American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

ANTI-SYNDICATE REPORTING AND ALERT SYSTEM

A Software Engineering Project Submitted
By

Semester: Fall 24-25		**Section: B**	**Group Number: 4**	
SN	Student Name	Student ID	Contribution (CO3+CO4)	Individual Marks
1	Ahasan Habib	22-48877-3		
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The project will be Evaluated for the following Course Outcomes

CO3: *Select* appropriate software engineering models, project management roles and their associated skills for the complex software engineering project and evaluate the sustainability of developed software, taking into consideration the societal and environmental aspects	Total Marks	
Appropriate Process Model Selection and Argumentation with Evidence	[5 Marks]	
Evidence of Argumentation regarding process model selection	[5Marks]	
Analysis the impact of societal, health, safety, legal and cultural issues	[5Marks]	
Submission, Defense, Completeness, Spelling, grammar and Organization of the Project report	[5Marks]	
CO4: *Develop* project management plan to manage software engineering projects following the principles of engineering management and economic decision process	Total Marks	
Develop the project plan, its components of the proposed software products	[5Marks]	
Identify all the activities/tasks related to project management and categorize them within the WBS structure. Perform detailed effort estimation correspond with the WBS and schedule the activities with resources	[5Marks]	
Identify all the potential risks in your project and prioritize them to overcome these risk factors.	[5Marks]	

Description of Student's Contribution in the Project work

Student Name: Student ID: Contribution in Percentage (%): <u>Contribution in the Project:</u> ▪ Contribution Description 1 ▪ Contribution Description 2 ____________________ Signature of the Student
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1. PROJECT PROPOSAL

1.1 Background to the Problem

In many markets in Bangladesh, shop owners often face illegal fee collections or extortion by syndicate members. This situation makes it hard for businesses to thrive and creates an unsafe environment for everyone. Current ways of reporting these problems, like going to the police in person, are often slow and don't work well. Many incidents go unreported, allowing these illegal activities to continue. We need a simple and easy platform where shop owners can report these issues quickly and safely. Customers also need a way to check the prices set by the government to report any overpriced goods.

1.2 Solution to the Problem

To address these issues, we propose creating the "Anti-Syndicate Reporting and Alert System" app. This mobile and web-based platform will help shop owners report illegal fee collections in real time, allowing security guards and police to respond quickly. Customers will also be able to see fixed government prices for products, so they can report any cases of overpricing.

Solution Description:

- The app allows shop owners to report illegal fee collections directly to security guards and police.
- It enables customers to verify government prices for products, making it easier to report overpricing.
- The app includes features for collecting evidence, community support, and data analysis to help prevent future problems.
- Additional features like community voting, witness testimony options, heatmaps of incidents, and rewards for reporting will enhance its usefulness.

Why This Solution Works:

The "Anti-Syndicate Reporting and Alert System" app is perfect for Bangladesh because most people have mobile phones. This makes it easy for shop owners and customers to use the app. It streamlines the reporting process, making it much simpler than traditional methods. By creating a direct line of communication between citizens, shop owners, and government officials, the app improves transparency and accountability in the market.

Feasibility and Business Objectives:

This solution is practical and supports the goals of improving market safety and trust in pricing. Since many people in Bangladesh have mobile phones, the app will be easy to access. Key features like real-time reporting, evidence collection, and price verification use modern technology to solve real problems. This project has the potential to change how shop owners and customers interact with authorities, leading to a fairer marketplace.

Target Group of Users:

- Shop owners dealing with extortion from syndicate members.
- Customers wanting transparency about product prices.
- Security personnel and police responding to reports.
- Administrators managing the app and users.

Description of Features & User Benefits:
The "Anti-Syndicate Reporting and Alert System" app has several important features that use technology to solve major issues in Bangladesh:

1. **User Authentication:**
    - Users can log in securely using their email, phone number, or social media accounts.
    - Different roles (Shop Owner, Customer, Security Guard, Police, Admin) can be assigned to ensure proper access.
2. **Incident Reporting:**
    - Shop owners can easily report illegal fees with details like location and description.
    - They can upload photos or videos as evidence.
    - Customers can also report overpriced goods by checking government prices.
3. **Community Voting & Rating System:**
    - Users can "upvote" reports of recurring incidents, helping authorities focus on serious issues.
    - This makes it easier to hold repeat offenders accountable

      .
4. **Witness Testimony Option:**
    - Other customers or shop owners can add testimonies to support existing reports.
    - This helps law enforcement with more reliable evidence.
5. **Market-Specific Incident Heatmap:**
    - A live map shows areas with frequent incidents.
    - This helps authorities and shop owners to tackle problems in high-risk areas.

6. **Weekly/Monthly Market Transparency Reports:**
    - The app generates reports summarizing trends in extortion and pricing practices.
    - This helps users stay informed and encourages accountability.
7. **Shop Verification Badge System:**
    - Shops that follow government pricing guidelines receive badges.
    - Customers can easily find compliant shops, promoting fair practices.
8. **Local Language Dialect Support:**
    - The app includes dialects from different regions for better understanding.
    - This makes the app more accessible to everyone.
9. **Emergency Safety Features for Reporters:**
    - A “quick exit” feature hides the app screen in dangerous situations.
    - This keeps users safe while reporting issues.
10. **Community News Bulletin:**

- A section for verified news about market conditions.
- This keeps users informed and aware of important issues.

11. **Real-Time Incident Escalation System:**

- Users can mark incidents as “urgent” to get faster help.
- This adds an extra layer of safety for critical situations.

12. **Reward Points for Reporting Compliance Violations:**

- Users earn rewards for accurately reporting issues.
- This encourages more participation in keeping the market fair.

13. **Anonymous Community Surveys for Feedback:**

- Monthly surveys for users to share their thoughts on market conditions and the app.
- This helps improve the app based on user feedback.

Contribution to Development:

The "Anti-Syndicate Reporting and Alert System" app will boost community involvement and improve market fairness in Bangladesh. It empowers both shop owners and customers to report illegal activities and ensures transparency in pricing. This app promotes a safer and more trustworthy marketplace, benefiting everyone involved.

Social and Environmental Effects:

The app encourages community participation and makes government actions more transparent. While it helps reduce illegal activities, it may raise concerns about personal information collection. To address these concerns, user privacy will be prioritized, and efforts will be made to ensure the app is easy for everyone to use. Additionally, by reducing paper use for complaints, the app helps the environment, although it may lead to electronic waste due to increased smartphone use.

SOFTWARE DEVELOPMENT LIFE CYCLE

2.1 Process Model

Process Model Selection:

Considering the unique objectives and multifaceted requirements of the "Anti-Syndicate Reporting and Alert System" app, the **Scrum process model** stands out as the most appropriate development methodology. This decision is supported by several key factors detailed below:

1. Iterative and Incremental Development:

The app aims to serve various user roles, including Shop Owners, Customers, Security Personnel, Police, and Admins. With features such as secure authentication, reporting illegal activities, price verification, and community interaction, the development process must cater to:

- Delivering small, usable increments of the application during each sprint.
- Incorporating user feedback effectively into subsequent iterations.
- Refining features like heatmaps and incident escalation based on real-world data from early releases.

Scrum allows the team to focus on completing specific modules (e.g., login functions or reporting mechanisms) in iterative cycles, ensuring robust functionality at every step.

2. Flexibility and Adaptability:

The socio-political and market environment targeted by the app is dynamic. Issues such as regulatory updates, changes in user behavior, and evolving societal needs require a development methodology that embraces change. Scrum excels in:

- Prioritizing user stories in each sprint to focus on the most critical needs.
- Adapting backlog priorities based on feedback from early adopters, including authorities and shop owners.

- Accommodating unforeseen changes, such as adding a new report category or updating compliance rules.

3. Continuous Improvement:

To ensure the app remains user-friendly and effective, continuous enhancement is vital. Scrum provides tools for:

- Conducting sprint retrospectives to assess successes, failures, and areas of improvement.
- Regularly revising design elements, such as the interface for reporting incidents or accessing price verification tools, to align with user feedback.
- Encouraging team accountability and innovation by fostering a collaborative, self-organized development environment.

4. Risk Management:

Given the app's critical functionalities, such as incident reporting and evidence collection, risk mitigation is a priority. Scrum minimizes risks by:

- Delivering smaller, testable increments to detect and address vulnerabilities early, such as flaws in data encryption or access control mechanisms.
- Regularly testing components like the reward system or transparency reports to ensure reliability.
- Incorporating user feedback to identify overlooked risks or usability challenges.

Why Scrum Over Other Models?

Although various process models offer unique advantages, none align as effectively with the requirements of the **"Anti-Syndicate Reporting and Alert System"** as Scrum does. This section provides a detailed evaluation of other models and explains why Scrum is the most suitable choice for this project.

1. Waterfall Model:

The Waterfall Model follows a sequential and rigid structure, where each phase must be completed before moving to the next.

- **Drawbacks:**
    - It is inflexible, making it unsuitable for projects with dynamic and evolving requirements like this one, where user needs and market conditions can change rapidly.
    - Early testing and feedback are not integrated into the development process. This limitation is critical, as the app relies on iterative user feedback to refine features like secure login, reporting, and incident heatmaps.
    - Delays in identifying and addressing issues can result in misaligned deliverables, particularly for features dependent on real-time usability.

