



**American International University-Bangladesh (AIUB)**  
**Department of Computer Science**  
**Faculty of Science & Technology (FST)**

**ENABLED – A Disability Assistance System**

A Software Engineering Project Submitted  
 By

| <b>Semester: Summer_21_22</b> |                       | <b>Section: E</b> | <b>Group Number: 06</b>       |                         |
|-------------------------------|-----------------------|-------------------|-------------------------------|-------------------------|
| <b>SN</b>                     | <b>Student Name</b>   | <b>Student ID</b> | <b>Contribution (CO1+CO2)</b> | <b>Individual Marks</b> |
| 1.                            | MUBASHIR MOHSIN       | 20-42884-1        | CO1: b, c & CO2: a, b         |                         |
| 2.                            | SAFUAN ALAM SAIFEE    | 20-41861-1        | CO1: a, b & CO2: b, c         |                         |
| 3.                            | MD. WASEK AL-AZAD     | 19-39381-1        | CO1: a, c & CO2: a, c         |                         |
| 4.                            | MD. TALHA RAHMAN KHAN | 18-36265-1        | CO1: b & CO2: b, c            |                         |
|                               |                       |                   |                               |                         |

The project will be Evaluated for the following Course Outcomes

|  |                    |  |
|--|--------------------|--|
| CO1: <i>Analyze</i> the impact of software engineering models over various context of software development to assess societal, health, safety, legal and cultural issues.  | <b>Total Marks</b> |  |
|  | [5 Marks]          |  |
|  | [5Marks]           |  |
| a. Project Background Analysis and feasibility (needs, goal, benefits, etc.)   | [5 Marks]          |  |
|  | [5Marks]           |  |
| c. Review of existing Studies and Relevant Example   | [5Marks]           |  |
| CO2: <i>Explain</i> appropriate software engineering model, project management roles and their skills in the context of professional engineering practice and solutions to complex engineering problems in a software development environment. | <b>Total Marks</b> |  |
|  |                    |  |
| a. Appropriate Process Model Selection and Argumentation with Evidence   | [5Marks]           |  |
| b. Evidence of Argumentation regarding process model selection   | [5Marks]           |  |
| c. Submission, Defense, Completeness, Spelling, grammar and Organization of the Project report   | [5Marks]           |  |

***Description of Student's Contribution in the Project work***

Student Name: MUBASHIR MOHSIN

Student ID: 20-42884-1

Contribution in Percentage (%): 30

**Contribution in the Project:**

- Project Proposal, Features, Background Analysis and Model
- Project Diagrams, Requirements and Components

\_\_\_\_\_Mubashir\_\_\_\_\_

Signature of the Student

Student Name: SAFUAN ALAM SAIFEE

Student ID: 20-41861-1

Contribution in Percentage (%): 30

**Contribution in the Project:**

- Project Planning, Analysis and Model
- Project Diagrams, Requirements and Components

\_\_\_\_\_Saifee\_\_\_\_\_

Signature of the Student

Student Name: MD. WASEK AL-AZAD

Student ID: 19-39381-1

Contribution in Percentage (%): 25

**Contribution in the Project:**

- Project Functionality, Arrangement and Hierarchy
- Project Diagrams, Requirements and Components

\_\_\_\_\_Wasek\_\_\_\_\_

Signature of the Student

Student Name: MD. TALHA RAHMAN KHAN

Student ID: 18-36265-1

Contribution in Percentage (%): 15

**Contribution in the Project:**

- Project Proposal, Model
- Project Diagrams

\_\_\_\_\_Talha\_\_\_\_\_

Signature of the Student

## **1. PROJECT PROPOSAL**

### **BACKGROUND**

A software system that assists disabled people to make their daily-basis work easier for them. The main users of the software system are the disabled people.

The root cause of this problem is mainly for the immobility of disabled people in our society. To make their life easier and socially active to participate normally with other people, this system will provide various features and facilities.

### **SOLUTIONS**

- A. The main objective of this project is to help the disabled people to conduct their daily life disputes more feasible. Features like - Emergency contacts, medical assistance, nearby restroom facilities, remote accessibilities, entertainment, financial assistance, e -commerce, home services etc.
- B. Remote accessibility for disabled people is the main focus of this software system. For disabled people in our society, remote accessibility is the prime method to lead their life in a conventional manner. Therefore, this software is very much feasible to meet the business objective.
- C. Remote accessibility is the functionality of accessing distant places or whereabouts in palm of hands. This requires to identify prime features with proper analysis and designs to implement a system that could be verified by iterative testing. As a result, remote accessibility makes it easier than ever for impaired people in our society to communicate and socialize.
- D. The system's primary target audience is disabled people, who require remote access to socialize more normally in today's world. Remote accessibility will give disabled people the privilege to connect with the outer world more conveniently.
- E. The contribution of this project to the advancement of scientific results is very pertinent, as this project aims to improve the difficult lives of disabled people by making them more flexible and interactive with the outside world.
- F. "Technology can systematize information concerning disability, simplifying the physician's access to such information for better diagnosis and decision-making," Harlaar and Lankhorst (1998) write. According to Shinohara and Tigwell (2019), "Everyone is affected by accessibility, but those who are most in need are individuals who are impaired. Technology combined with a variety of tools could be a game-changer for this community, allowing them to interact more with others around."
- G. The software "Wheelmate" and "Access Now" are well-known among the existing studies in the problem area. This program is mostly used to locate accessible locations on a map that a disabled person requires when they are outside of their house. However, this project is highly beneficial in addressing all of a disabled person's demands.

H. “Wheelmate” and “Access Now” only focuses on locating accessible area on a map for disabled people. But this proposed project will provide not only locating accessible areas but also many essential features like – emergency contacts, medical assistance, nearby restrooms, financial assistance, security assurance, e-commerce, reservation service, entertainment and many more.

## 2. SOFTWARE DEVELOPMENT LIFE-CYCLE

### **Project Environment**

This project is people-based since helping disabled individuals is its primary objective. As a result, all the fundamental needs are typically listed in the project, and only minor iterations are needed to test them all. Additionally, user input assists in the project's ongoing improvement.

### **Project Suitability**

A small team was required to develop this project since the system is primarily test-driven and the requirements are well defined. This project can be first developed with the first set of fundamental requirements, then improved incrementally over multiple iterations. Consequently, a trial-based approach with well-established specifications will work for this project's workflow.

### **Project Model Proposal**

The Extreme Programming (XP) Process Model appears to be more appropriate and assessable to develop this project in view of the project's suitability and effort estimation facts. Pair programming is used in the XP process paradigm, and testing-based requirement implementation ensures that requirements integrate quickly.

### **Model Analysis**

The XP process model is an Agile approach comprised of successful development techniques to achieve client satisfaction. This process model's phases all typically follow successful processing procedures. The first stages of the project include analysis, exploration, and planning. With simple designs, the product is being concentrated on in brief, frequent releases. It is rigorously maintained in addition to integration, regular testing, refactoring, and feedback processing. In this regard, pair programming is one of the fundamental strategies to use. Collective code ownership and evolving process development ultimately satisfy the client.

### **Model Argument**

The XP process methodology is typically designed for and suitable for small development teams. Moreover, customer availability on-site is not encouraged nor planned. As requirements change and are refactored, XP emerges rather than instantaneously showcasing the efficiency of architecture and design.

## Project Model Roles

- **Customer:** Self-explanatory, the reason for the project. They decide what the project needs to do. They provide the user stories.
- **Programmer:** This is the person who –
  - Takes the stories that the customer comes up with
  - Creates programming tasks out of stories
  - Implements the user stories
  - Tests the code by unit
- **Coach:** The coach generally ensures that the project is on track and jumps in to help.
- **Tracker:** The Tracker makes specific enquiries to programmers at a set interval. Typically, he goes around checking the progress of programmers, offering help where needed in several ways.
- **Tester:** Runs functional tests. The tester does not run unit tests, which the programmers themselves run.
- **Manager:** The Manager in an Extreme Programming project is more like a scheduler, ensuring that the meetings occur as planned and ensuring the decisions taken during meetings are passed on to the appropriate person, more often than not, the Tracker.

