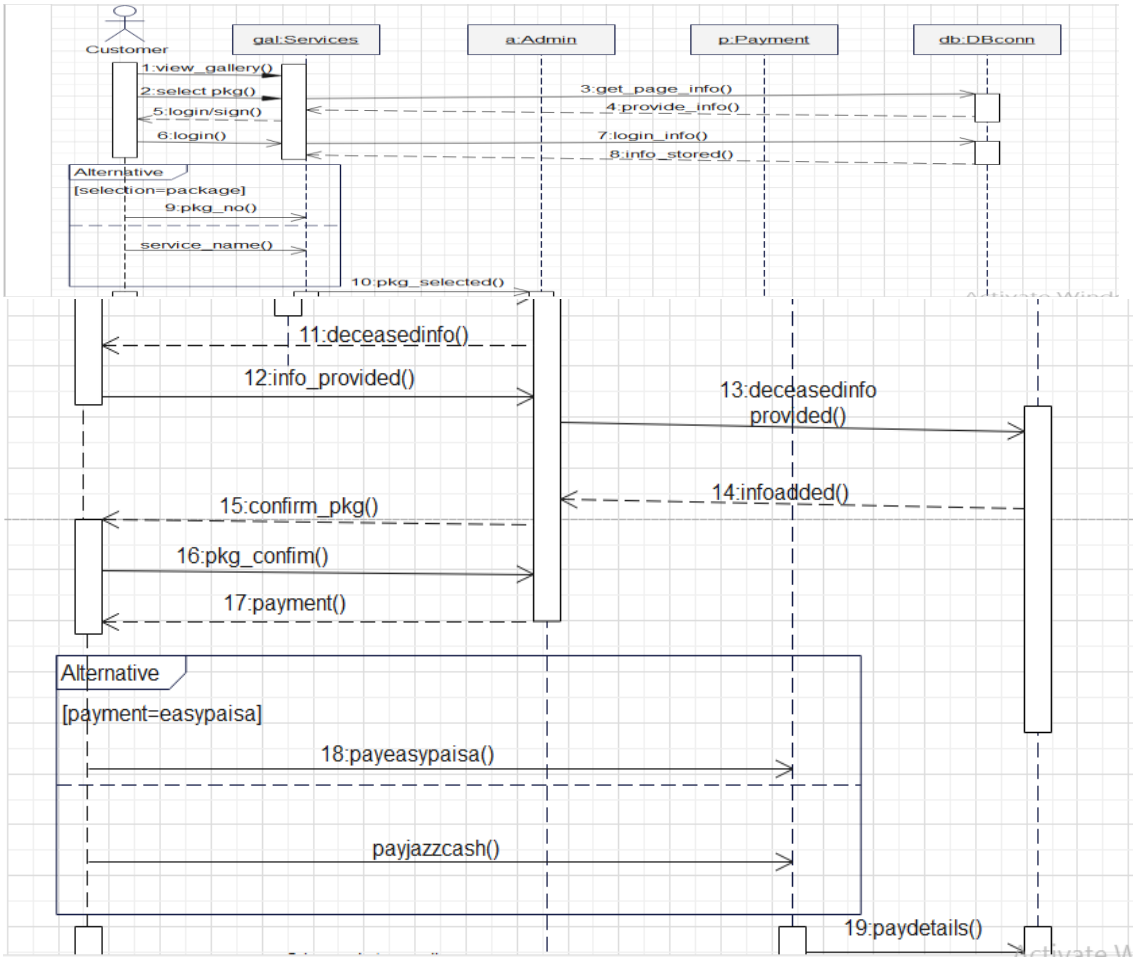

Figure 4.9: Sequence of services Selection

4.5.1.4. Sequence of Package Cancellation

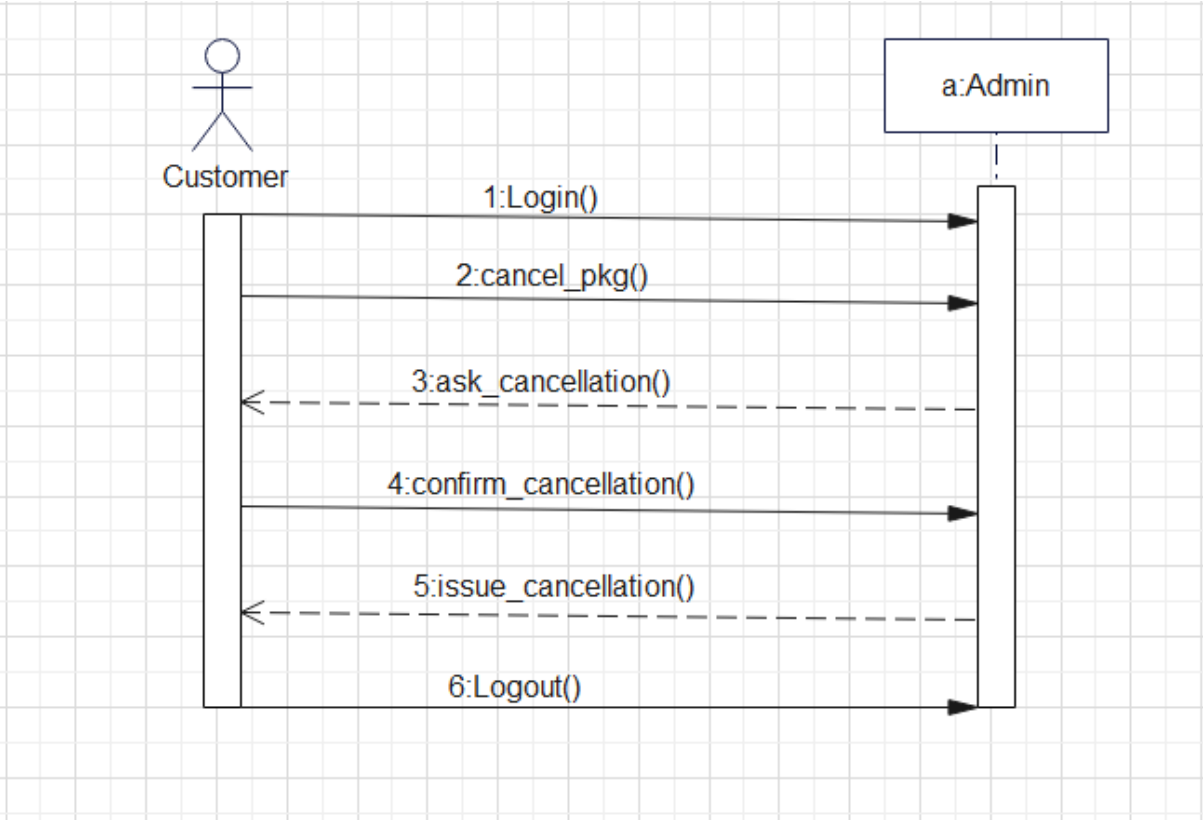

Figure 4.10: Sequence of Package cancellation

4.6. Class Diagram:

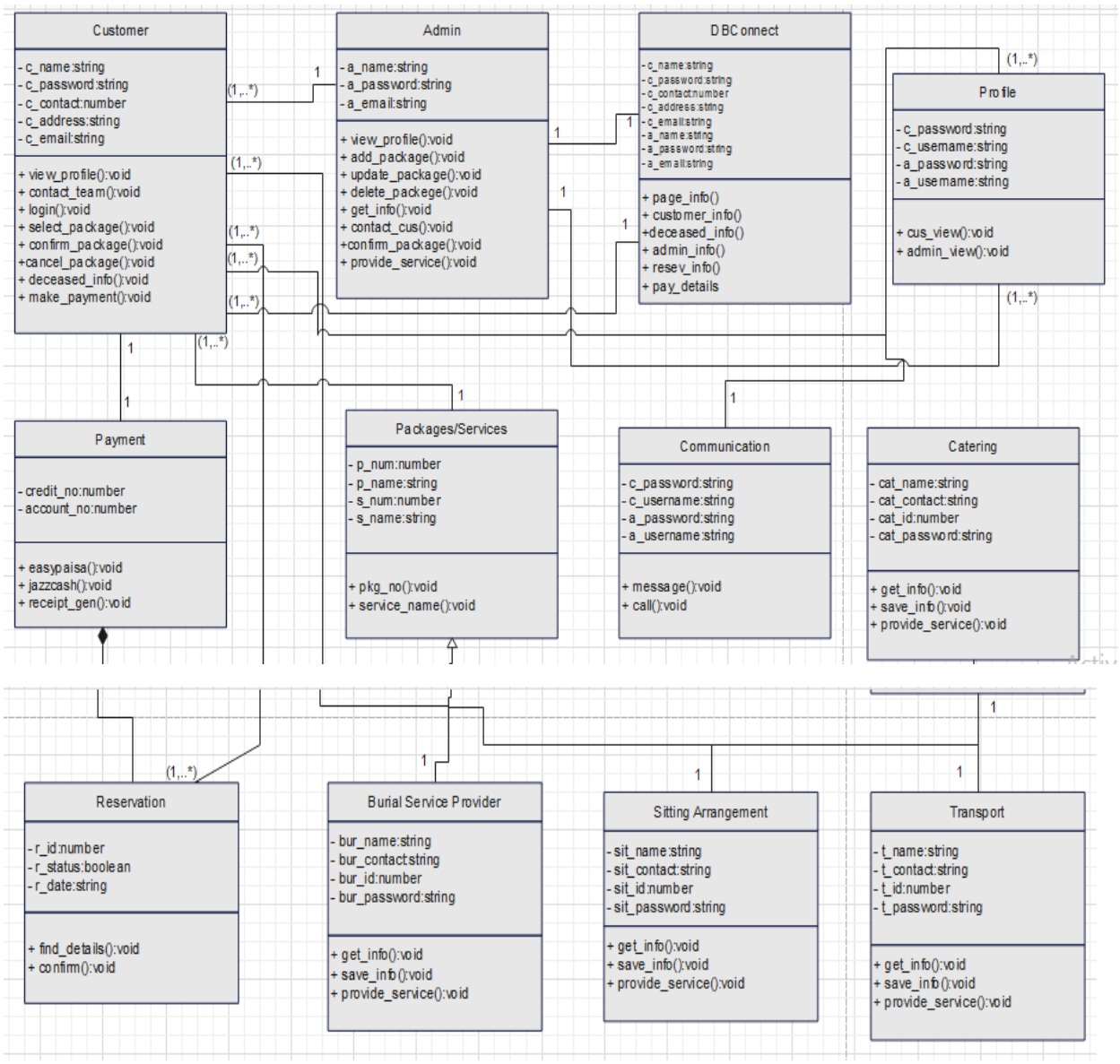

Figure 4.11: Class Diagram of the system

Chapter 5: Implementation

5.1. Component Diagram