- **Conclusion:**
  The Waterfall Model's linear nature is misaligned with the agile, user-focused, and adaptable approach required for this app.

2. V Model (Verification and Validation Model):

The V Model emphasizes verification and validation through structured testing at every stage of development.

- **Drawbacks:**
  - Although it integrates testing, the process remains sequential, which limits the flexibility to adapt to emerging requirements or stakeholder feedback.
  - Refinements to user-centric features such as reporting mechanisms or multi-language support cannot be accommodated iteratively, potentially leading to a suboptimal user experience.
  - Feedback loops are delayed, hindering the ability to promptly adjust to the app's evolving societal and regulatory needs.
- **Conclusion:**
  The V Model is overly focused on validation without offering iterative refinements, making it unsuitable for a project requiring high responsiveness and adaptability.

3. RUP (Rational Unified Process):

RUP is an iterative and incremental framework, offering flexibility similar to agile methods but with significant resource demands.

- **Drawbacks:**
  - It is resource-intensive, requiring extensive planning, documentation, and team expertise, which may not be feasible for this project's constraints in terms of time and budget.
  - The complexity of RUP can lead to longer onboarding times and potentially slower delivery of functional increments, especially for small teams.
  - While it provides adaptability, the overhead of managing its multiple phases can detract from focusing on rapid delivery of high-priority features like real-time incident escalation or transparency reports.
- **Conclusion:**
  RUP's heavy resource requirements and complexity make it less practical for this project, which demands a streamlined and efficient process.

4. RAD (Rapid Application Development):

RAD emphasizes speed through rapid prototyping and iterative development, often at the expense of long-term quality.

- **Drawbacks:**

    - While it can accelerate the initial delivery of the app, RAD often sacrifices robustness and maintainability. This poses risks for an app handling sensitive data and requiring high security, such as the reporting and evidence-collection features.
    - RAD focuses on quick fixes rather than creating a scalable and sustainable product, which is a critical need for the long-term success of this app.
    - It does not provide a well-defined framework for managing the iterative user feedback and stakeholder collaboration that this project demands.
- **Conclusion:**
  RAD's emphasis on speed over sustainability and security makes it unsuitable for a complex, high-impact application like this one.

5. XP (Extreme Programming):

XP focuses on technical excellence, promoting practices like continuous integration, frequent releases, and test-driven development.

- **Drawbacks:**
    - Although XP's principles align with agile values, it lacks a structured framework for project management, which could lead to inconsistencies in the user experience or delivery timelines.
    - The project's success heavily depends on team discipline and prior experience with agile methodologies, which might be challenging for less-experienced teams.
    - XP is highly developer-centric, often neglecting the broader stakeholder collaboration needed to align with societal and governmental expectations.
- **Conclusion:**
  While XP's technical strengths are valuable, its lack of structured project management and emphasis on developer-driven workflows make it less suitable for this project.

6. FDD (Feature-Driven Development):

FDD is focused on delivering well-defined features through incremental development.

- **Drawbacks:**
    - While it provides structure, FDD prioritizes feature delivery over iterative refinements and stakeholder collaboration. This limits the app's ability to adapt to dynamic societal and market needs.
    - FDD lacks the flexibility to accommodate evolving user feedback, which is essential for a project aiming to serve diverse user groups like shop owners, customers, and law enforcement.
    - The method's reliance on upfront planning could hinder the quick integration of new regulatory requirements or user-driven enhancements.

- **Conclusion:**
  FDD does not adequately address the need for iterative feedback and collaboration, which are critical for this app's success.

7. DSDM (Dynamic Systems Development Method):

DSDM emphasizes active user involvement and frequent delivery of functional increments.

- **Drawbacks:**
  - While it aligns with agile principles, DSDM requires extensive governance and documentation, which can burden teams with limited resources.
  - The model's process-heavy nature might slow down the delivery of core functionalities, such as real-time price verification or reward points for reporting violations.
  - Its rigid emphasis on formal structures can detract from the lightweight and flexible approach needed for this project.
- **Conclusion:**
  DSDM's documentation-heavy framework makes it less practical for a small, agile team working on a resource-constrained project.

Why Scrum Is the Best Choice:

Scrum stands out due to its:

- **Iterative and Incremental Nature:** It allows the app to evolve continuously, integrating user feedback and regulatory changes into each sprint.
- **Flexibility and Responsiveness:** Features can be prioritized and adjusted dynamically, ensuring relevance and user satisfaction.
- **Collaborative Framework:** By involving stakeholders like shop owners, customers, and law enforcement, Scrum ensures the app addresses real-world issues effectively.
- **Lightweight Process:** Its minimal overhead allows the team to focus on delivering value without being bogged down by excessive documentation or rigid phases.

By combining adaptability, collaboration, and iterative improvements, Scrum aligns perfectly with the objectives of the "Anti-Syndicate Reporting and Alert System" and the challenges it seeks to address.

2.2 Project Role Identification and Responsibilities

A successful Scrum project requires clear definition and assignment of roles to ensure smooth communication, accountability, and efficient delivery of increments. Below are the primary roles identified for the development of the project:

1. SCRUM Master:
The Scrum Master plays a critical role in maintaining the structure and principles of Scrum. Their responsibilities include:

- Ensuring the team follows Scrum practices and values throughout the project lifecycle.

- Facilitating Scrum ceremonies like sprint planning, daily stand-ups, sprint reviews, and retrospectives.
- Acting as a liaison between the development team and stakeholders, ensuring smooth communication and addressing roadblocks.
- Monitoring team performance and ensuring adherence to project timelines while fostering a collaborative environment.

2. Product Owner:
The Product Owner represents the stakeholders and ensures the app delivers maximum value by prioritizing the backlog. Their responsibilities include:

- Collaborating with stakeholders (shop owners, customers, law enforcement) to gather and refine requirements.
- Managing and prioritizing the **Product Backlog**, including features like real-time reporting, heatmaps, and multi-language support.
- Defining acceptance criteria for features to ensure they meet user expectations and business goals.
- Reviewing and providing feedback on increments to ensure alignment with objectives.

3. Development Team:
The development team comprises cross-functional members responsible for delivering the project incrementally. Responsibilities include:

- Designing, developing, and testing functionalities such as:
    - Role-specific login systems.
    - Incident reporting and testimony submission features.
    - Interactive heatmaps and transparency reports.
- Collaborating with the Product Owner to break down user stories into tasks and estimating effort for each sprint.
- Regularly demonstrating progress during sprint reviews and implementing feedback in future iterations.

4. Stakeholders:
Stakeholders are external participants whose feedback and involvement shape the project. Key responsibilities:

- Providing critical insights into the challenges faced by shop owners and customers in combating syndicate activities.
- Reviewing app features like price verification and voting systems to ensure they align with societal needs.

5. Administrators:
Administrators play an essential role in ensuring smooth system operations post-deployment. Their responsibilities include:

- Verifying shop compliance and assigning badges to those adhering to government price regulations.
- Generating transparency reports summarizing pricing violations and syndicate activities.
- Managing multi-language settings to ensure accessibility for users across Bangladesh.

6. End Users (Shop Owners, Customers, Security Personnel, Police):
End users interact with the app, contributing reports, feedback, and testimonies. Their roles include:

- **Shop Owners:** Reporting illegal fee collections or extortion cases with evidence.
- **Customers:** Verifying prices, reporting overpricing, and participating in community voting.
- **Security Personnel and Police:** Responding to flagged incidents and taking appropriate action.

This role-based structure ensures that every stakeholder contributes effectively to the project, enabling the development of a robust and impactful solution for addressing syndicate-related issues.

Functional Requirements:

1.Login Function

- The software will provide a secure login function that supports distinct login processes for Shop Owners, Customers, Security Personnel, Police, and Admins, with unique input parameters based on role.
    - For **Shop Owners** and **Customers**: - Email - Password
    - For **Security Personnel and Police**: - Employee ID - Password
    - For **Admins**: - Admin ID - Password
- The software will validate user credentials against the database.
- Users exceeding three incorrect login attempts will be locked out for one hour.
- Upon successful login, the software will present a CAPTCHA for additional verification.
- Completing the CAPTCHA successfully will grant access to the user's designated home page based on role:
    - **Shop Owners**: Shop Owner Home Page
    - **Customers**: Customer Home Page
    - **Security Personnel**: Security Personnel Home Page
    - **Police**: Police Home Page
    - **Admin**: Admin Dashboard
- A failed CAPTCHA attempt will require the user to restart the login process.

- The software will provide specific error messages for login issues, including incorrect credentials, exceeded attempts, or CAPTCHA failure.

Priority Level: High
Precondition: User must have valid login credentials.

2.Incident Reporting Function for Shop Owners

1. Shop owners will be able to report illegal fee collections or extortion directly to authorities.
2. Reports will require selecting a problem sector, such as “Illegal Fee Collection” or “Extortion.”
3. After choosing a sector, shop owners will select a specific issue category and provide a description.
4. The location of the incident must be provided for precise reporting.
5. Optional fields for uploading evidence, such as photos or videos, will be available.
6. Shop owners must enter a valid contact number for potential follow-up.