## 3. SOFTWARE REQUIREMENT ANALYSIS

### FUNCTIONAL REQUIREMENTS

#### Homepage

##### A. Sign-up Requirements:

1. User has to put ‘Username’ (**\*Required**)
2. User has to create a new Password & Confirm the Password (**\*Required**)
3. User has to provide either NID/Passport No. or both (**\*Required**)
4. User has to provide an active Phone no. (**\*Required**)
5. User has to provide an Email (**\*Required**)
6. Name, DOB, Address and Blood Group will be auto generated from provided NID/Passport
7. User can optionally add: Disability Certificate, Social Security
8. User can Sign-Up using: Gmail, Facebook

## **B. Sign-in Requirements:**

1. User has to provide the registered Username/Phone no.
2. User has to provide the created Password for this system
3. User can connect with: Gmail, Facebook; to login
4. If user forgets the Password, they can recover this with email/phone no.

## **C. Privacy Policies, About Us, FAQs:**

1. **Privacy Policy:** User can see all the private and accessible data security documentations to ensure safety and enforcing laws of the software
2. **About Us:** User can see the general information of the software development team, software version, software objectives and purpose of the software
3. **Terms of Service:** User can see the terms and conditions of this software, requirements for getting services, paid services and property rights of the software
4. **Copyright & License:** User can see the copyright policy, patents and license of this software and other software included
5. **FAQ:** User should be able to see all the frequently asked questions and the solutions to it for

## **NON-FUNCTIONAL REQUIREMENTS**

1. **Scalability:** The software should be able to measure the system's ability to increase or decrease in performance and cost in response to changes the software requires
2. **Reliability:** The software should be able to perform its required functions under static conditions for a specific period
3. **Maintainability:** The software system should be able to modify to correct faults, improve performance or adapt to a changed environment
4. **Security:** The software should provide all the privacy policy, license, security and services as well as continues to function correctly under cyber attacks
5. **Manageability:** The software should be monitored and maintained to keep the system performing secure, and running smoothly
6. **Data Integrity:** The software should be able to storing data a database, data warehouse, data mart and other construct

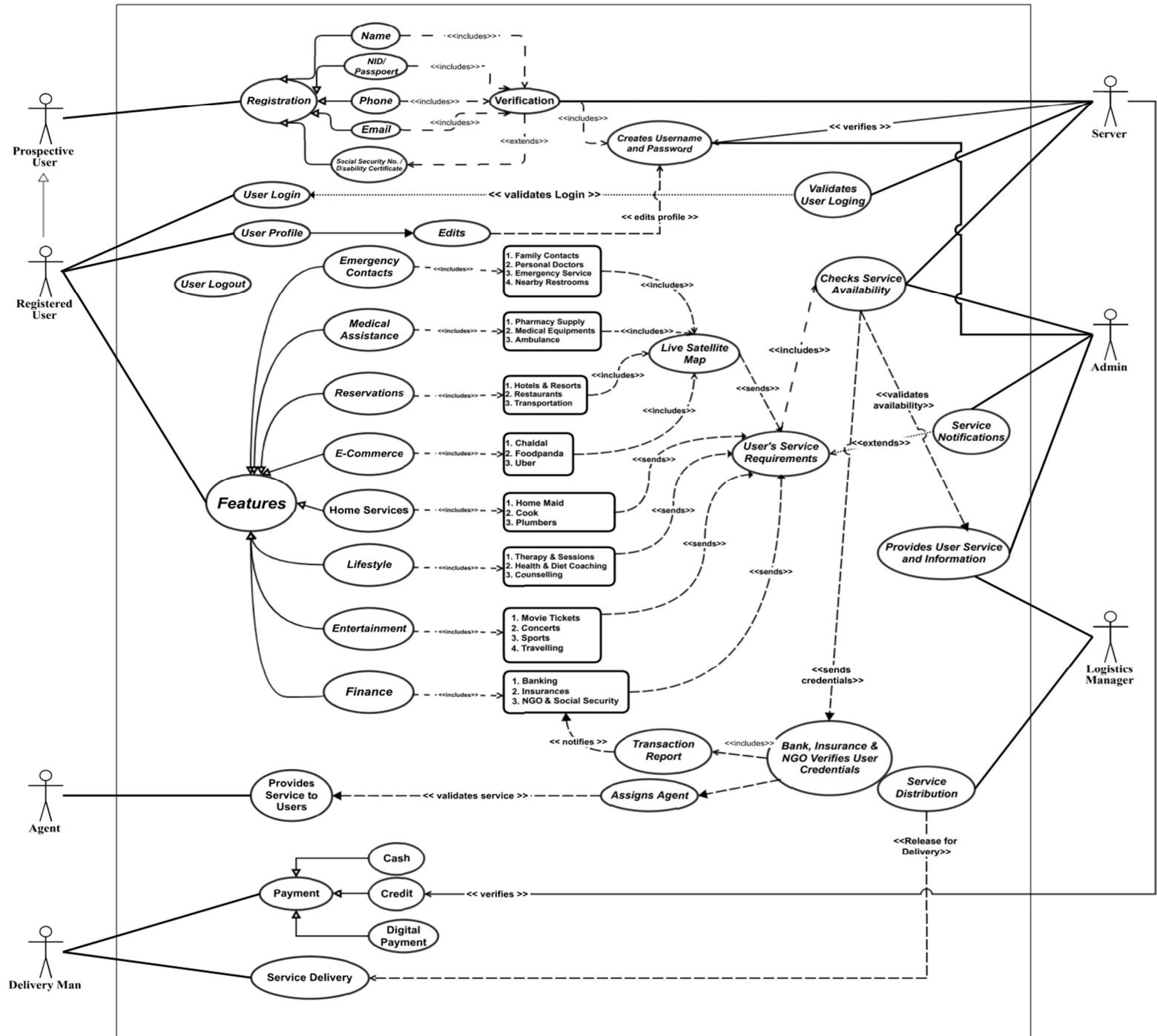
## 4. PROJECT DIAGRAMS AND DESIGNS

### USE CASE DIAGRAM

Mubashir Mohsin (20-42884-1)