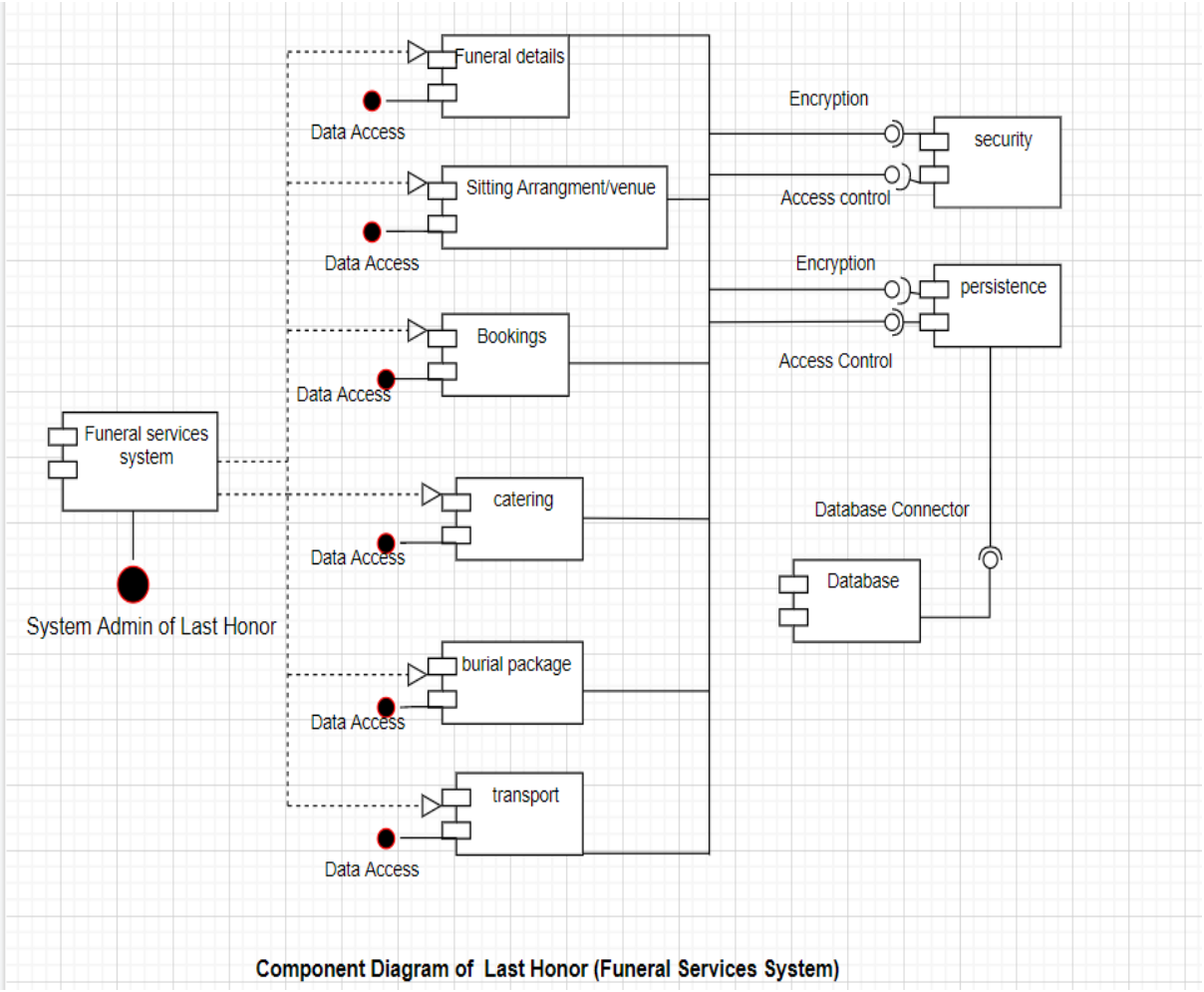

Figure 5.1: Component Diagram

The given component diagram shows the Funeral Services Module of the application. It shows the working of the application in this particular module and which components involved in this module. The working of the different components shows the entire module and specifies the interaction between them. There are ten components in the given diagram. Each component is represented by a rectangle. These components shows the different services offered in the application and how these services would be availed. Each component requires data access which is represented by dotted lines. Funeral services system is the component which provides data access to each component and it acts like an admin of the system. These components provide