Priority Level: High

3.Price Verification and Reporting Function for Customers

1. Customers will be able to view government-approved prices for products.
2. If customers observe overpricing, they can report it by selecting the product and specifying shop location.
3. Optional evidence (e.g., photo of product or receipt) may be uploaded for verification purposes.

Priority Level: Medium

4.Community Voting and Rating Software

1. Users can "upvote" reports on recurring issues, allowing authorities to prioritize serious incidents.
2. Frequent upvotes on specific reports will indicate high-priority issues, helping track syndicate activities.

Priority Level: Medium

5.Witness Testimony Option

1. Users can provide supporting testimony for existing reports, enhancing credibility.
2. Testimonies will allow users to describe what they observed and add supporting photos or videos.

Priority Level: High

6.Incident Heatmap

1. The app will feature a live map showing locations with frequent incidents.
2. Authorities can use heatmaps to identify high-risk areas and respond accordingly.

Priority Level: Medium

7.Transparency Reports

1. The app will generate weekly or monthly reports summarizing trends in illegal fee collections and price violations.
2. Users will have access to these reports, enhancing transparency and encouraging accountability.

Priority Level: Medium

8.Shop Verification Badge Software

1. Shops following government price guidelines will be assigned verification badges.
2. Customers can easily identify compliant shops, encouraging fair practices across the market.

Priority Level: Low

9.Multi-Language Support

1. The app will support local dialects to ensure accessibility for a wider user base.
2. Language settings will include commonly spoken dialects across Bangladesh.

Priority Level: Medium

10.Safety Features for Reporters

1. A “quick exit” feature will allow reporters to quickly hide the app screen if needed.
2. This feature will help protect reporters from retaliation in potentially dangerous situations.

Priority Level: High

11.Community News Bulletin

1. The app will feature a news section with verified updates about market conditions.
2. News updates will keep users informed and aware of relevant issues affecting the market.

Priority Level: Low

12.Real-Time Incident Escalation

1. Users can label incidents as “urgent,” notifying authorities for rapid response.
2. Urgent incident details, such as location and evidence, will be highlighted for quick review by responders.

Priority Level: High

13.Reward Points for Reporting Violations

1. Users earn rewards for accurate reporting of illegal activities or price violations.
2. Rewards can be accumulated over time, encouraging more users to report issues.

Priority Level: Medium

14.Anonymous Community Feedback Surveys

1. Monthly surveys will collect anonymous feedback from users regarding the app and market conditions.
2. Survey results will inform future app updates and help identify areas for improvement.

Priority Level: Low

Diagram

Figure 1: Use case Diagram

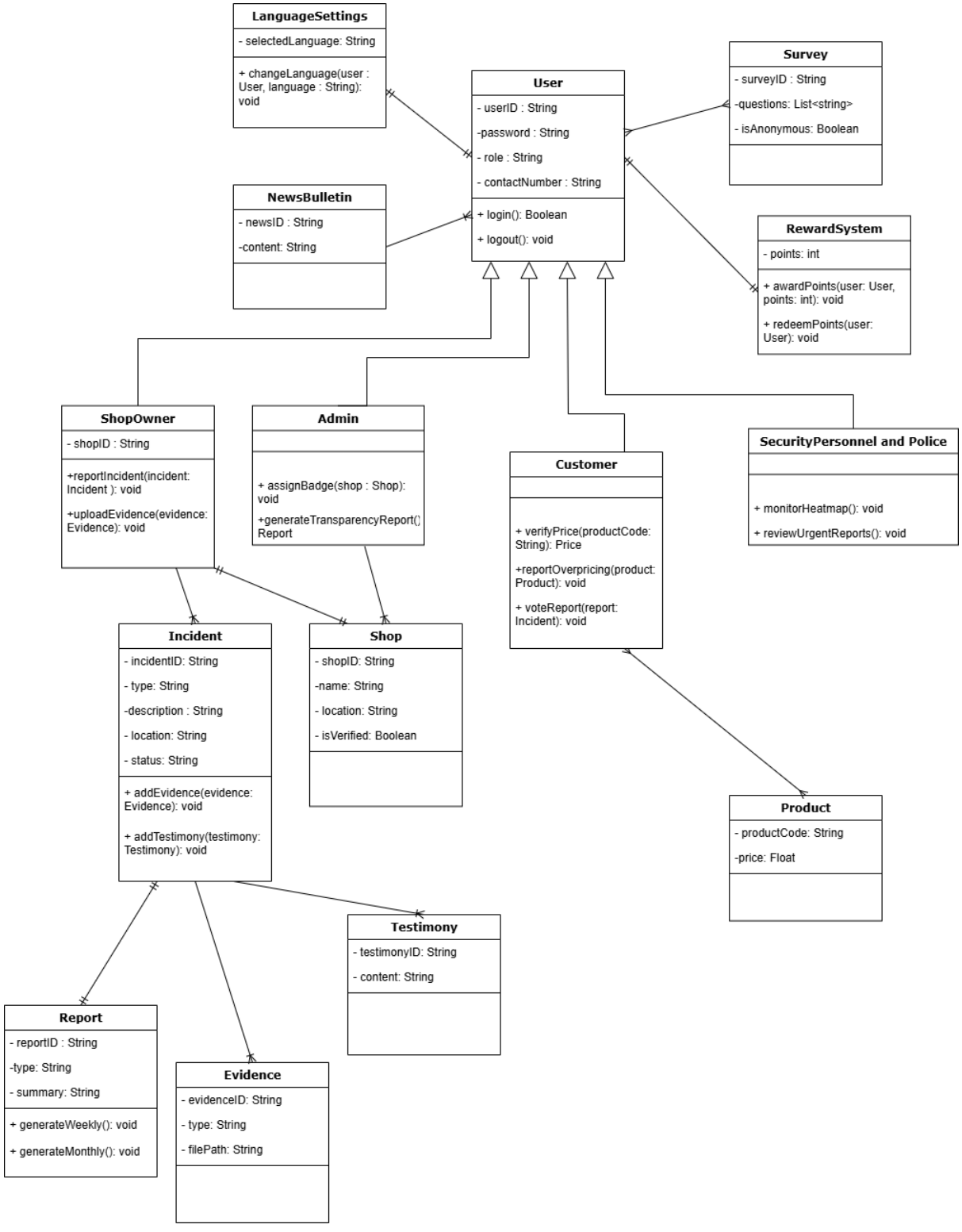


Figure 2: Class Diagram.