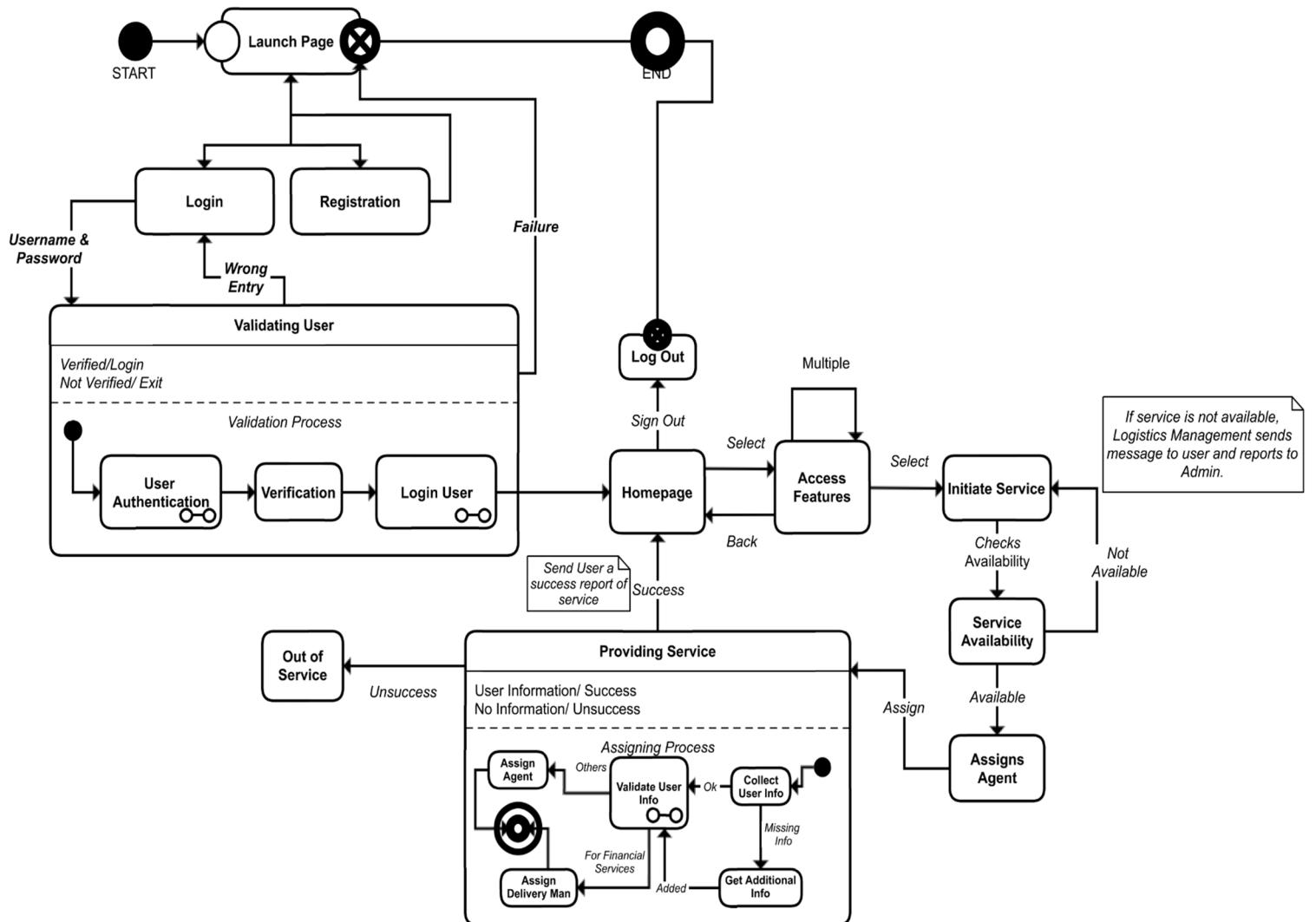
### ENABLED

Use Case Diagram



**STATE DIAGRAM**  
Talha Rahman Khan (18-36265-1)

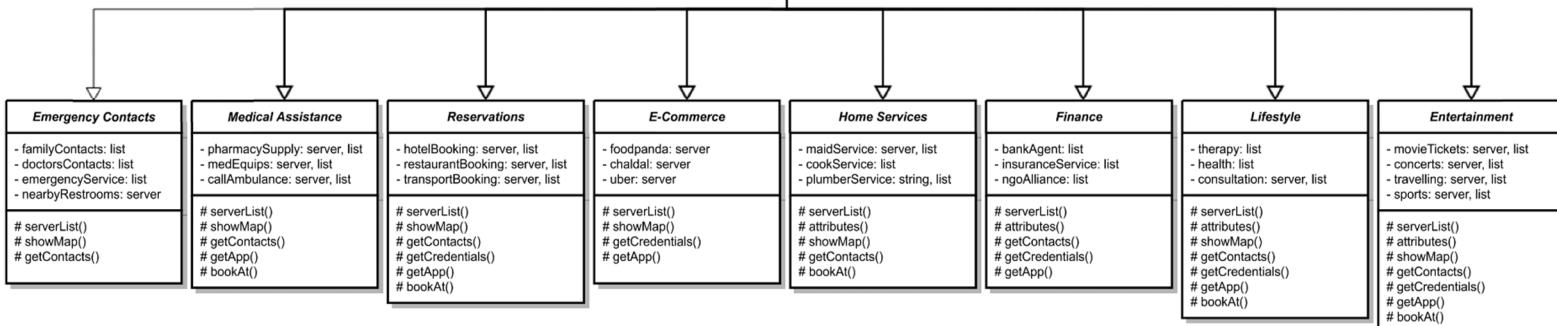
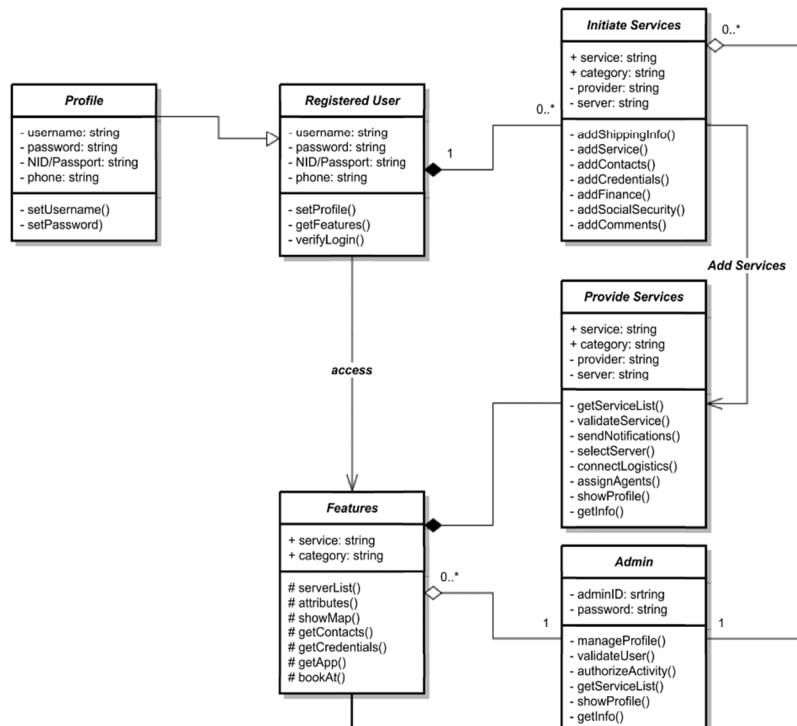
**ENABLED**  
State Diagram



# CLASS DIAGRAM

Wasek Al-Azad (19-39381-1)