security by providing end to end encryption so that data could be maintained and there would be no chance of data breaching. Another factor is the persistence which means that each component needs consistent data. Data should be provided on the required time and there should be no hurdle or error in the flow of the data. Consistent data should be provided to each component whenever it is needed. Encryption and access control are the two interfaces which provide security and persistence to the components. Persistence component is connected with database with database connector interface to provide consistent data to multiple components of the system. Each component is connected with security and persistence with the two interfaces i.e. encryption and access control.

5.2. Network and Protocol Choice

5.2.1. TCP/IP:

TCP/IP stands for Transmission Control Protocol/Internet Protocol. It is a suite of communication protocols used to interconnect network devices on the internet. TCP/IP is also used as a communications protocol in a private computer network.

The TCP/IP protocol suite functions as an abstraction layer between internet applications and the routing and switching fabric.

TCP/IP specifies how data is exchanged over the internet by providing end-to-end communications that identify how it should be broken into packets, addressed, transmitted, routed and received at the destination. TCP/IP requires little central management and is designed to make networks reliable with the ability to recover automatically from the failure of any device on the network.

5.2.2. HTTP:

HTTP is the foundation of data communication for the World Wide Web, where hypertext documents include hyperlinks to other resources that the user can easily access. The Hypertext Transfer Protocol (HTTP) is an application layer protocol in the Internet protocol suite model for distributed, collaborative, hypermedia information systems.

5.2.3. IP:

The Internet Protocol (IP) is a protocol or set of rules, for routing and addressing packets of data so that they can travel across networks and arrive at the correct destination. Data traversing the Internet is divided into smaller pieces, called packets. IP information is attached to each packet, and this information helps routers to send packets to the right place. Every device or domain that connects to the Internet is assigned an IP address, and as packets are directed to the IP address attached to them, data arrives where it is needed.

5.3. User Interface

5.3.1. Splash Screen:

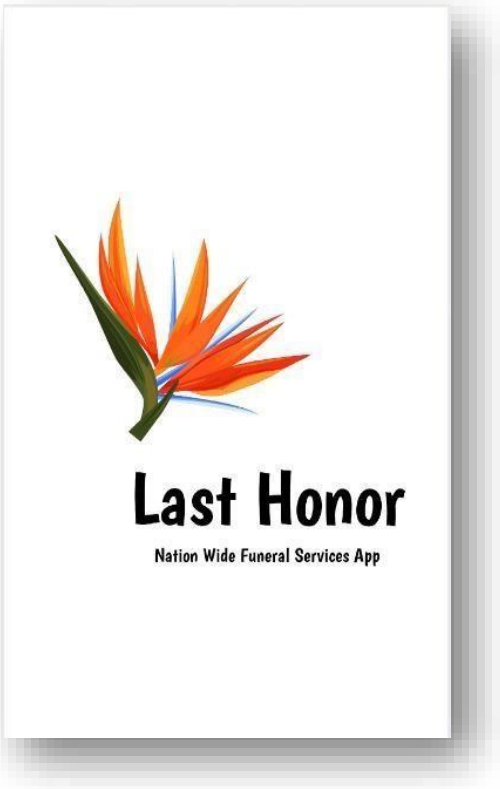

Figure 5.2: Splash Screen

This is the splash screen of Last Honor funeral application which appears at the beginning of the application for 3 seconds.

5.3.2. Startup Screen:

Figure 5.3: Startup Screen

Startup Screen appears after splash screen showing the options of signup and login for the customers. The customers coming for the first time will have to sign up for the application to become a member or the customers who are already a member can login to the application to proceed.

5.3.3. Signup Screen:

Figure 5.4: Signup Screen

Signup Screen shows the details to make an account for the new customers.

These details may include:

- ✓ Full Name
- ✓ Email
- ✓ Password
- ✓ Confirm Password

All the given fields should be filled by the user otherwise account would not be made and a message would be generated to fill the required field. Password and confirm password field should be matched to proceed further.

After checking the given validations and when user press ***Signup*** button, the user account will be created successfully.