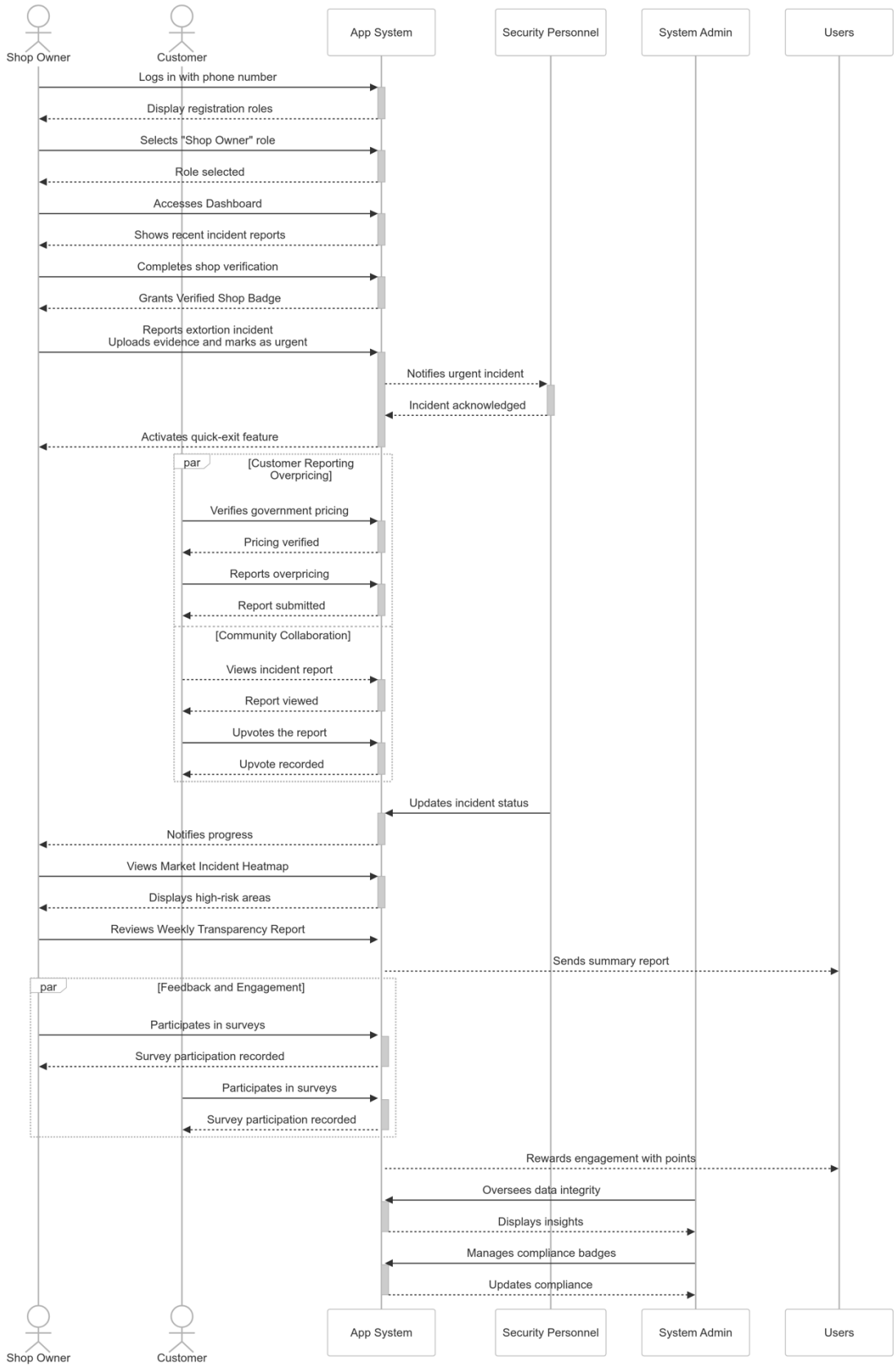


Figure 3: Sequence Diagram.

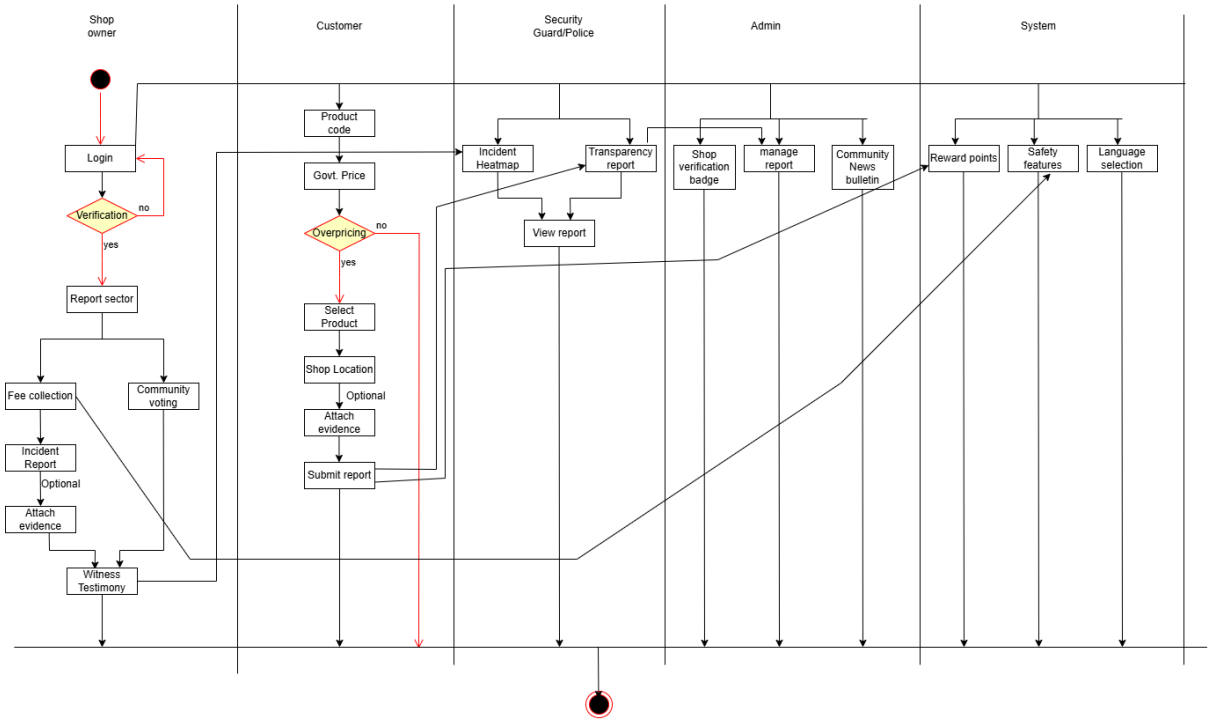


Figure 4: Activity Diagram.

Test Planning:

1. Unit Testing

- **Test Type:** White-box testing
- **Level:** Individual component level
- **Who:** Developers
- **When:** Throughout development, especially after implementing each functionality
- **Purpose:** To verify that each individual function (e.g., login validation, incident reporting, price verification) works as expected and handles various scenarios correctly.

2. Integration Testing

- **Test Type:** Black-box testing
- **Level:** Integration of modules
- **Who:** Developers or dedicated testers
- **When:** After completing the development of major components or modules
- **Purpose:** To verify that different components/modules (e.g., login systems, incident heatmap, reward system) work together seamlessly.

3. System Testing

- **Test Type:** Black-box testing
- **Level:** Entire system
- **Who:** QA team
- **When:** After integration testing and before deployment
- **Purpose:** To ensure that the entire system meets the specified functional requirements. It includes end-to-end testing of scenarios involving multiple roles (Shop Owners, Customers, Security Personnel, Police, Admins) and system interactions.

4. Security Testing

- **Test Type:** Black-box testing
- **Level:** Entire system
- **Who:** Security experts
- **When:** Before deployment and periodically thereafter
- **Purpose:** To identify vulnerabilities in the system, ensuring sensitive data such as login credentials and reports are protected against breaches.

5. User Acceptance Testing (UAT)

- **Test Type:** Black-box testing
- **Level:** Entire system
- **Who:** End-users (Shop Owners, Customers, Security Personnel, Police, Admins)
- **When:** Before deployment and after major updates
- **Purpose:** To evaluate the system's usability, functionality, and overall user experience. Ensures the system meets end-user expectations.

Why We're Conducting These Tests

- **Ensure Functionality:** Verify that each system component works correctly as per requirements.
- **Ensure Integration:** Ensure seamless functioning of interconnected modules.
- **Ensure Security:** Identify and mitigate potential vulnerabilities.
- **Ensure Usability:** Confirm the system is user-friendly and meets user needs.
- **Ensure Reliability:** Verify stable operation under different conditions.

Project Name: Anti-Syndicate Reporting And Alert System			Test Designed by: Ujjoyeni Dey	
Test Case ID: Login_1.1			Test Designed date: 12 /11 /2024	
Test Priority (Low, Medium, High): High			Test Executed by:	
Module Name: Login Session			Test Execution date:	
Test Title: Verify login with valid NID and password				
Description: Test Shop Owner login page				
Precondition (If any): Shop Owner must have valid login credentials.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the app 2. Enter NID no 3. Enter password 4. Fill the captcha 5. Press Login button	**NID:** 7014578958754 **Password:** rup@1804	Shop Owner should login into the application		
Post Condition: Shop Owner is validated with database and successfully login to account.				

Project Name: Anti-Syndicate Reporting And Alert System			Test Designed by: Ujjoyeni Dey	
Test Case ID: Login_1.2			Test Designed date: 12 / 11 /2024	
Test Priority (Low, Medium, High): High			Test Executed by:	
Module Name: Login Session			Test Execution date:	
Test Title: Verify login with valid NID and password				
Description: Test Customer login page				
Precondition (If any): Customer must have valid login credentials.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the app 2. Enter NID no 3. Enter password 4. Fill the captcha 5. Press Login button	**NID:** 8214578958764 **Password:** p@Nna0703	Customer should login into the application		
Post Condition: Customer is validated with database and successfully login to account.				

Project Name: Anti-Syndicate Reporting And Alert System			Test Designed by: Ujjoyeni Dey	
Test Case ID: Login_1.3			Test Designed date: 12 / 11 /2024	
Test Priority (Low, Medium, High): High			Test Executed by:	
Module Name: Login Session			Test Execution date:	
Test Title: Verify login with valid NID and password				
Description: Test Security Personnel login page				
Precondition (If any): Security Personnel must have valid login credentials.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the app 2. Enter NID no 3. Enter password 4. Fill the captcha 5. Press Login button	**NID:** 1814578958794 **Password:** fyddyshsgT8348487	Security Personnel should login into the application		
Post Condition: Security Personnel is validated with database and successfully login to account.				

Project Name: Anti-Syndicate Reporting And Alert System			Test Designed by: Ujjoyeni Dey	
Test Case ID: Login_1.4			Test Designed date: 12 / 11 /2024	
Test Priority (Low, Medium, High): High			Test Executed by:	
Module Name: Login Session			Test Execution date:	
Test Title: Verify login with valid NID and password				
Description: Test Police login page				
Precondition (If any): Police must have valid login credentials.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the app 2. Enter NID no 3. Enter password 4. Fill the captcha 5. Press Login button	**NID:** 2810578498334 **Password:** GkhvyhRDFHFG7478	Police should login into the application		
Post Condition: Police is validated with database and successfully login to account.				