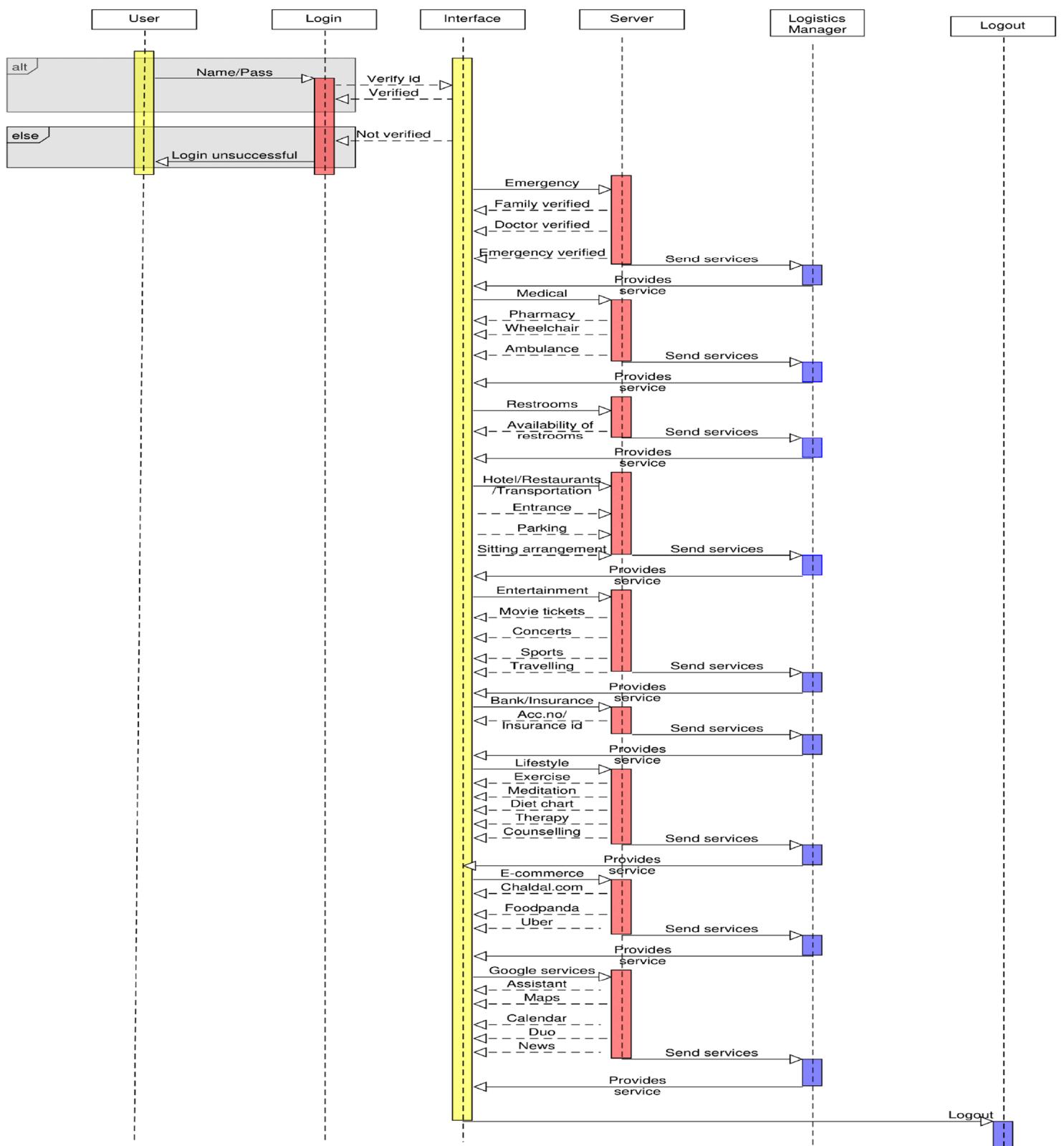
## ENABLED Class Diagram



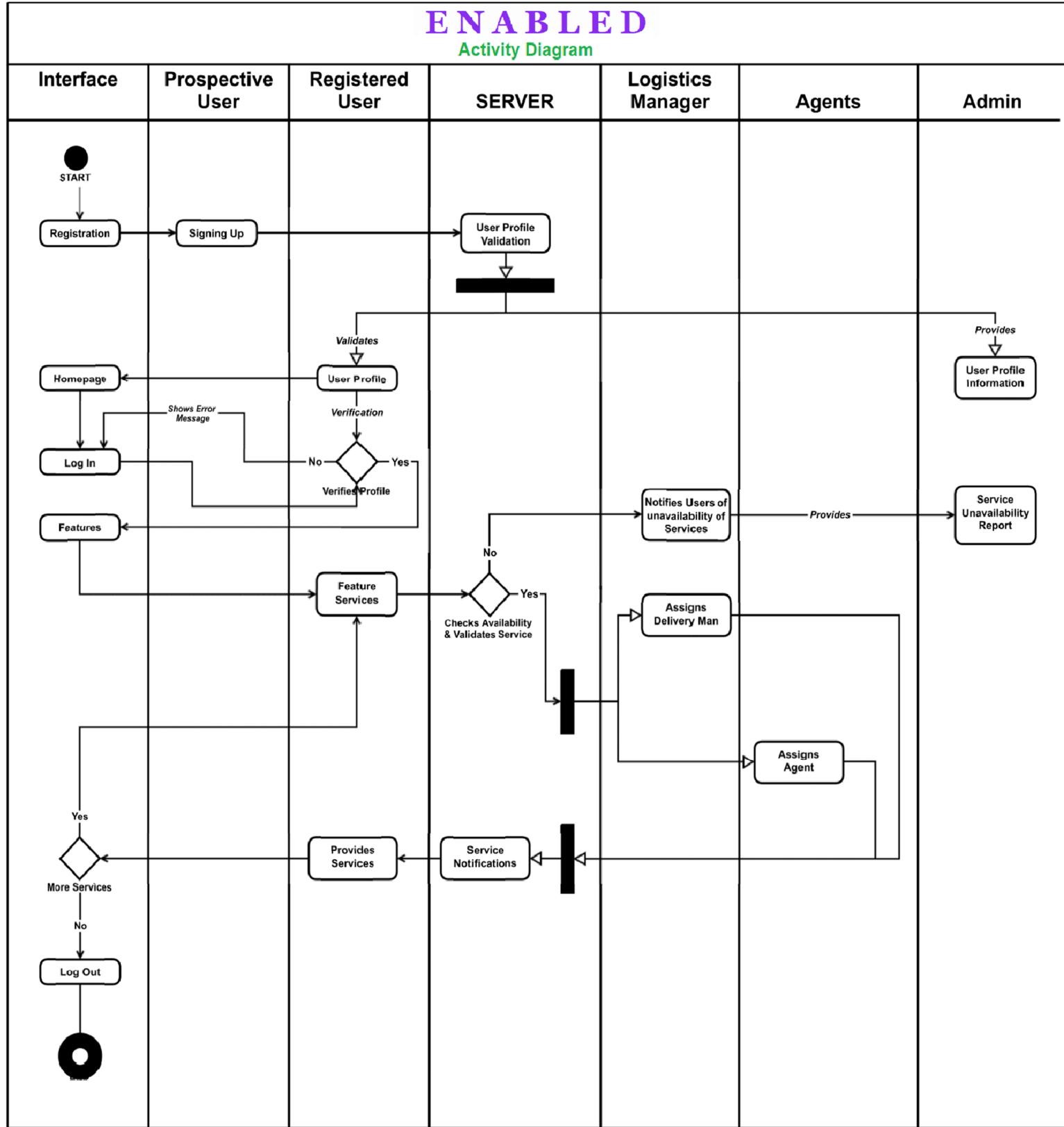
**SEQUENCE DIAGRAM**  
Safuan Alam Saifee (20-41861-1)

**ENABLED**

Sequence Diagram



**ACTIVITY DIAGRAM**  
Mubashir Mohsin (20-42884-1)  
&  
Safuan Alam Saifee (20-41861-1)



## 5. USER INTERFACE & EXPERIENCE



## 6. PROJECT TEST PLANNING

### **Module-1: REGISTRATION(Sign-Up)**

| Project Name: ENABLED – A Disability Assistant Software   |   | Test Designed by: MUBASHIR MOHSIN                            |                |                    |  |  |  |
|---|---|--|----------------|--------------------|--|--|--|
| Test Case ID: FR_1  |   | Test Designed date: 23 July, 2022                            |                |                    |  |  |  |
| Test Priority (Low, Medium, High): High   |   | Test Executed by: SAFUAN ALAM SAIFEE                         |                |                    |  |  |  |
| Module Name: Sign-Up Session  |   | Test Execution date: 23 July 2022                            |                |                    |  |  |  |
| Test Title: Test mobile application Sign-up Page  |   |  |                |                    |  |  |  |
| Description: Verify Registration with valid NID, Phone No., Email, Username and Password  |   |  |                |                    |  |  |  |
| Precondition (If any): User must have valid NID/Passport and Disability Certification   |   |  |                |                    |  |  |  |
| Test Steps  | Test Data   | Expected Results   | Actual Results | Status (Pass/Fail) |  |  |  |
| 1. Go to the Launch Page<br>2. Go to the Sign-up section<br>3. Enter NID/Passport<br>4. Enter Phone number and Email<br>5. Enter a Username and Password<br>6. Click submit | NID/Passport: 123456789<br>Phone No: 01111111111<br>Email: name.number@domain.com<br>Username: Abcd1234<br>Password: 123#Mule | User should be able to Register into the system successfully | As expected,   | Pass               |  |  |  |
| Post Condition: User is validated with database and successfully registered to the system. The account session details are logged in the database.                          |   |  |                |                    |  |  |  |