5.3.4. Login Screen:

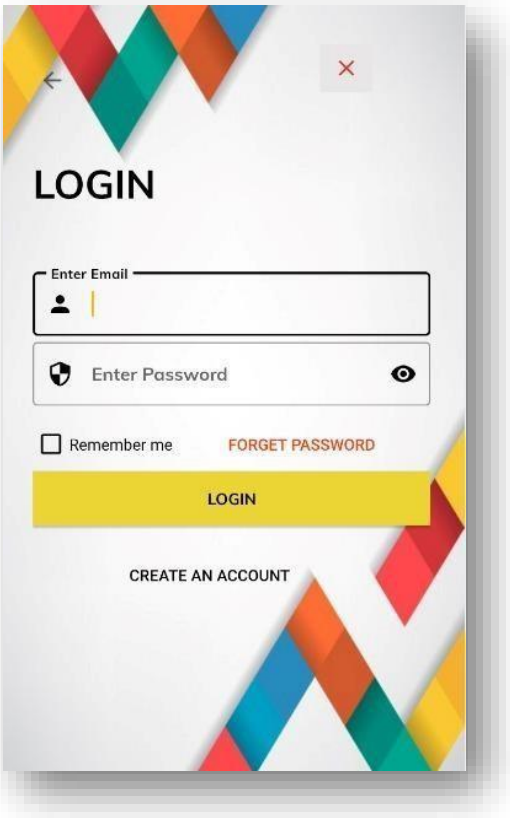

Figure 5.5: Login Screen

If a customer selects login option then this screen will be shown to the customer to login and view the entire application. Login screen would ask the following credentials to enter from the user.

- ✓ Email
- ✓ Password

If the correct email and password are entered the customer is directed to the next screen.

5.3.5. Forgot Password:

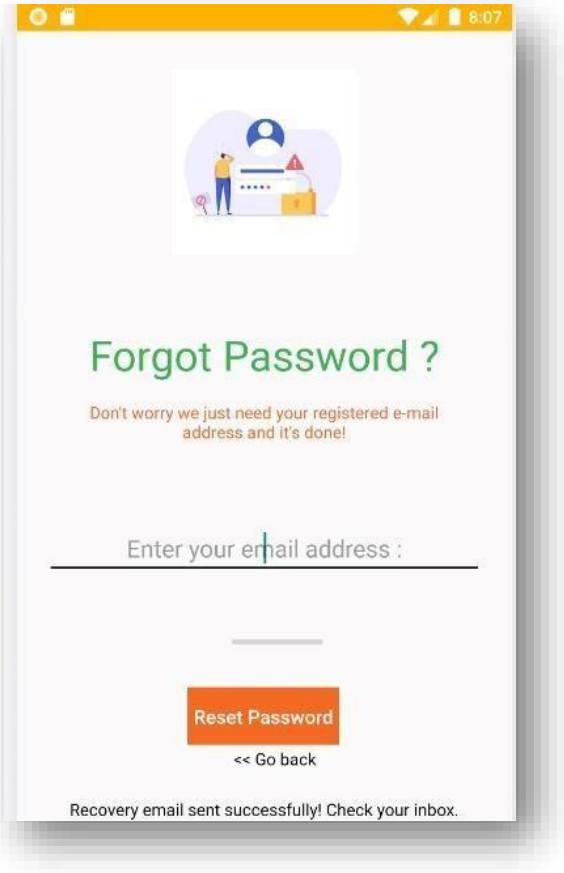

Figure 5.6: Forget Password

If a user forgets his password at the login time he can reset his password by giving the email address. Forgot Password screen appears when the user click on the forget password link available in the login screen.

5.3.6. Navigation Bar:

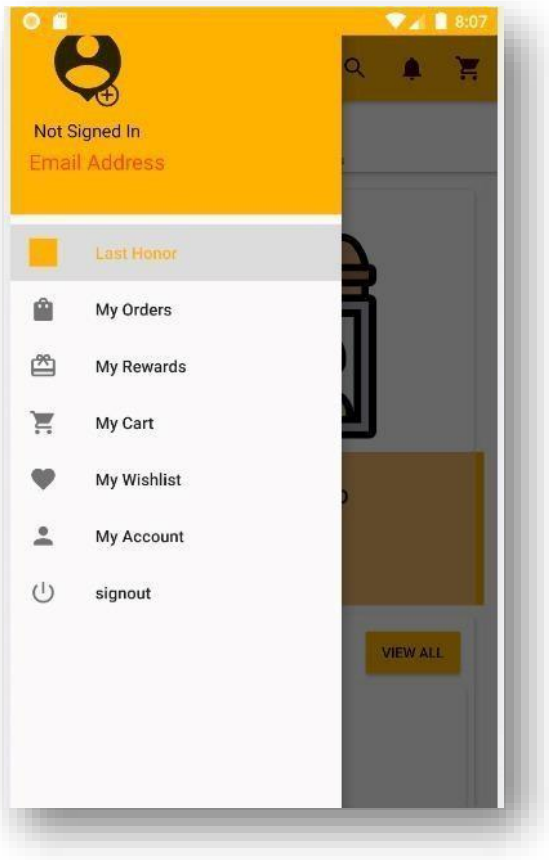

Figure 5.7: Navigation Bar

Navigation bar appears when the user sign up or login for the application. The navigation bar shows multiple options for the user.

