American International University-Bangladesh (AIUB)

Faculty of Science and Technology (FST)
Department of Computer Science (CS)

SDPM Group Project, Fall 2023

Project Title: Helpline Community Service for Bachelors

Section : B

Submitted by

Name	ID
Faisal, MD. Omar Faruk	20-43669-2
MD. Al Amin Molla	20-43231-1
Mosabbir Hossain	19-40432-1
Shabiha Parvin Shila	20-43065-1

Helpline Community Service for Bachelors

Introduction

The **Helpline Community Service** is an internet-based resource that helps single people find and lease apartments that fit within their budgetary constraints. Simultaneously, landlords have the ability to advertise their apartments within certain price ranges, according to the rental needs of bachelor renters. The primary aim of this project is to provide an online platform that facilitates the convenient rental of residential properties, as traditional methods of house renting are very burdensome and time-intensive. The purpose of this document is to provide a comprehensive description of the project's requirements, objectives, stakeholder analysis, and associated components. This paper is designed for those fulfilling the role of Project Manager, paper writer, or possessing a foundational understanding of UML diagrams. Sections 3 and 4 are specifically designated for the stakeholders, whilst the remaining sections are meant for the Project Manager.

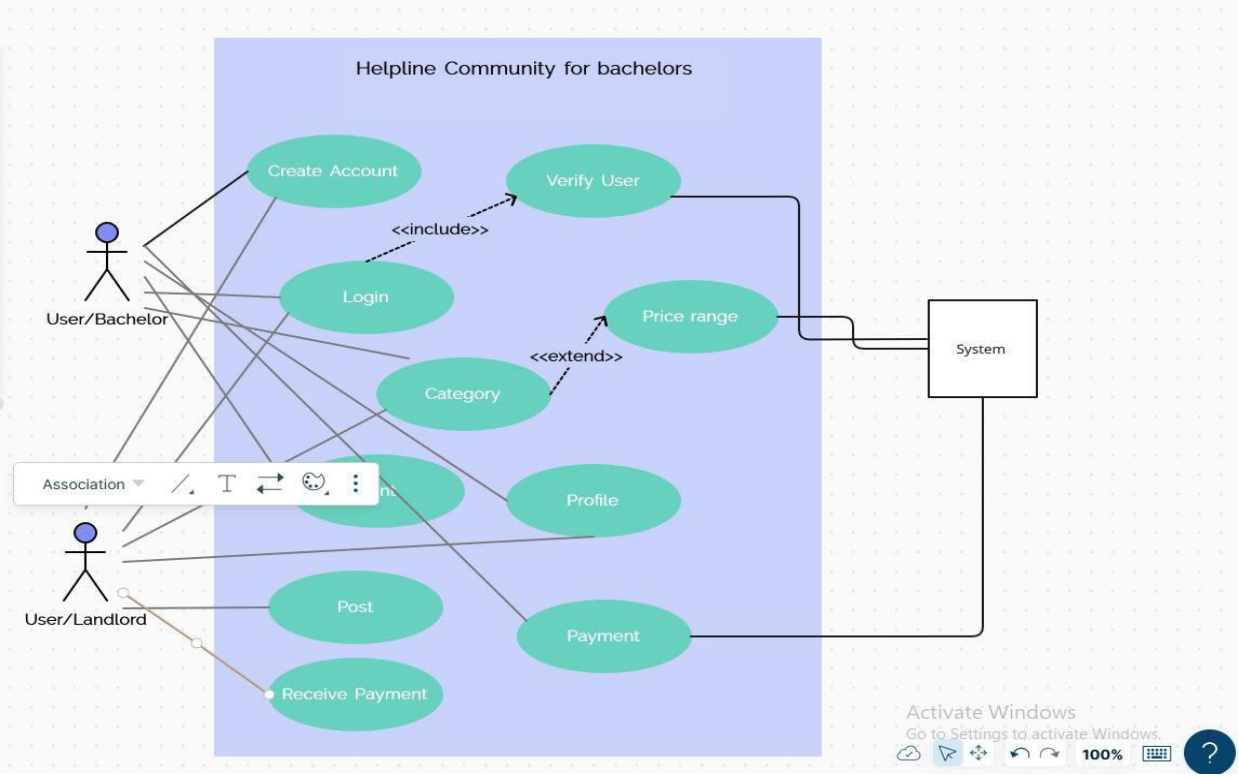
Objectives

- A login system for users
- Facilities for creating profiles.
- Facilities for checking balance.
- Payment Option (mobile banking or visa card).
- Bachelors rent from the category
- Landlord can post their flats and add prices.
- System maintenance and repair