Project Name: Anti-Syndicate Reporting And Alert System			Test Designed by: Ujjoyeni Dey	
Test Case ID: Login_1.5			Test Designed date: 12 / 11 /2024	
Test Priority (Low, Medium, High): High			Test Executed by:	
Module Name: Login Session			Test Execution date:	
Test Title: Verify login with valid NID and password				
Description: Test Admin login page				
Precondition (If any): Admin must have valid login credentials.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the app 2. Enter NID no 3. Enter password 4. Fill the captcha 5. Press Login button	**NID:** 7016738472954 **Password:** ujjoyeniRup@281804	Admin should login into the application		
Post Condition: Admin is validated with database and successfully login to account.				

Project Name: ANTI-SYNDICATE REPORTING AND ALERT SYSTEM	**Test Designed by:** Abul Bashar Saurov
Test Case ID: Shop Owner_2.1	**Test Designed date:** 11/12/2024
Test Priority (Low, Medium, High): High	**Test Executed by:**
Module Name: Illegal Fee	**Test Execution date:**
Test Title: Shop Owner Illegal Fee	
Description: Submission of illegal fee with evidence	
Precondition (If any): Shop owner should have the evidence	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the app. 2. Log in as Shop Owner. 3. Click the Illegal Fee. 4. Fill up all text box. 5. Attach the evidence.	Name: Fahim Ahamed District: Dhaka Thana: Mohammadpur Shop Location: Krishi Market, Ring Road. Shop Number: 45A, Block B Phone Number: 01854688903 Evidence: Video or picture	Shop owner should be submitted complaints successfully		

Post Condition: Shop owner should be submitted complaints successfully, and all the data should be stored in the database. The account session details are logged in the database.

Project Name: ANTI-SYNDICATE REPORTING AND ALERT SYSTEM	**Test Designed by:** Abul Bashar Saurov
Test Case ID: Shop Owner_2.2	**Test Designed date:** 11/12/2024
Test Priority (Low, Medium, High): High	**Test Executed by:**
Module Name: Incident Voting	**Test Execution date:**
Test Title: Shop Owner Incident Voting	
Description: Voting and seeing the incidents	
Precondition (If any):	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Click the Incident voting. 2. Click the details to see the incident. 3. Click the vote to set the priority level of incidents.		Shop owner should be voted successfully		

Post Condition: All the data should be stored in the database. The account session details are logged in the database.

Project Name: ANTI-SYNDICATE REPORTING AND ALERT SYSTEM	**Test Designed by:** Abul Bashar Saurov
Test Case ID: Shop Owner_2.3	**Test Designed date:** 11/12/2024
Test Priority (Low, Medium, High): High	**Test Executed by:**
Module Name: Witness	**Test Execution date:**
Test Title: Shop Owner witness	
Description: Submission of witness report	
Precondition (If any): Shop owner should have the evidence	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Click the Witness 2. Fill up all text box. 3. Attach the evidence.	Name: Fahim Ahamed District: Dhaka Thana: Mohammadpur Shop Location: Krishi Market, Ring Road. Shop Number: 45A, Block B Phone Number: 01854688903 Evidence: Video or picture	Shop owner should be submitted reports successfully		

Post Condition: Shop owner should be submitted reports successfully, and all the data should be stored in the database. The account session details are logged in the database.

Project Name: Anti-Syndicate Reporting And Alert System			Test Designed by: Ahasan Habib	
Test Case ID:Customer_3.1			Test Designed date:12/11/24	
Test Priority (Low, Medium, High): Medium			Test Executed by:	
Module Name: Customer Price Verification			Test Execution date:	
Test Title: To verify product price				
Description: Test price verification				
Precondition (If any): Customer should have valid NID and password.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to the app. 2. Login as Customer. 3.Click price verify button. 4.Submit product barcode.		Product name should be shown accurately. Product price should be shown accurately.		
Post Condition: Price is displayed to the user.				

Project Name: Anti-Syndicate Reporting And Alert System			Test Designed by: Ahasan Habib	
Test Case ID:Customer_3.2			Test Designed date:12/11/24	
Test Priority (Low, Medium, High): Medium			Test Executed by:	
Module Name: Customer Price report			Test Execution date:	
Test Title: Product price report				
Description: Test price report				
Precondition (If any): Customer should have valid NID and password.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to the app. 2.Click report button. 4.Submit product report.	Your Name: Sourov Product Name: Rice Price: 80	Customer should be submitted product report successfully.		
Post Condition: Need to verify product price first.				

Project Name: Anti-Syndicate Reporting And Alert System			Test Designed by: Ahasan Habib	
Test Case ID: Customer_4.1			Test Designed date:12/11/24	
Test Priority (Low, Medium, High): Medium			Test Executed by:	
Module Name: Customer vote			Test Execution date:	
Test Title: report voting				
Description: Test report vote.				
Precondition (If any): Customer should have valid NID and password.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to the app. 2.Click Vote button. 4.Submit vote for report.		Vote should be submitted successfully.		
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: Anti-Syndicate Reporting And Alert System			Test Designed by: Ahasan Habib	
Test Case ID: Customer_5			Test Designed date:12/11/24	
Test Priority (Low, Medium, High): Medium			Test Executed by:	
Module Name: Customer Witness			Test Execution date:	
Test Title: Witness report				
Description: Test witness report.				
Precondition (If any): Customer should have valid NID and password.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to the app. 2.Click witness button. 4.Submit witness report.	Your Name: Himel District: Bogura Thana : Bogura Sadar Shop Location: College Road Shop Number: 13C Phone Number: 01303712345 Attach Evidence: Photo or Video	Customer should submit witness report successfully.		
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: ANTI-SYNDICATE REPORTING AND ALERT SYSTEM	**Test Designed by:** Md. Sajib Mondol
Test Case ID: Police_5.1	**Test Designed date:** 11/12/2024
Test Priority (Low, Medium, High): High	**Test Executed by:**
Module Name: Incident report	**Test Execution date:**
Test Title: Police incident report	
Description: Test incident report	
Precondition (If any): Police should have valid NID and password.	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the app. 2. Log in as Police. 3. Click the incident report button. 4. Submit the incident report. .	Name: Foysal Ahamed District: Dhaka Thana: Khilkhet Shop Location: Lakecity. Shop Number: 45A, Block B Phone Number: 01643932288 Evidence: Video or picture	Police should be submitted incident report successfully		

Post Condition: Police should be submitted incident report successfully, and all the data should be stored in the database. The account session details are logged in the database.

Project Name: ANTI-SYNDICATE REPORTING AND ALERT SYSTEM	**Test Designed by:** Md. Sajib Mondol
Test Case ID: Police_5.2	**Test Designed date:** 11/12/2024
Test Priority (Low, Medium, High): High	**Test Executed by:**
Module Name: Emergency	**Test Execution date:**

Test Title: Police Emergency

Description: Test police emergency

Precondition (If any): Police should have valid NID and password.

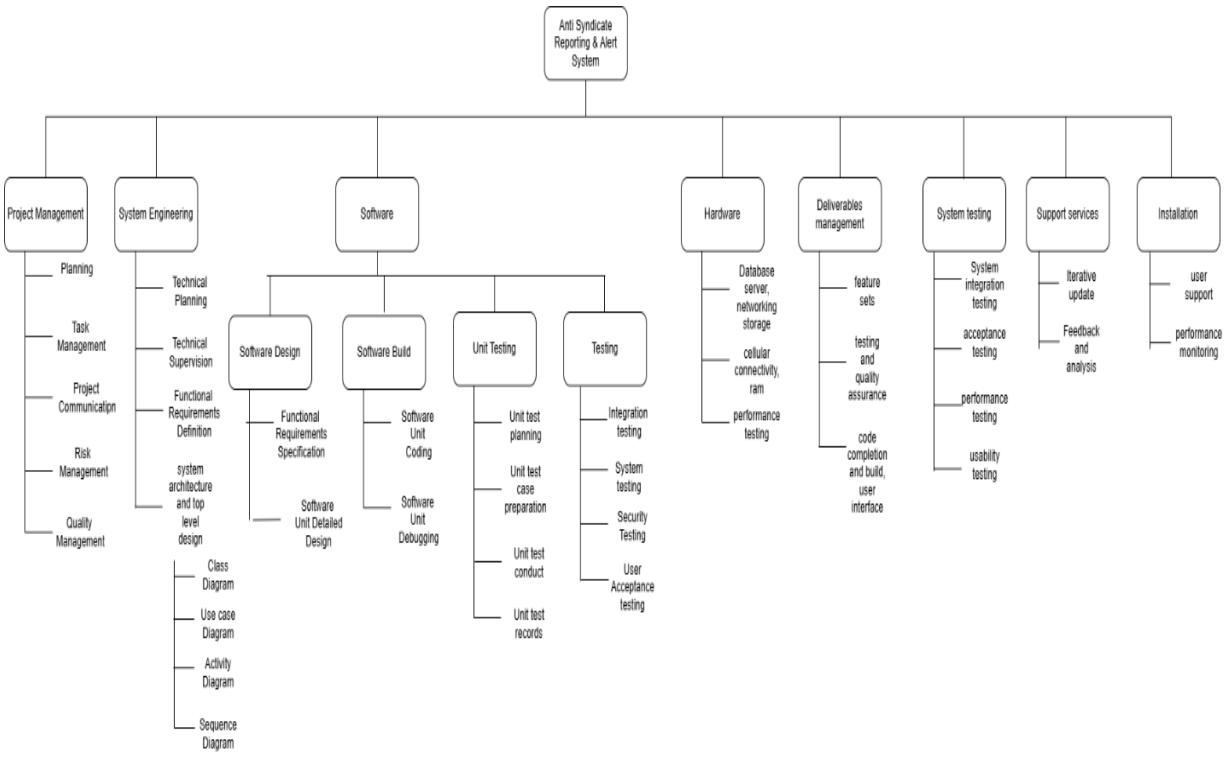
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the app. 2. Click the emergency button. 3. Submit the emergency report.	Name: Rony Ahamed District: Dhaka Thana: Khilkhet Shop Location: Kuratoli. Shop Number: 4A, Block C Phone Number: 01643932288 Evidence: Video or picture	Police should be submitted emergency report successfully		

Post Condition: All the data should be stored in the database. The account session details are logged in the database.