- ✓ My Order (shows the details of the orders that are made by the customer)
- ✓ My Reward
- ✓ My Cart (shows the selected packages in the customer's cart)
- ✓ My Wish list
- ✓ My Account (shows the account details of the customer)
- ✓ Signout (signout option quit from the app and return to the login screen)

5.3.7. Funeral Packages:

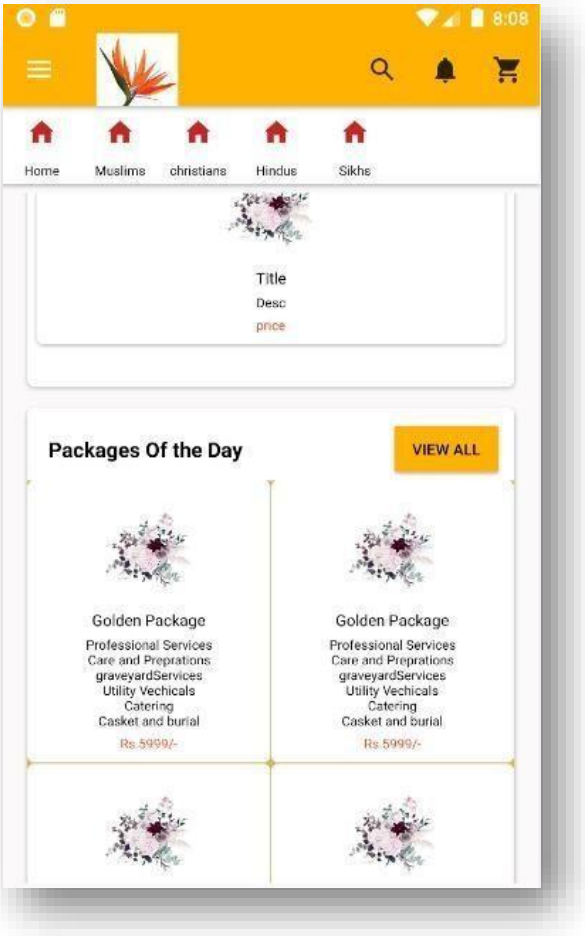

Figure 5.8: Packages

Packages screen shows the multiple packages that are being offered by the application. Each package contain different funeral services that customers may want to avail. Also each package carries a different cost to meet maximum people budget requirement. These packages include:

- ✓ Golden Package
- ✓ Silver Package
- ✓ Platinum Package

Chapter 6: Testing and Evaluation

6.1. Verification

It is the process of checking that a software system meets specifications and requirements so that it fulfills its intended purpose. The process of evaluating software to determine whether the products of a given development phase satisfy the conditions imposed at the start of that phase.

6.1.1. Functional Testing

Functional Testing is a type of testing that seeks to establish whether each application feature works as per the software requirements. Each function is compared to the corresponding requirement to ascertain whether its output is consistent with the end user's expectations.

Sign Up:

Tested By	Bushra Younas
Test Type	Unit testing
Test Case Number	01
Test Case Name	Sign up
Test Case Description	This test case will check sign up form details
Items To Be Tested:	
1. Personal Data 2. Complete Information 3. Password Field	
Specifications:	
Inputs	**Expected Result/Output**
Email, Username and Password are given for the signup process.	Successfully signed up message would be displayed.
Procedural Steps:	
1. Fill up the required fields.	

2. Click on Signup Button

Table 1.4: Unit Testing for Sign up

Login:

Tested By	Bushra Younas
Test Type	Unit testing
Test Case Number	02
Test Case Name	Login
Test Case Description	This test case will check login form details
Items To Be Tested:	
1. Email 2. Password Field	
Specifications:	
Inputs	**Expected Result/Output**
Email and Password are given for the signup process.	Successfully logged in message would be displayed.
Procedural Steps:	
1. User will enter Email and Password	
2. On clicking login button user will be logged in	
3. If not able to login, then first have to create an account	

Table 1.5: Unit Testing for Login

Forget Password:

Tested By	Bushra Younas
Test Type	Unit testing
Test Case Number	03
Test Case Name	Forget Password
Test Case Description	This test case will check forget password form details
Items To Be Tested:	
1. Email	
Specifications:	
Inputs	**Expected Result/Output**
Email is given for password recovery process.	Successfully reset password message would be displayed.
Procedural Steps:	
1. User will enter email and press reset button	
2. A dialog box appears confirming that the user wants to reset password or not	
3. On selecting yes password will be reset	

Table 1.6: Unit Testing for Forget Password

Reservation:

Tested By	Bushra Younas
Test Type	Unit testing
Test Case Number	04
Test Case Name	Reservation
Test Case Description	This test case will check reservation form details
Items To Be Tested:	
1. Package Name 2. Services Details 3. Required Information	
Specifications:	
Inputs	**Expected Result/Output**
All the necessary information is given for reservation process.	Reservation has been made successfully message would be displayed.
Procedural Steps:	
1. User after login will move towards Reservation page where he can see all the details.	
2. On clicking confirm package button app will ask user to confirm reservation.	
3. If user clicks confirm package, then popup message displayed.	