Justification

The main goal of this project is to provide online service to the bachelors and the landlords to deal renting online.
This project provide a compelling online platform for bachelors seeking rental accommodations and landlords looking to manage their properties efficiently. The justification for this project is driven by the increasing demand for convenient and transparent online solutions in the real estate market. It addresses the specific needs of bachelors, simplifies the rental process, enhances transparency, and offers property management tools for landlords .
Online rental services have become more efficient and time-saving for bachelors and landlords. They allow users to easily find and rent flats, post their preferences, and view their properties. This eliminates the need for physical visits and saves money by reducing the distance between the customer and the landlord. This new approach streamlines the rental process and saves time and money. By doing so, it not only meets a growing market need but also creates a platform for profitable growth and sustainability in the digital rental industry.

Use case Diagram of the proposed systems



Stakeholder Analysis

A project is deemed successful when it achieves its objectives and meets or beyond the expectations of **the stakeholders**. These parties could be private citizens, companies that provide support to nonprofits, foundations, or state or federal financing bodies. A person, organization, or business that is directly involved in the project is considered an **internal stakeholder**. An **external stakeholder** is someone who is not directly involved in the project but who still has a big contribution to the project's successful conclusion.

Primary Stakeholders : Project managers, technicians, and employees are examples of primary(internal) stakeholders in our project.

Secondary Stakeholders: Investors, the CEO of the company, and clients are secondary(external)stakeholders in our project.

Feasibilty Study

Technical Requirements

Technical feasibility is a standard practice for companies to conduct feasibility studies before commencing work on a project. It is the formal process of assessing whether it is technically possible to manufacture a product or service.

It touches on things on our project like –

i) **Operating Systems**
ii) **Implementing Software Requirements**
iii) **Hardware Requirements**

Operating Systems: The software is compatible with any device that can run a web browser. The software can be used on Windows, iOS, Linux, and Android devices with any browser including Google Chrome, Internet Explorer, Mozilla Firefox, Brave and others.
Implementing Software Requirements: We require Visual Studio code for software in order to use Bootstraps, HTML, JavaScript, CSS, PHP, and XAMPP for web servers.
Because XAMPP is an open source, cross-platform, and simple-to-use program, it was chosen to build this system. For security reasons, it is therefore not advised for use on production servers. The database administrator password isn't there. As a result, hackers have easy access. Anyone with database access can see and copy private user and business data. One can access MySQL using a network. Additionally, the local mail server lacks security**.** The password for ProFTDP is well-known. XAMPP uses ProFTDP as its default File Transfer Protocol client. The password by default is "lampp." Users can so visit web pages with ease.
Hardware Requirements: We need both high configured Desktops and Laptops.

Financial Feasibility

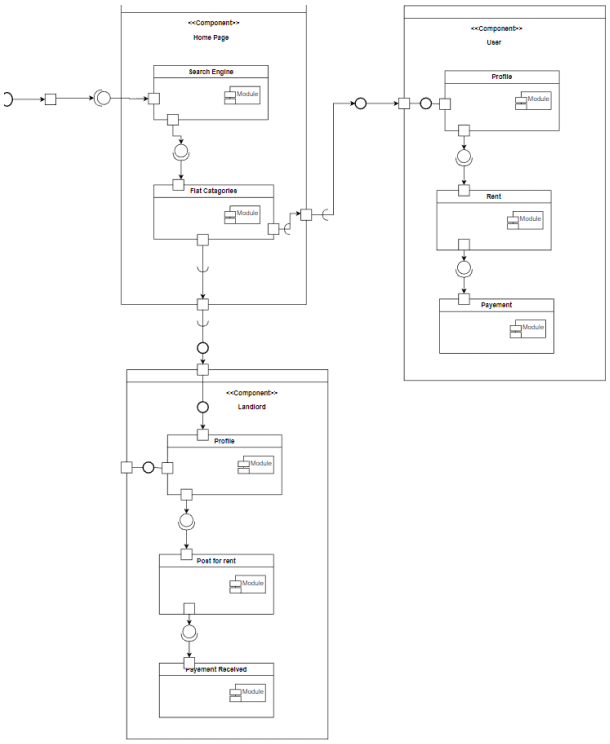
This review usually involves a project cost and benefit analysis in our project management system. Furthermore, it functions as an unbiased assessment of the project, enhances the project's legitimacy, and helps decision-makers ascertain the advantageous financial gains that the suggested project will yield for the company. ROI may help us obtain the greatest project, and as software engineers, it is our duty to do it well because it is crucial to the company's reputation.