### **Module-2: LOG IN**

|   |  |                                      |  |
|---|--|--------------------------------------|--|
| Project Name: ENABLED – A Disability Assistant Software |  | Test Designed by: MUBASHIR MOHSIN    |  |
| Test Case ID: FR_2                                      |  | Test Designed date: 23 July, 2022    |  |
| Test Priority (Low, Medium, High): High                 |  | Test Executed by: SAFUAN ALAM SAIFEE |  |

| Module Name: Login Session   |   | Test Execution date: 23 July 2022                 |                |                    |
|--|---|---|----------------|--------------------|
| Test Title: Verify Login with valid Username and Password  |   |   |                |                    |
| Description: Test mobile app login page  |   |   |                |                    |
| Precondition (If any): User must have registered Username and Password   |   |   |                |                    |
| Test Steps   | Test Data                               | Expected Results                                  | Actual Results | Status (Pass/Fail) |
| 1. Go to the Launch Page<br>2. Go to the Login section<br>3. Enter Username and Password<br>4. Click Login                                 | Username: Abcd123<br>Password: 123#Mule | User should be able to login into the application | As expected,   | Pass               |
| Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database. |   |   |                |                    |

### Module-3: Email Account Connection

| Project Name: ENABLED – A Disability Assistant Software    | Test Designed by: MUBASHIR MOHSIN             |   |                |                    |
|--|---|---|----------------|--------------------|
| Test Case ID: FR_3   | Test Designed date: 23 July, 2022             |   |                |                    |
| Test Priority (Low, Medium, High): Low                     | Test Executed by: SAFUAN ALAM SAIFEE          |   |                |                    |
| Module Name: Email Account Connection                      | Test Execution date: 23 July 2022             |   |                |                    |
| Test Title: Log in and Sign-Up connecting with Email       |   |   |                |                    |
| Description: Test mobile app login and sign-up page        |   |   |                |                    |
| Precondition (If any): User must have logged in with email |   |   |                |                    |
| Test Steps   | Test Data                                     | Expected Results  | Actual Results | Status (Pass/Fail) |
| 1. Go to the Launch Page<br>2. Click Connect with Email    | Email: name.no@dom.com<br>Password: 1234#Abcd | User should be able to connect with personal email, sign-up using email information and | As expected,   | Pass               |

|                              |                    |                            |  |  |
|------------------------------|--------------------|----------------------------|--|--|
| 3. Login with Email          | Sign-up with email | login with connected email |  |  |
| 4. Go to the Sign-up section | Login with email   |                            |  |  |
| 5. Click Sign-up with email  |                    |                            |  |  |
| 6. Go to the Login section   |                    |                            |  |  |
| 7. Click Login with email    |                    |                            |  |  |

Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.

#### Module-4: Emergency Contacts

| Project Name: ENABLED – A Disability Assistant Software  | Test Designed by: SAFUAN ALAM SAIFEE |                                      |                |                    |  |  |  |  |
|--|--------------------------------------|--------------------------------------|----------------|--------------------|--|--|--|--|
| Test Case ID: FR_4   | Test Designed date: 23 July, 2022    |                                      |                |                    |  |  |  |  |
| Test Priority (Low, Medium, High): Medium  | Test Executed by: MUBASHIR MOHSIN    |                                      |                |                    |  |  |  |  |
| Module Name: Emergency Contacts  | Test Execution date: 24 July, 2022   |                                      |                |                    |  |  |  |  |
| Test Title: Verify emergency contacts including family and personal doctors  |                                      |                                      |                |                    |  |  |  |  |
| Description: Test emergency contacts   |                                      |                                      |                |                    |  |  |  |  |
| Precondition (If any): User must have family and personal doctor's contact.  |                                      |                                      |                |                    |  |  |  |  |
| Test Steps   | Test Data                            | Expected Results                     | Actual Results | Status (Pass/Fail) |  |  |  |  |
| 1. Go to the Homepage  | Null                                 | User should input emergency contacts | As expected,   | Pass               |  |  |  |  |
| 2. Click on Emergency Contacts   |                                      |                                      |                |                    |  |  |  |  |
| 3. Go to Family Member's Contact No  |                                      |                                      |                |                    |  |  |  |  |
| 4. Go to Personal Doctors Contact No   |                                      |                                      |                |                    |  |  |  |  |
| 5. Go to Emergency Services  |                                      |                                      |                |                    |  |  |  |  |
| Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database. |                                      |                                      |                |                    |  |  |  |  |

## **Module-5: Family Contacts**

| Project Name: ENABLED – A Disability Assistant Software   | Test Designed by: SAFUAN ALAM SAIFEE |                               |                |                    |  |  |  |  |
|---|--------------------------------------|-------------------------------|----------------|--------------------|--|--|--|--|
| Test Case ID: FR_5  | Test Designed date: 23 July, 2022    |                               |                |                    |  |  |  |  |
| Test Priority (Low, Medium, High): High   | Test Executed by: MUBASHIR MOHSIN    |                               |                |                    |  |  |  |  |
| Module Name: Family Contacts  | Test Execution date: 24 July, 2022   |                               |                |                    |  |  |  |  |
| Test Title: Verify Family Contacts  |                                      |                               |                |                    |  |  |  |  |
| Description: Test Family Contacts   |                                      |                               |                |                    |  |  |  |  |
| Precondition (If any): User must add family contact.  |                                      |                               |                |                    |  |  |  |  |
| Test Steps  | Test Data                            | Expected Results              | Actual Results | Status (Pass/Fail) |  |  |  |  |
| 1. Go to the Homepage<br>2. Click on Emergency Contacts<br>3. Enter Family Member's Contact No<br>4. Click OK                             | Contact no:<br>01213843932           | User can add family contacts. | As expected,   | Pass               |  |  |  |  |
| Post Condition: User is validated with database and successfully login to account. The account sessiondetails are logged in the database. |                                      |                               |                |                    |  |  |  |  |

## **Module-6: Emergency Services**

|   |                                      |  |  |  |
|---|--------------------------------------|--|--|--|
| Project Name: ENABLED – A Disability Assistant Software | Test Designed by: SAFUAN ALAM SAIFEE |  |  |  |
| Test Case ID: FR_6                                      | Test Designed date: 23 July, 2022    |  |  |  |
| Test Priority (Low, Medium, High): High                 | Test Executed by: MUBASHIR MOHSIN    |  |  |  |
| Module Name: Emergency Services                         | Test Execution date: 24 July, 2022   |  |  |  |
| Test Title: Verify Emergency Services.                  |                                      |  |  |  |
| Description: Test Emergency Services.                   |                                      |  |  |  |
| Precondition (If any):                                  |                                      |  |  |  |

| Test Steps   | Test Data | Expected Results   | Actual Results | Status (Pass/Fail) |
|--|-----------|--|----------------|--------------------|
| 1. Go to the Homepage<br>2. Click on Emergency Contacts<br>3. Select Hospital Contact<br>4. Select Police Station Contact<br>5. Select Fire Service Contact<br>6. Click OK | Null      | User should add hospital, police station, fire service contacts as emergency services. | As expected,   | Pass               |
| Post Condition: User is validated with database and successfully login to account. The account sessiondetails are logged in the database.                                  |           |  |                |                    |

## Module-7: My Doctors

| Project Name: ENABLED – A Disability Assistant Software  | Test Designed by: SAFUAN ALAM SAIFEE |  |                |                    |  |  |  |  |
|--|--------------------------------------|--|----------------|--------------------|--|--|--|--|
| Test Case ID: FR_7   | Test Designed date: 23 July, 2022    |  |                |                    |  |  |  |  |
| Test Priority (Low, Medium, High): High  | Test Executed by: MUBASHIR MOHSIN    |  |                |                    |  |  |  |  |
| Module Name: My Doctors  | Test Execution date: 24 July, 2022   |  |                |                    |  |  |  |  |
| Test Title: Verify Personal Doctor's Contact.  |                                      |  |                |                    |  |  |  |  |
| Description: Test Personal Doctor's Contacts.  |                                      |  |                |                    |  |  |  |  |
| Precondition (If any):   |                                      |  |                |                    |  |  |  |  |
| Test Steps   | Test Data                            | Expected Results   | Actual Results | Status (Pass/Fail) |  |  |  |  |
| 1. Go to the homepage<br>2. Click on Emergency Contacts<br>3. Add Personal Doctor's Contact No<br>4. Click Personal Doctor's Contact No. from the List to make a call<br>5. Exit | Contact no: 2737923293               | User should be able to add new contacts of doctors and also be able to make calls. | As expected,   | Pass               |  |  |  |  |

**Post Condition:** User is validated with database and successfully login to account. The account sessiondetails are logged in the database.