Table 1.7: Unit Testing for Reservation Process

Payment:

Tested By	Bushra Younas
Test Type	Unit testing
Test Case Number	05
Test Case Name	Payment
Test Case Description	This test case will check payment form details
Items To Be Tested:	
1. Payment Gateway 2. Account Details 3. Required Information	
Specifications:	
Inputs	**Expected Result/Output**
All the necessary information is given for payment process.	Payment has been made successfully message would be displayed.
Procedural Steps:	
1. After confirm package, system ask user to make payment.	
2. If user wants to cancel reservation, then before making payment user will cancel his/her reservation.	
3. If user cancels reservation, then system will go back to Reservation page.	
4. If user makes payment, then system confirms his/her reservation and display popup message.	

Table 1.8: Unit Testing for Payment Process

Admin:

Tested By	Bushra Younas
Test Type	Unit testing
Test Case Number	06
Test Case Name	Admin
Test Case Description	This test case will check admin form details
Items To Be Tested:	
1. Username 2. Password	
Specifications:	
Inputs	**Expected Result/Output**
Username and password is given to check user details	Successfully check all the details of the customers.
Procedural Steps:	
1. Admin can check and search user details	
2. Details can be searched by name and email	

Table 1.9: Unit Testing for Admin

6.1.2. Static Testing

Static Testing is a software testing technique which is used to check defects in software application without executing the code. Static testing is done to avoid errors at an early stage of development as it is easier to identify the errors and solve the errors. It also helps finding errors that may not be found by Dynamic Testing.

6.2. Validation

Validation is a dynamic mechanism of testing and validating if the software product actually meets the exact needs of the customer or not. The process helps to ensure that the software fulfills the desired use in an appropriate environment.

The process of evaluating software during or at the end of the development process to determine whether it satisfies specified requirements.

The validation process involves activities like unit testing, integration testing, system testing and user acceptance testing.

6.3. Usability Testing

Usability Testing is a type of testing that is done from an end user's perspective to determine if the system is easily usable. Usability testing is generally the practice of testing how to easy design is to use on a group of representative users. A very common mistake in usability testing is conducting a study too late in the design process.

Usability testing is a non-functional testing technique that is a measure of how easily the system can be used by end users. It is difficult to evaluate and measure but can be evaluated based on the below parameters:

- ✓ Levels of Skill required learn/use the software. It should maintain the balance for both novice and expert user
- ✓ Time required to get used to in using the software
- ✓ The measure of increase in user productivity if any
- ✓ Assessment of a user's attitude towards using the software

Usability Testing Process:

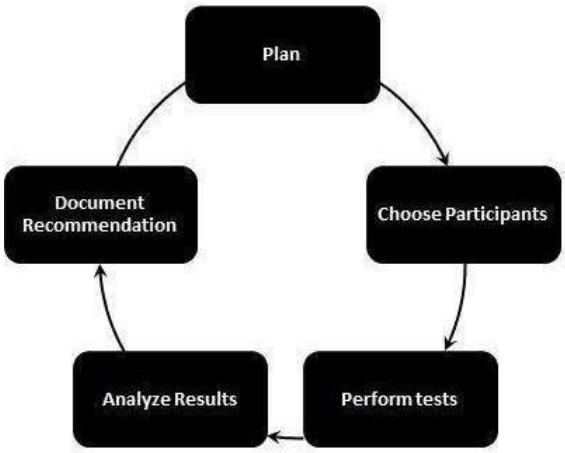

Figure 6.1: Usability Testing Process

6.4. Module / Unit Testing

Unit or module testing is a testing technique using which individual modules are tested to determine if there are any issues by the developer himself. It is concerned with functional correctness of the standalone modules.

The main aim is to isolate each unit of the system to identify, analyze and fix the defects.

Unit Testing Techniques:

- ✓ **Black Box Testing:**

  Black box testing involves testing a system with no prior knowledge of its internal workings. A tester provides an input, and observes the output generated by the system under test.

- ✓ **White Box Testing:**

White box testing is an approach that allows testers to inspect and verify the inner workings of a software system, its code, infrastructure, and integrations with external systems.

- ✓ **Gray Box Testing:**

  Gray box testing is a method you can use to debug software and evaluate vulnerabilities. In this method, the tester has limited knowledge of the workings of the component being tested.

A software application is composed of a number of software modules that are integrated together to form a software application. A module itself is a program written in a particular language that is composed of subroutines, subprograms, classes, procedures, and functions.

Module testing is primarily focused on testing software modules or sub-program instead of testing the entire software application at once.