Systems Component

Project Component: The main components are

- Analysis Component
- Design Component
- Test Component

To acquire more specialized activities, these modules or components might be split up into multiple sections. The **COCOMO** model provides **four** weeks.
System Component:



Process Model To Be Followed

We've decided to use the **Agile model** for our project since it is quick and adaptable and relies on **iterative development**. Agile techniques divide work into manageable chunks, or portions that don't directly require long-term planning. At the start of the development process, the requirements and scope of the project are established. Plans are outlined in advance with reference to the quantity, duration, and scope of each iteration. In the Agile process model, an iteration is a **small time "frame"** that usually lasts **one to four weeks**. By breaking the project up into smaller components, the overall project delivery time requirements are decreased and project risk is minimized. Before a working product is shown to the client, a team goes through the entire software development life cycle during each iteration, including planning, requirements analysis, design, coding, and testing. Consequently, we will have the chance to offer new features later on based on customer demand.
As a result, we've chosen to go with **Agile Model Method** for our project.

Effort Estimation

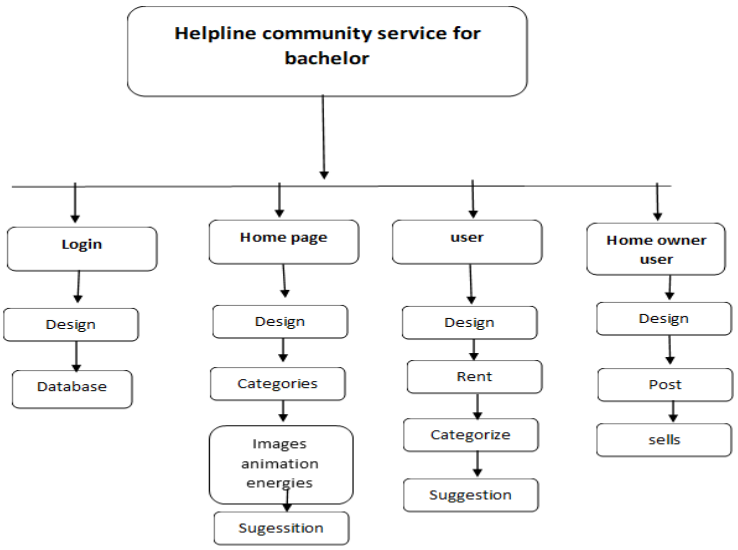


Fig: WBS(Work Breakdown Structure)

Projects	External Input type	External Output type	Internal file type	SLOC
A	8	11	12	4200
B	6	8	9	3800

Project Data

3 File or records

Internal File Type

1. User_Record
Data Types: (6 types of data) Sname, SId, SPhoneNo, SGender, STFType, SEmail.
2. LandLord_Record
Data Types: (6 types of data) Pmname, PmId, PmPhoneNo, PmGender, PmType, PmEmail.
3. Balance_Record
Data Types: (2 types of data) CurrentBalance,

BalanceHistory

External Input Types : (2 types) (total 12 data types)

User_Record, LandLord_Record

External Output Types: (2 types) (total 20 data types)

Transaction Report, Rent Report

From Albrecht's Function Point Analysis

	Number Record/File Types	**Number of data types**
File type Complexity	3	18(Average)
External Input type Complexity	2	12(High)
External Output type Complexity	2	20(High)

From Albrecht Complexity Multipliers

External User Type	**Multiplier**
External Input type	High (6)
External Output type	High (7)
Internal Internal type	Average (10)

Euclidean distance from the source and the target project, From Project A,
Square Root of ((10-12) ^2 +(6-8) ^2 + (7-11) ^2)

= 4.8

From Project B,

Square Root of ((10-9) ^2 +(6-8) ^2 + (7-8) ^2)

= 2.4

Project B has a Closer analogy than project A.