## **Module-8: MEDICAL ASSISTANCE**

| Project Name: ENABLED – A Disability Assistant Software   | Test Designed by: WASEK AL AZAD   |   |                |                    |  |  |  |  |
|---|-----------------------------------|---|----------------|--------------------|--|--|--|--|
| Test Case ID: FR_8  | Test Designed date: 23 July, 2022 |   |                |                    |  |  |  |  |
| Test Priority (Low, Medium, High): Medium   | Test Executed by: MUBASHIR MOHSIN |   |                |                    |  |  |  |  |
| Module Name: Medical Helpline Speed-dial  | Test Execution date: 23 July 2022 |   |                |                    |  |  |  |  |
| Test Title: Test emergency medical services   |                                   |   |                |                    |  |  |  |  |
| Description: Verify medical services with valid helpline  |                                   |   |                |                    |  |  |  |  |
| Precondition (If any):  |                                   |   |                |                    |  |  |  |  |
| Test Steps  | Test Data                         | Expected Results  | Actual Results | Status (Pass/Fail) |  |  |  |  |
| 1. Login to App<br>2. Open Homepage<br>3. Click on Medical Assistance<br>4. Click on Pharmacy<br>5. Click on Equipment for Wheelchair<br>6. Click on Ambulance<br>7. Exit | Null                              | User should be able to connect to hospital/clinic helpline successfully | As expected,   | Pass               |  |  |  |  |
| <b>Post Condition:</b> User is validated with database and successfully registered to the system. The account session details are logged in the database.                 |                                   |   |                |                    |  |  |  |  |

## Module-12: RESTROOMS NEARBY

| Project Name: ENABLED – A Disability Assistant Software  | Test Designed by: WASEK AL AZAD      |   |                |                    |
|--|--------------------------------------|---|----------------|--------------------|
| Test Case ID: FR_12  | Test Designed date: 23 July, 2022    |   |                |                    |
| Test Priority (Low, Medium, High): Low   | Test Executed by: SAFUAN ALAM SAIFEE |   |                |                    |
| Module Name: Show nearest restrooms  | Test Execution date: 23 July 2022    |   |                |                    |
| Test Title: Find nearest restrooms   |                                      |   |                |                    |
| Description: Display restrooms in the neighbourhood  |                                      |   |                |                    |
| Precondition (If any):   |                                      |   |                |                    |
| Test Steps   | Test Data                            | Expected Results                                  | Actual Results | Status (Pass/Fail) |
| 1. Login to App<br>2. Open Homepage<br>3. Click Maps on nearby Restroom<br>4. Exit   | Null                                 | User should be able to see restrooms in proximity | As expected,   | Pass               |
| Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database. |                                      |   |                |                    |

## Module-13: HOTEL, RESTAURANTS, TRANSPORTATION

|  |   |
|--|---|
| Project Name: ENABLED – A Disability Assistant Software  | Test Designed by: WASEK AL AZAD         |
| Test Case ID: FR_13  | Test Designed date: 23 July, 2022       |
| Test Priority (Low, Medium, High): High  | Test Executed by: MD. TALHA RAHMAN KHAN |
| Module Name: Show map with nearby Hotels, Restaurants and Transportation Systems                   | Test Execution date: 23 July 2022       |
| Test Title: Test reservation in Hotels, Restaurants and Transportation Systems                     |   |
| Description: Verify reservation and arrangements in Hotels, Restaurants and Transportation Systems |   |
| Precondition (If any):   |   |

| Test Steps   | Test Data | Expected Results   | Actual Results | Status<br>(Pass/Fail) |
|--|-----------|--|----------------|-----------------------|
| <ol style="list-style-type: none"> <li>1. Login to App</li> <li>2. Open Homepage</li> <li>3. Click Hotels, Restaurants and Transportation</li> <li>4. Click on Wheelchair Accessibility</li> <li>5. Click on Entrance</li> <li>6. Click on Parking Area</li> <li>7. Click on Sitting Arrangement</li> <li>8. Exit</li> </ol> | Null      | User should be able to see arrangements made for the disabled in Hotels, Restaurants and Transportation Systems and book reservation | As expected,   | Pass                  |
| Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.   |           |  |                |                       |

## Module-18: ENTERTAINMENT

| Project Name: ENABLED – A Disability Assistant Software   | Test Designed by: WASEK AL AZAD   |   |                |                       |
|---|-----------------------------------|---|----------------|-----------------------|
| Test Case ID: FR_18   | Test Designed date: 23 July, 2022 |   |                |                       |
| Test Priority (Low, Medium, High): High   | Test Executed by: MUBASHIR MOHSIN |   |                |                       |
| Module Name: Entertainment directory  | Test Execution date: 23 July 2022 |   |                |                       |
| Test Title: Test for entertainment bookings   |                                   |   |                |                       |
| Description: Verify the bookings for entertainment and travels  |                                   |   |                |                       |
| Precondition (If any):  |                                   |   |                |                       |
| Test Steps  | Test Data                         | Expected Results                                  | Actual Results | Status<br>(Pass/Fail) |
| <ol style="list-style-type: none"> <li>1. Login to App</li> <li>2. Open Homepage</li> <li>3. Click Entertainment</li> </ol> | Null                              | User should be able to book shows and bus tickets | As expected,   | Pass                  |

|  |  |  |  |  |
|--|--|--|--|--|
| 4. Click on Movie Tickets<br>5. Click on Concerts<br>6. Click on Sports<br>7. Click on Travelling<br>8. Exit                               |  |  |  |  |
| Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database. |  |  |  |  |

### Module-23: Financial Assistance

| Project Name: ENABLED – A Disability Assistant Software   | Test Designed by: MD. TALHA RAHMAN KHAN |   |                |                    |
|---|---|---|----------------|--------------------|
| Test Case ID: FR_23   | Test Designed date: 23 July, 2022       |   |                |                    |
| Test Priority (Low, Medium, High): Medium   | Test Executed by: SAFUAN ALAM SAIFEE    |   |                |                    |
| Module Name: Financial Assistance   | Test Execution date: 23 July 2022       |   |                |                    |
| Test Title: Test mobile application Financial Activities Page   |   |   |                |                    |
| Description: Verify Registration with bank account, Phone No., Email, Username and Password   |   |   |                |                    |
| Precondition (If any): User must have Bank Account or Insurance   |   |   |                |                    |
| Test Steps  | Test Data                               | Expected Results  | Actual Results | Status (Pass/Fail) |
| 1. Go to the Financial Activities Menu<br>2. Add Bank Account or Insurance<br>3. Select Bank Account or Insurance from the finance list<br>4. Connect with agent<br>5. Make an appointment<br>6. Exit | Bank Account /Insurance:<br>123456789   | User should be able to enter into the page successfully | As expected,   | Pass               |
| Post Condition: User is validated with database and successfully registered to the system. The account session details are logged in the database.  |   |   |                |                    |