Unit Testing Life Cycle:

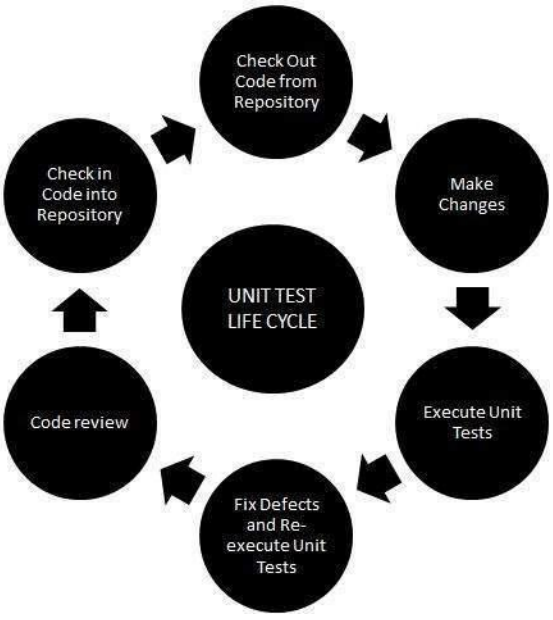

Figure 6.2: Unit Testing Life Cycle

6.5. Integration Testing

Integration testing is the process of testing the interface between two software units or module. It's focus on determining the correctness of the interface. Integration testing is the second level

of the software testing process comes after unit testing. The focus of the integration testing level is to expose defects at the time of interaction between integrated components or units.

6.6. System Testing

System Testing includes testing of a fully integrated software system. System Testing is a black box testing technique performed to evaluate the complete system the system's compliance against specified requirements. In System testing, the functionalities of the system are tested from an end-to-end perspective.

System Testing is usually carried out by a team that is independent of the development team in order to measure the quality of the system unbiased. It includes both functional and Non-Functional testing.

6.7. Acceptance Testing

Acceptance testing is formal testing based on user requirements and function processing. It determines whether the software is conforming specified requirements and user requirements or not. It is conducted as a kind of Black Box testing where the number of required users involved testing the acceptance level of the system.

There are various forms of acceptance testing:

- ✓ User acceptance Testing
- ✓ Business acceptance Testing
- ✓ Alpha Testing
- ✓ Beta Testing

6.8. Stress Testing

Stress testing a Non-Functional testing technique that is performed as part of performance testing. During stress testing, the system is monitored after subjecting the system to overload to ensure that the system can sustain the stress.

The stress testing includes the testing beyond standard operational size, repeatedly to a breaking point, to get the outputs.

The recovery of the system after stress phase is very critical as it is highly likely to happen in production environment.

6.9. Hardware Configuration for Testing

Hardware configuration testing is usually carried out in labs, where we have physical machines with various hardware connected to them.

Every time a build is released, the software is required to be installed in all the physical machines to which the hardware is attached, and the test suite is required to be executed on each and every machine to confirm that the application is working fine.

6.10. Evaluation

Evaluation is a process of judging how well the Software's original intended goals have been achieved.

Software Testing is a method of finding out whether a software is working as it should, e.g. giving correct output, working fast enough, handling expected loads, responding to user inputs properly.

6.11. Deployment

Deployment is the mechanism through which applications, modules, updates, and patches are delivered from developers to users. The methods used by developers to build, test and deploy new code will impact how fast a product can respond to changes in customer preferences or requirements and the quality of each change.

Software deployment is the process that makes software available for use. Every software is unique in its functionality and use cases, so the process of deployment has to be customized according to the particular specifications and characteristics of that software.

6.12. Maintenance

Software maintenance is a part of the Software Development Life Cycle. Its primary goal is to modify and update software application after delivery to correct errors and to improve performance.

Software Maintenance is an inclusive activity that includes error corrections, enhancement of capabilities, deletion of obsolete capabilities, and optimization.

Purpose:

- ✓ Correct errors
- ✓ Change in user requirement with time
- ✓ Changing hardware/software requirements
- ✓ To improve system efficiency
- ✓ To optimize the code to run faster
- ✓ To modify the components
- ✓ To reduce any unwanted side effects.

Thus, the maintenance is required to ensure that the system continues to satisfy user requirements.

Chapter 7: Conclusion and Future Work

7.1. Conclusion

Last Honor funeral application is the standalone system to provide funeral services to their users. It has three main components which are working to provide best funeral management through the proposed application.

These components are:

Admin (Admin manages the whole application and provides interaction between users and service providers.)

Service Providers (Service provides are providing their services through our application)

Customers (Users who booked packages and gets services from our platform)

The proposed application has three main modules including registration, booking and payment module.

7.2. Future Work

We are planning to do following advancements in our project in future.

- ✓ Providing services in all cities of Pakistan
- ✓ Reaching rural areas of the country with all the basic needs of the offered service
- ✓ Extension of the funeral application to connect maximum service providers across the country
- ✓ Improvements in the designing of the application for smooth working and interaction with the users

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