As we are following a Top-Down approach and Project A has 4200 lines of code, so by taking SLOC=4200, from COCOMO MODEL, (ORGANIC TYPE SOFTWARE)

The Formula of Effort estimation

Effort = PM = Coefficient<EffortFactor>*(SLOC/1000) ^P

EFFORT = 2.4*(4200/1000) ^1.05
=10.83

Development Time = DM = 2.50*(PM)^T
=2.50*(10.83) ^0.38
=6.2 Months (around 6 months)

Required Number of people = ST = Effort (PM)/Development Time (DM)
= 10.83/6
=1.81 ~ 2 people

Activity Diagram

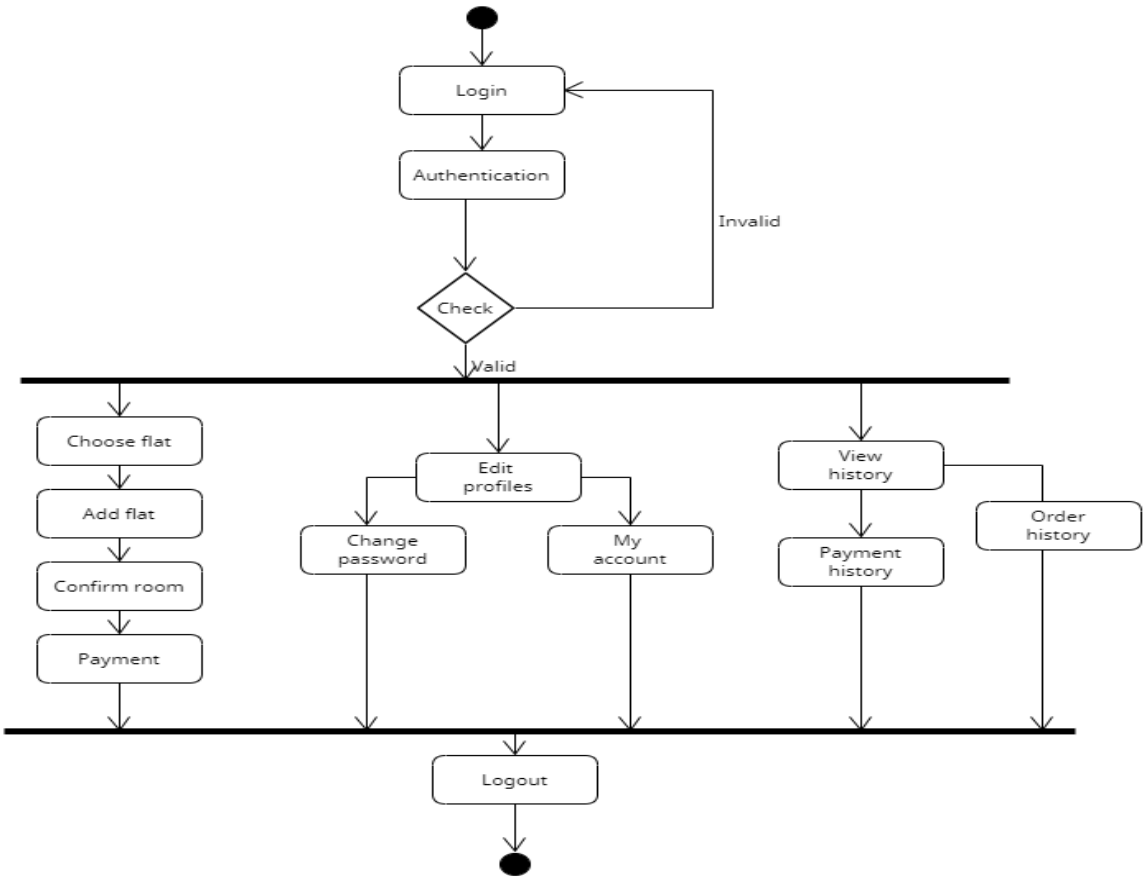


Fig: Activity Diagram

Project completion time 4 weeks = 28 days

Activities	Days	Precedents
A-Requirement	3	
B-Analysis	2	A
C – Software design	7	B
D – Code, Test	10	C
E – File Take-On	1	C
F – Write User Manuals	1	B
G– User Training Session	2	E, F
H – Install and Test System	2	D