### 13. Module-27: Lifestyle

| Project Name: ENABLED – A Disability Assistant Software  | Test Designed by: MD. TALHA RAHMAN KHAN           |   |                |                    |
|--|---|---|----------------|--------------------|
| Test Case ID: FR_27  | Test Designed date: 23 July, 2022                 |   |                |                    |
| Test Priority (Low, Medium, High): Medium  | Test Executed by: MUBASHIR MOHSIN                 |   |                |                    |
| Module Name: Lifestyle   | Test Execution date: 23 July 2022                 |   |                |                    |
| Test Title: Verify Lifestyle activities and accessibility  |   |   |                |                    |
| Description: Test mobile app to access the Lifestyle feature   |   |   |                |                    |
| Precondition (If any):   |   |   |                |                    |
| Test Steps   | Test Data   | Expected Results  | Actual Results | Status (Pass/Fail) |
| <ol style="list-style-type: none"> <li>1. Go to the Lifestyle Menu</li> <li>2. Go to the Exercise section</li> <li>3. Go to the Meditation section</li> <li>4. Go to the Diet Chart section</li> <li>5. Go to the Therapy/ Counseling section</li> </ol> | Username:<br>Abcd123<br><br>Password:<br>123#Mule | User should be able to avail the features of Lifestyle activities | As expected,   | Pass               |
| Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.   |   |   |                |                    |

### Module-32: E-Commerce

|   |   |
|---|---|
| Project Name: ENABLED – A Disability Assistant Software | Test Designed by: MD. TALHA RAHMAN KHAN |
| Test Case ID: FR_32                                     | Test Designed date: 23 July, 2022       |
| Test Priority (Low, Medium, High): Low                  | Test Executed by: SAFUAN ALAM SAIFEE    |
| Module Name: E-Commerce                                 | Test Execution date: 23 July 2022       |

| Test Title: Access E-Commerce facilities   |   |   |                |                    |
|--|---|---|----------------|--------------------|
| Description: Test mobile app E-Commerce feature with different domains   |   |   |                |                    |
| Precondition (If any): User must have logged in with E-Commerce organizations  |   |   |                |                    |
| Test Steps   | Test Data                                   | Expected Results  | Actual Results | Status (Pass/Fail) |
| <ol style="list-style-type: none"> <li>1. Go to the E-commerce Menu</li> <li>2. Connect to Foodpanda</li> <li>3. Connect to Chaldal.com</li> <li>4. Connect to Uber</li> <li>5. Avail special coupons and offers</li> <li>6. Add Wallet</li> <li>7. Access to the Wallet</li> <li>8. Exit</li> </ol> | Connect with all the E-commerce sites given | User should be able to order food, add shopping, add car rides, avail special coupons and access wallet | As expected,   | Pass               |
| Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.   |   |   |                |                    |

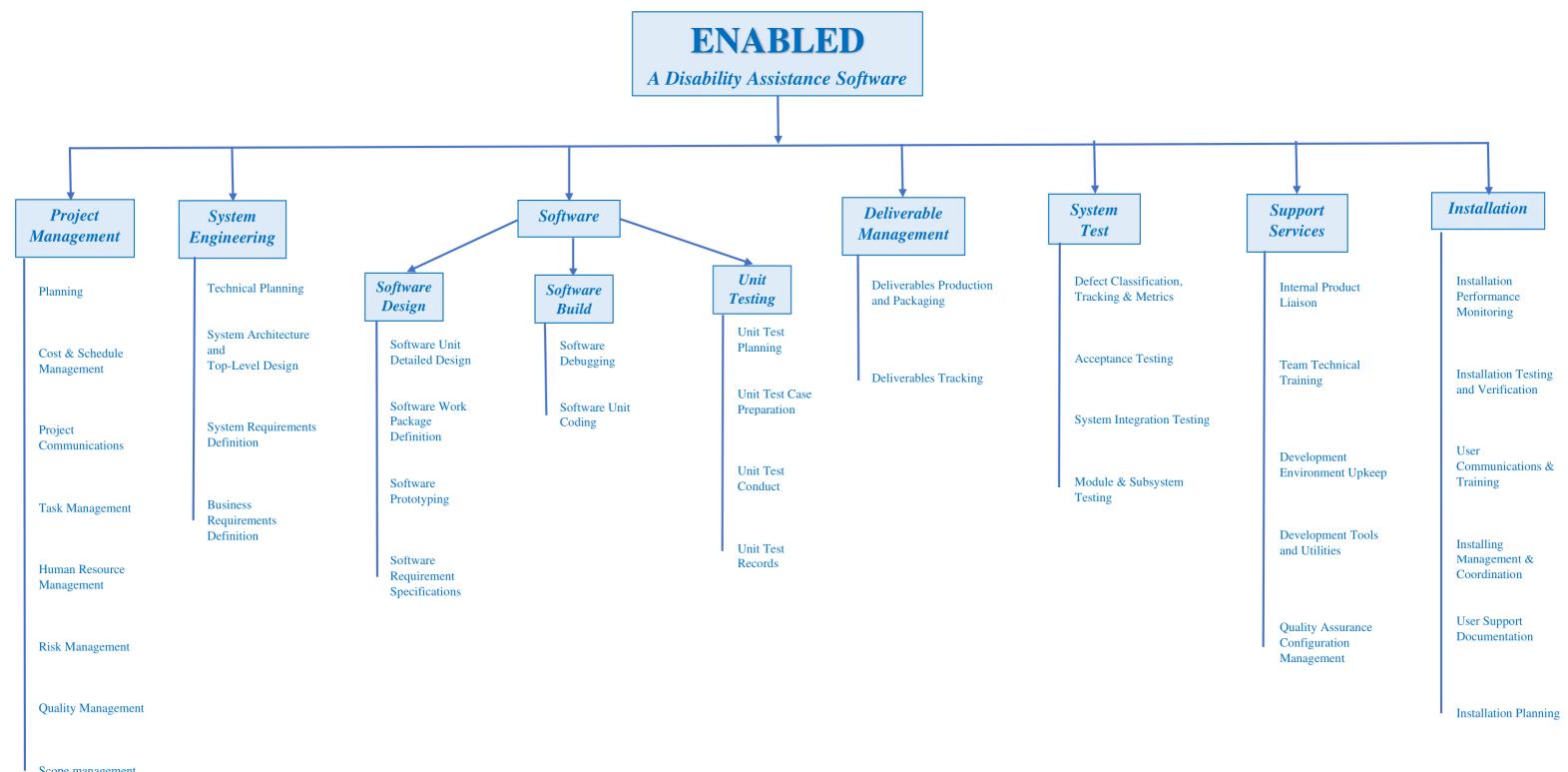
### Module-36: Home Services

| Project Name: ENABLED – A Disability Assistant Software                          | Test Designed by: MD. TALHA RAHMAN KHAN |                  |                |                    |
|--|---|------------------|----------------|--------------------|
| Test Case ID: FR_36  | Test Designed date: 23 July, 2022       |                  |                |                    |
| Test Priority (Low, Medium, High): Medium  | Test Executed by: MD. WASEK-AL-AZAD     |                  |                |                    |
| Module Name: Home Services   | Test Execution date: 23 July 2022       |                  |                |                    |
| Test Title: Test mobile application for Home Service feature                     |   |                  |                |                    |
| Description: Access Home service facilities with maids, cooks, plumbers          |   |                  |                |                    |
| Precondition (If any): User must provide Social Security number and home address |   |                  |                |                    |
| Test Steps   | Test Data                               | Expected Results | Actual Results | Status (Pass/Fail) |

|  |                                   |   |              |      |
|--|-----------------------------------|---|--------------|------|
| 1. Go to the Home Service Menu   | Social Security No:<br>0111111111 | User should be able to appoint home servicing agents and make payment with wallet | As expected, | Pass |
| 2. Add Social Security Number  |                                   |   |              |      |
| 3. Select Home Maids and appoint one   |                                   |   |              |      |
| 4. Select Home Cooks and appoint one   |                                   |   |              |      |
| 5. Select Home Emergency Services and appoint one  |                                   |   |              |      |
| 6. Access wallet   |                                   |   |              |      |
| 7. Exit  |                                   |   |              |      |
| Post Condition: User is validated with database and successfully registered to the system. The account session details are logged in the database. |                                   |   |              |      |