Project Name: Anti-Syndicate Reporting And Alert System			Test Designed by: Anik Ben Alamgir	
Test Case ID: Security_guard_12.1			Test Designed date: 15 /12 /2024	
Test Priority (Low, Medium, High): High			Test Executed by:	
Module Name: Home page			Test Execution date:	
Test Title: Verify home page				
Description: Test Security Personnel home page				
Precondition (If any): Security Personnel should have valid NID and password.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Click the Location to set Emergency area 2. Click Call Near Thana Police to call for help 3. Click the Exit to come back in Login Page		Security Personnel should set Location and call police successfully		
Post Condition: All the data should be stored in the database. The account session details are logged in the database.				

Project Name: ANTI-SYNDICATE REPORTING AND ALERT SYSTEM			**Test Designed by:** Anik Ben Alamgir	
Test Case ID: Admin 7.1			**Test Designed date:** 15/12/2024	
Test Priority (Low, Medium, High): Medium			**Test Executed by:**	
Module Name: Homepage			**Test Execution date:**	
Test Title: Admin Homepage				
Description: Managing the admin panel				
Precondition (If any): Admin should have the valid NID and Password				
Test Steps	**Test Data**	**Expected Results**	**Actual Results**	**Status (Pass/Fail)**
1. Go to the app. 2. Log in as Admin. 3. Click the details of all incident order by order. 4. Click the Manage of all incidents to see the situation of these incidents and take proper steps to solve these.		Admin should be managed complaints successfully		
Post Condition: All the data should be stored in the database. The account session details are logged in the database.				

Group #	Lab Task#	Student Name and ID	Assigned Task	Date assigned	Due Date	Comment
4	2	Ahasan Habib (22-48877-3)	System testing, Customer 3.1,3.2,4.1,5	12/11/2024	12/15/2024	
		Md. Sajib Mondol (22-48824-3)	UAT, Police 5.1, 5.2	12/11/2024	12/15/2024	
		Abul Bashar Saurov (22-48823-3)	Security test, Why we are conduct this testing, Shop Owner 2.1 to 2.3	12/11/2024	12/15/2024	
		Anik Ben Alamgir (22-47941-2)	Unit test, Security Guard 12.1, Admin 7.1	12/11/2024	12/15/2024	
		Ujjoyeni Dey (22-49001-3)	Integration test, Login test 1.1 to 1.5	12/11/2024	12/15/2024	



Group #	Lab Task#	Student Name and ID	Assigned Task	Date assigned	Due Date	Comment
4	3	Ahasan Habib (22-48877-3)	Software, Hardware	18/12/2024	18/12/2024	
		Md. Sajib Mondol (22-48824-3)	Support Services, Installation	18/12/2024	18/12/2024	
		Anik Ben Alamgir (22-47941-2)	Deliverables Management, System Testing	18/12/2024	18/12/2024	
		Ujjoyeni Dey (22-49001-3)	Project Management, System Engineering	18/12/2024	18/12/2024	

Constructive Cost Model - Based on SLOC

Let,
SLOC = 5000
Software Project Type = Organic

∴ **Effort (PM)** = $\text{Coefficient}_{\text{<effort factor>}} \times (\text{SLOC} / 1000)^{P}$
= $2.4 \times (5000 / 1000)^{1.05}$
= $13.005 \cong 13$

∴ **Development Time (DM)** = $2.5 \times PM^{T}$
= $2.5 \times 13^{0.38}$
= 6.626

∴ **Required number of People** = ST = PM / DM
= 13 / 6.626
= $1.96 \cong 2$

So, the Required Development time for our 6.626 months or almost 27 weeks and requires 2 people for the development of the project.

Timeline Chart

Weeks	Pre game phase					Sprint 1			Sprint 2			Sprint 3			Sprint 4			Sprint 5			Sprint 6			Post Game Phase			
Task: Person	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
A : Andy																											
B: Andy																											
C: Andy																											
D: Andy																											
E: Charlie																											
F: Charlie																											
G: Andy																											
H: Andy																											
I: Charlie																											
J: Andy																											

Activity Key:

A: Planning

B: Product Backlog Writing

C: High Level Design

D: Specify & Design Module

E: Code for Module

F: Test Module

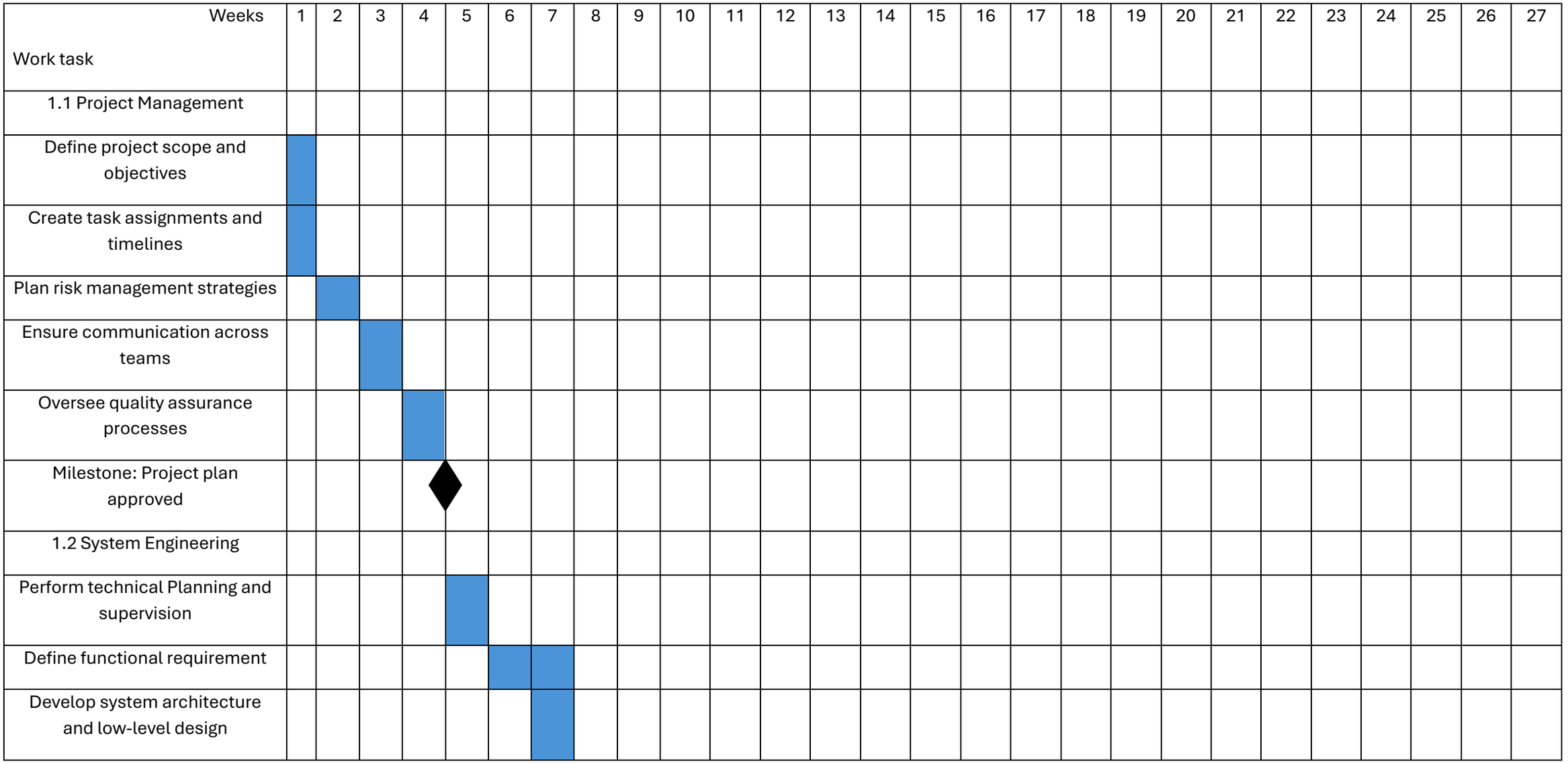
G: Product Backlog Update

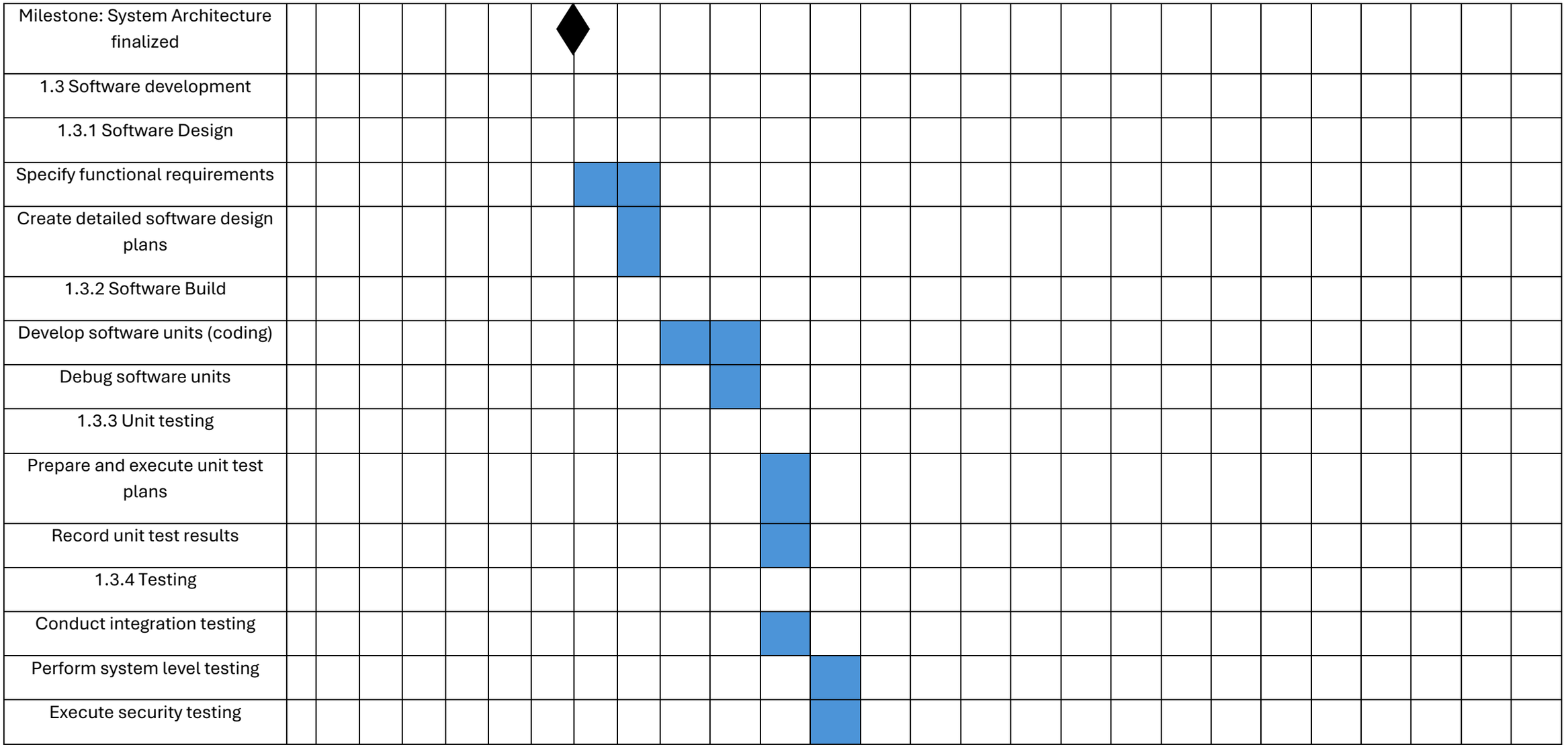
H: System Testing

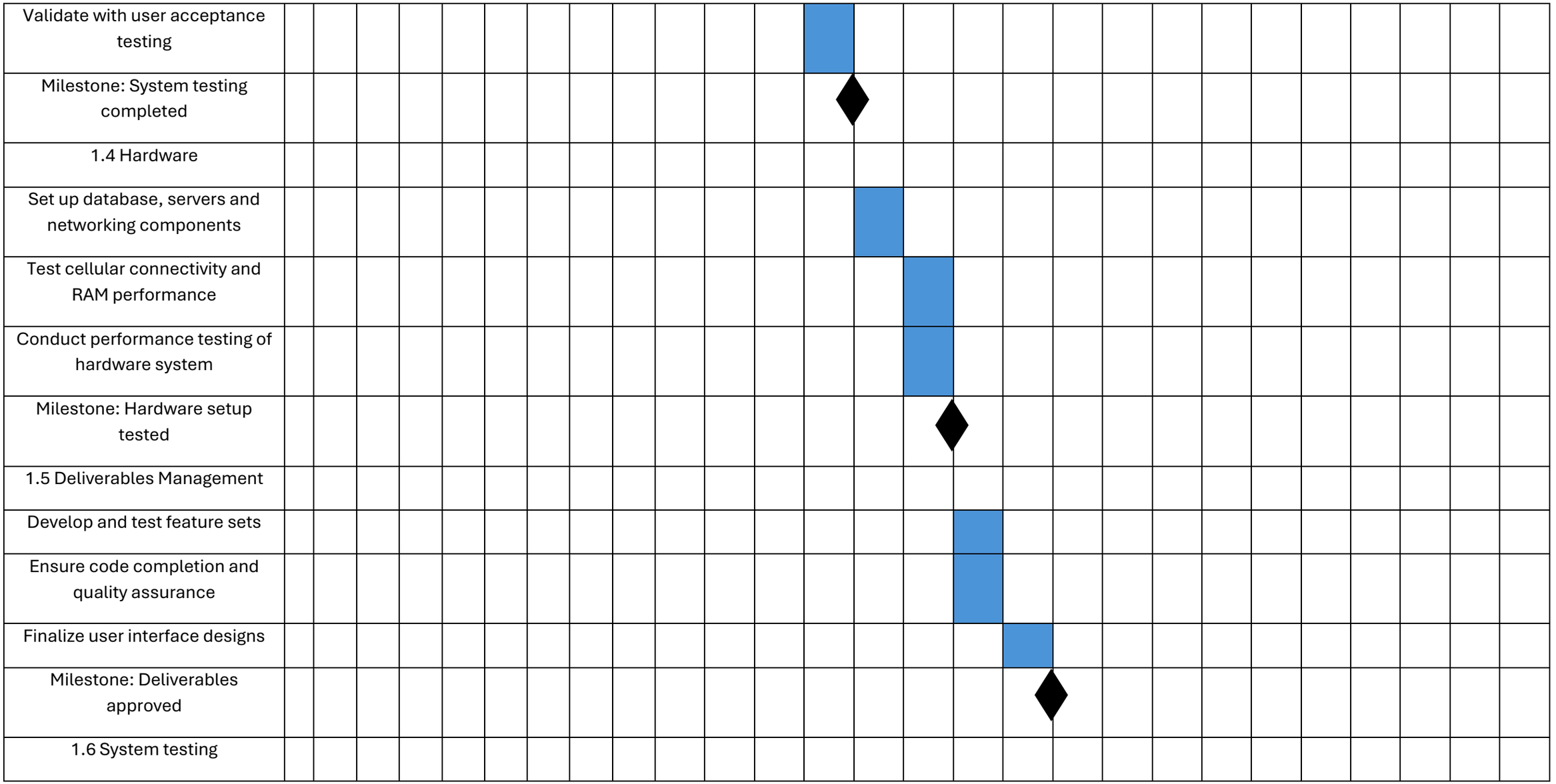
I: Integration Testing

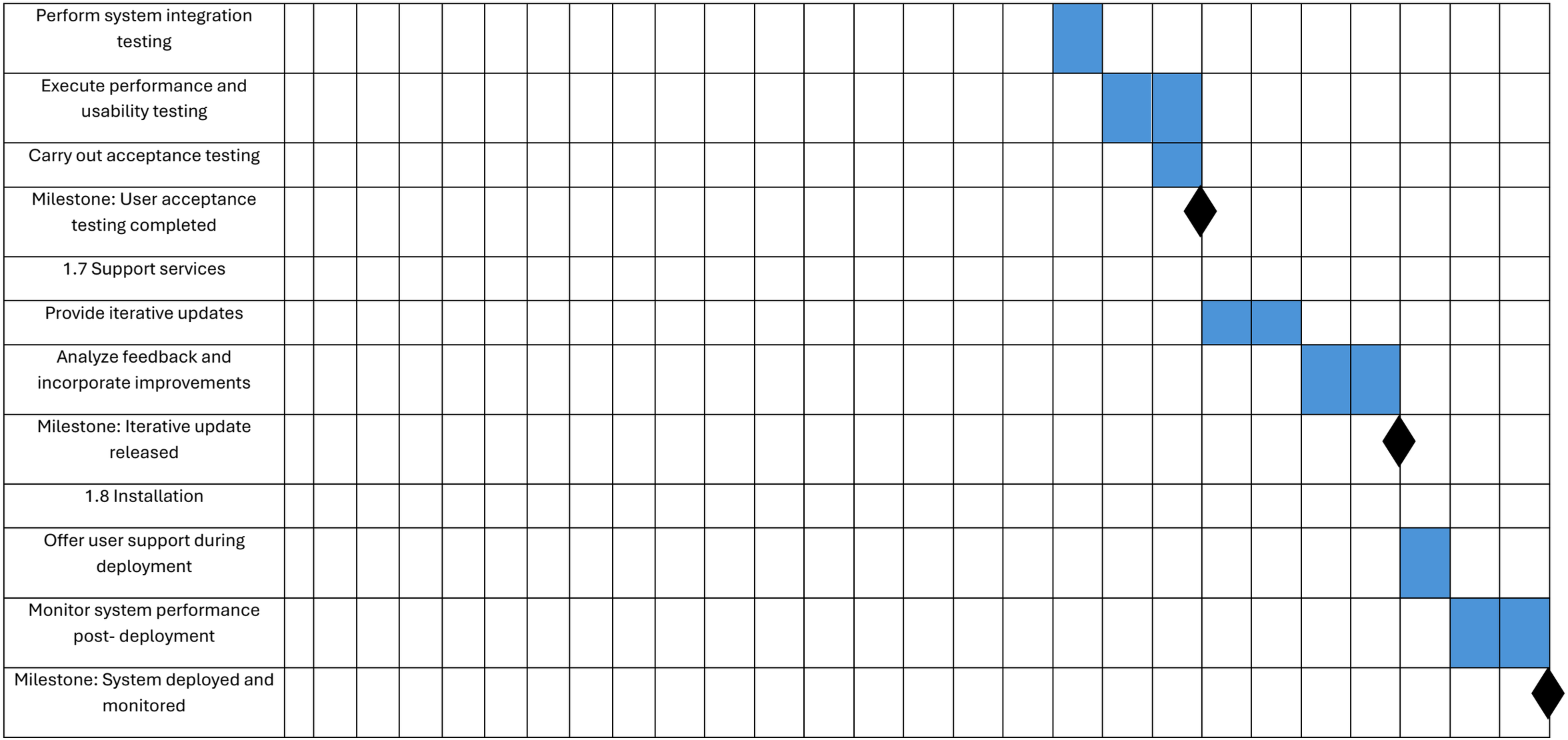
J: Documentation

Group #	Lab Task#	Student Name and ID	Assigned Task	Date assigned	Due Date	Comment
4	4	Ahasan Habib (22-48877-3)	Timeline Chart (A,B,C,D)	1/8/2025	1/13/2025	
		Md. Sajib Mondol (22-48824-3)	SLOC -PM, Timeline Chart (E,F)	1/8/2025	1/13/2025	
		Abul Bashar Sourov (22-48823-3)	SLOC -DM, Timeline Chart (G,H)	1/8/2025	1/13/2025	
		Ujjoyeni Dey (22-49001-3)	SLOC – ST, Timeline Chart (I , J)	1/8/2025	1/13/2025	


Weeks
Work task
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
1.1 Project Management
Define project scope and objectives
Create task assignments and timelines
Plan risk management strategies
Ensure communication across teams
Oversee quality assurance processes
Milestone: Project plan approved
1.2 System Engineering
Perform technical Planning and supervision
Define functional requirement
Develop system architecture and low-level design


Milestone: System Architecture finalized
1.3 Software development
1.3.1 Software Design
Specify functional requirements
Create detailed software design plans
1.3.2 Software Build
Develop software units (coding)
Debug software units
1.3.3 Unit testing
Prepare and execute unit test plans
Record unit test results
1.3.4 Testing
Conduct integration testing
Perform system level testing
Execute security testing


Validate with user acceptance testing
Milestone: System testing completed
1.4 Hardware
Set up database, servers and networking components
Test cellular connectivity and RAM performance
Conduct performance testing of hardware system
Milestone: Hardware setup tested
1.5 Deliverables Management
Develop and test feature sets
Ensure code completion and quality assurance
Finalize user interface designs
Milestone: Deliverables approved
1.6 System testing


Perform system integration testing
Execute performance and usability testing
Carry out acceptance testing
Milestone: User acceptance testing completed
1.7 Support services
Provide iterative updates
Analyze feedback and incorporate improvements
Milestone: Iterative update released
1.8 Installation
Offer user support during deployment
Monitor system performance post- deployment
Milestone: System deployed and monitored

Group #	Lab Task#	Student Name and ID	Assigned Task	Date assigned	Due Date	Comment
4	5	Ahasan Habib (22-48877-3)	System Engineering, Software development	1/8/2025	1/12/2025	
		Md. Sajib Mondol (22-48824-3)	Deliverables Management, Installation	1/8/2025	1/12/2025	
		Abul Bashar Sourov (22-48823-3)	Project Management, System testing	1/8/2025	1/12/2025	
		Ujjoyeni Dey (22-49001-3)	Hardware, Support services	1/8/2025	1/12/2025	
		Anik Ben Alamgir (22-47941-2)	Deliverables Management	1/8/2025	1/12/2025	

Task	Planned Effort	Actual Effort
1	5.0	6.0
2	5.0	7.0
3	5.0	4.5
4	5.0	5.5
5	5.0	6.0
6	5.0	6.5
7	10.0	8.5
8	5.0	4.0
9	10.0	-
10	5.0	-

BCWP

BCWS

ACWP

Total Working days = PM*22

= 13 * 22

= 286

BAC = 286.00

BCWP = 45.00

BCWS = 60.00

ACWP = 48.00

SPI = BCWP / BCWS = 45.00 / 60.00 = 0.75

SV = BCWP - BCWS = 45.00 – 60.00 = -15 person-day

CPI = BCWP / ACWP = 45.00 / 48.00 = 0.9375

CV = BCWP – ACWP = 45.00 – 48.00 = -3.00 person-day

% schedule for completion = BCWS / BAC = 60.00 / 286.00 = 20.98 %

[% of work scheduled to be done at this time]

% complete = BCWP / BAC = 45.00/ 286.00 = 15.73 %

[% of work completed at this time]