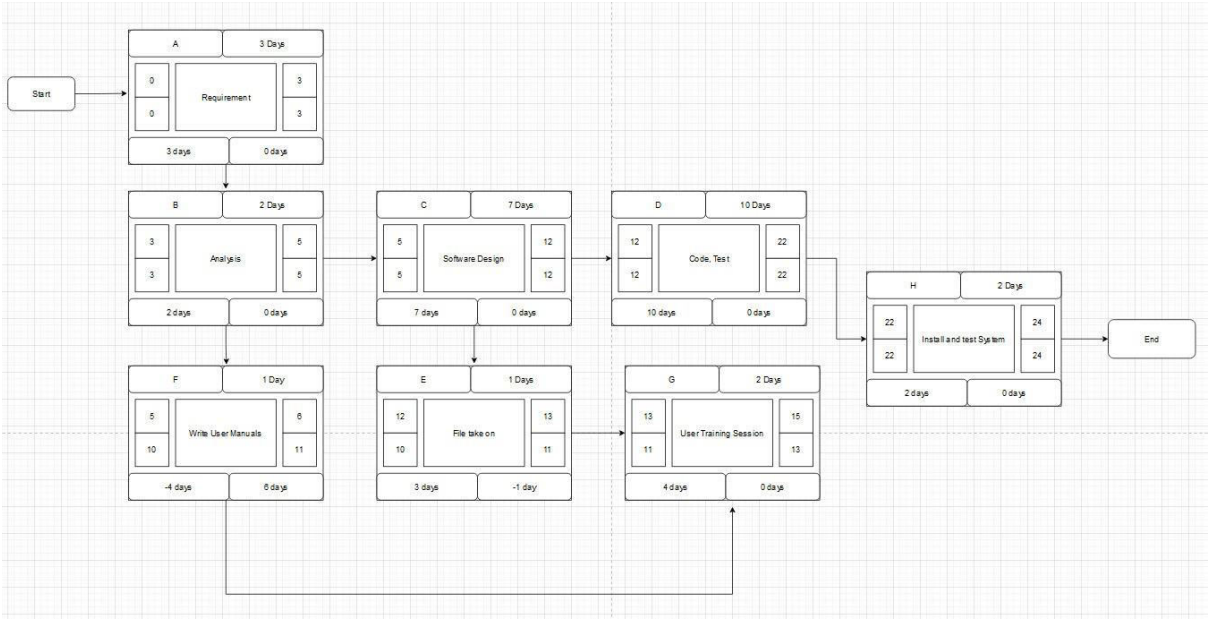


Fig: Network Diagram

Risk Analysis

Despite the fact that this is a software project, there are numerous possible hazards. The possible danger is:

1.Details regarding high-quality works
2. Information about deadlines
3. Insufficient storage
4. A limited budget
5. A lack of workers
6. Pandemic

Budget for the project

We have mainly four people for this project.
Programmer: 100000tk
Tester: 65000tk
Designer: 85000tk
Project Manager: 120000tk
Total: 370000 tk.

In order to finish this project, we will require **370000tk**.

Conclusion

As we can see from the above, the helpline community service is set up to provide clients with assistance in a straightforward manner. Since the project is using an agile methodology, it is quite brief. However, more needs to be added for the job to be done in the future according to the customer's requirements. We split a substantial amount of users outlining their roles and responsibilities. Plans called for finishing the remaining tasks. It has been demonstrated that a variety of tools, including network diagrams, budgets, feasibility studies, activity flowcharts, risk identification, and more, can provide valuable insights into a project's design and implementation. Thus, every topic is included in the software development project management outline.