## 7. PROJECT PLANNING

### Work Breakdown Structure (WBS)



## Effort Estimation

SLOC= Lines of Codes= 7,500

Coefficient for Organic project = 2.4

P= 1.05; T= 0.38

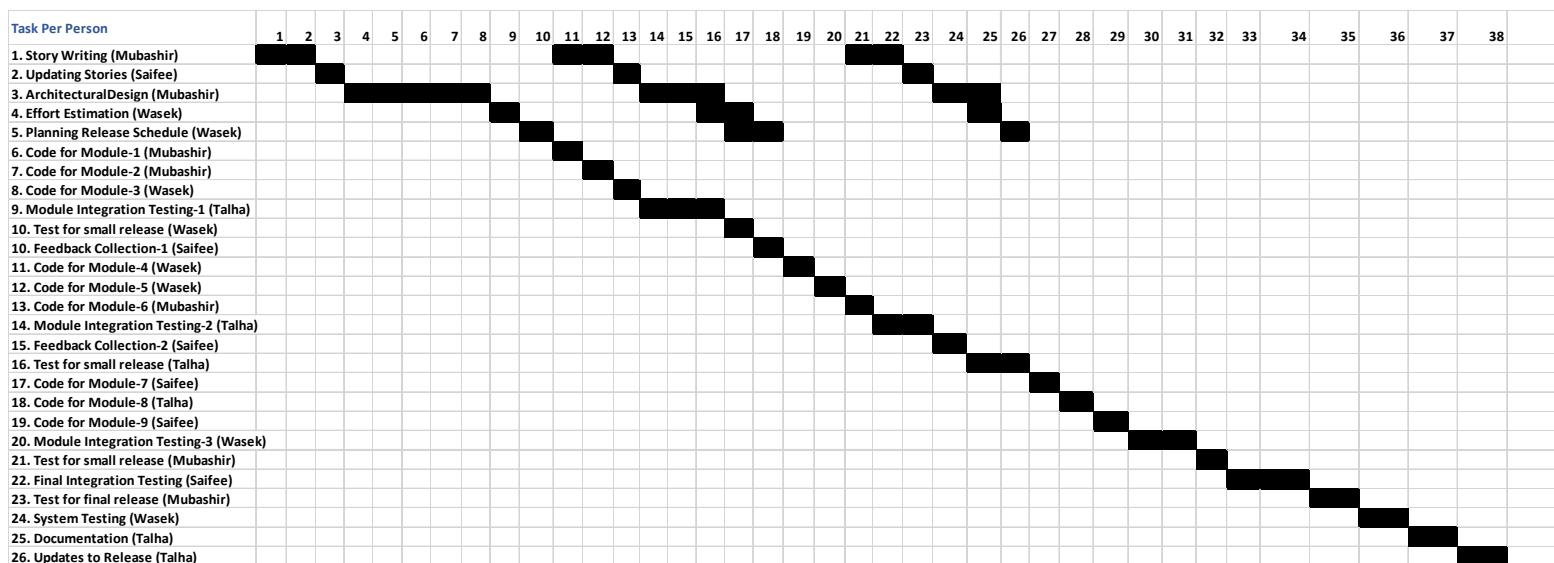
So,

$$\text{Effort} = \text{PM} = \text{Coefficient} * (\text{SLOC}/1000) ^P = 2.4 * (7500/1000) ^{1.05} = \mathbf{19.907}$$

$$\text{Development Time} = \text{DM} = 2.5 * (\text{PM})^T = 2.5 * (19.907) ^{0.38} = 7.79 \approx \mathbf{8 \text{ months}}$$

$$\text{Required People} = \text{ST} = \text{PM}/\text{DM} = 19.907/7.79 = 2.55 \approx \mathbf{3 \text{ persons (apx.)}}$$

## Timeline Chart



## 8. PROJECT RISK MANAGEMENT

### RISK TABLE

| RISKS   | CATEGORY | PROBABILITY | IMPACT |
|---|----------|-------------|--------|
| Size estimation might be significantly low                | PS       | 50%         | 2      |
| Requirements might be changed by Client                   | PS       | 70%         | 2      |
| Sponsors might change/stop funding                        | CU       | 40%         | 1      |
| Deadline might be tightened by client                     | CU       | 60%         | 2      |
| Communication with clients might be delayed/postponed     | CU       | 10%         | 3      |
| Contribution to the collective codebase might be hampered | PR       | 5%          | 3      |
| Past developers might not be available for next version   | DE       | 20%         | 3      |
| Lack of training on tools                                 | DE       | 5%          | 4      |
| Partnership with other companies might not be continued   | BU       | 30%         | 1      |
| Inexperienced staff                                       | ST       | 5%          | 3      |
| Technologies might not meet expectations                  | TE       | 10%         | 2      |

***Impact Values:***

Catastrophic – 1

Critical – 2

Marginal – 3

Negligible – 4

**\*PS = Product Size, \*CU = Customer Characteristic, \*BU = Business Impact, \*PR = Process Definition, \*DE = Development Environment, \*ST = Staff size & experience, \*TE = Technology to be built**

## 9. PROJECT EXECUTION REPORT

| <b>Task (Project Management)</b>                | <b>Planned (Person Days)</b> | <b>Task (Project Management)</b>                | <b>Planned (Person Days)</b> |
|---|------------------------------|---|------------------------------|
| 1. Planning                                     | 12                           | 27. System Integration Testing                  | 2                            |
| 2. Cost Schedule Management                     | 7                            | 28. Module and subsystem testing                | 5                            |
| 3. Project Communication                        | 5                            | <b>System Testing Duration (BCWP)</b>           | <b>14</b>                    |
| 4. Task Managements                             | 10                           | 29. Internal Product Liaison                    | 1                            |
| 5. Human Resource Management                    | 8                            | 30. Team Technical Training                     | 12                           |
| 6. Risk Management                              | 5                            | 31. Development Environment Upkeep              | 2                            |
| 7. Quality Management                           | 6                            | 32. Development tools and utilities             | 5                            |
| 8. Scope Management                             | 5                            | 33. Quantity Assurance Configuration Management | 6                            |
| <b>Project Management Duration (BCWP)</b>       | <b>58</b>                    | <b>Support Service Duration (BCWP)</b>          | <b>26</b>                    |
| 9. Technical Planning                           | 4                            | 34. Installation Performance Monitoring         | 2                            |
| 10. System Architecture and Top-level design    | 5                            | 35. Installation Testing and Verification       | 5                            |
| 11. System requirements definition              | 8                            | 36. User Communications and Training            | 3                            |
| 12. Business Requirements Definition            | 6                            | 37. Installing Management & Coordination        | 3                            |
| <b>System Engineering Duration (BCWP)</b>       | <b>23</b>                    | 38. User support Documentation                  | 3                            |
| 13. Software Unit Detailed Design               | 5                            | 39. Installation Planning                       | 4                            |
| 14. Software Work Package Definition            | 7                            | <b>Installation Duration (BCWP)</b>             | <b>20</b>                    |
| 15. Software Prototyping                        | 8                            |   |                              |
| 16. Software Requirement Specifications         | 6                            | <b>Total BCWP Duration</b>                      | <b>202 = 6.5 Months</b>      |
| <b>Software Designing Duration (BCWP)</b>       | <b>26</b>                    |   |                              |
| 17. Software Debugging                          | 5                            |   |                              |
| 18. Software Unit Coding                        | 15                           |   |                              |
| <b>Software Building Duration (BCWP)</b>        | <b>20</b>                    |   |                              |
| 19. Unit Test Planning                          | 3                            |   |                              |
| 20 Unit Test Case Preparation                   | 4                            |   |                              |
| 21. Unit Test Conduct                           | 2                            |   |                              |
| 22. Unit Test Records                           | 2                            |   |                              |
| <b>Unit Testing Duration (BCWP)</b>             | <b>11</b>                    |   |                              |
| 23. Deliverables Production and Packaging       | 4                            |   |                              |
| 24. Deliverables Tracking                       | 4                            |   |                              |
| <b>Deliverable Management Duration (BCWP)</b>   | <b>4</b>                     |   |                              |
| 25. Detect Classification Tracking and metrices | 3                            |   |                              |
| 26. Acceptance Testing                          | 4                            |   |                              |

**THE END**