Risk Table

Risk	Category	Probability	Impact
Limited User Adoption	BU	40%	3
Technical Challenges	PS	60%	2
Data Privacy and Security Risks	PS	50%	2
Government Bureaucracy	PR	70%	1
Lack of Continuous Funding	BU	40%	3
Negative Public Perception	CU	40%	3
Dependency on government Support	PS	50%	3
Staff Inexperienced	ST	30%	2
Technology will not Meet Expectations	TE	30%	1

Lack of training on tools	DE	60%	3
Less reuse than planned	PS	55%	2
Delivery Deadline will be tightened	BU	35%	2
Size estimate may be significantly low	PS	50%	2
Natural Disaster	BU	36%	3
Scope Overlap	PS	50%	3
Integration Challenge	TE	25%	2
Lack of shareholder involvement	BU	55%	1
Ineffective communication	ST	15%	3
Larger number of users than planned	PS	25%	3
Staff turnover will be high	ST	50%	2
End users resist system	BU	35%	3
Customer will change requirement	PS	70%	2

Impact Values,

1 = Catastrophic.

2 = Critical

3 = Marginal

4 = Negligible

Risk Reduction Techniques

Risk	Risk Reduction Techniques
Limited User Adoption	Conduct extensive awareness campaigns through various channels, collaborate with local communities and leaders to promote the app, ensure user-friendly design and accessibility features, provide incentives for early adopters, and continuously gather feedback to improve user experience.
Technical Challenges	Conduct thorough technical feasibility studies before development, hire experienced developers with relevant expertise, follow best practices for security and scalability, implement robust testing procedures, regularly update, and maintain the app to address emerging technical issues and have contingency plans in place for rapid response to critical issues.
Data Privacy and Security Risks	Implement strong encryption protocols, adhere to data protection regulations such as GDPR, conduct regular security audits and vulnerability assessments, provide clear privacy policies, and obtain user consent for data collection, educate users on best practices for data security, and establish a dedicated team to monitor and respond to security incidents promptly.
Government Bureaucracy	Foster close collaboration with government agencies at all levels, engage with key stakeholders to advocate for the project's importance, streamline approval processes through clear communication and documentation, allocate sufficient resources and personnel for project management, and maintain flexibility to adapt to changing regulatory requirements or administrative procedures.
Lack of Continuous Funding	Develop a comprehensive funding strategy that includes diverse sources such as government grants, corporate sponsorships, and user subscriptions or donations, demonstrate the app's value proposition and return on investment to potential funders, establish partnerships with relevant organizations for financial support, and explore revenue-generating opportunities such as premium features or partnerships with commercial entities.
Negative Public Perception	Proactively engage with the public and media to address concerns and misconceptions, maintain transparency in project activities and decision-making processes, respond promptly and constructively to feedback and criticism, highlight success stories and positive impacts of the app through effective communication channels, and continuously strive to build and maintain trust with all stakeholders.
Dependency on Government Support	Diversify partnerships and sources of support beyond government agencies, establish clear agreements and memoranda of understanding to formalize commitments, engage with multiple government departments or agencies to reduce dependency on individual entities, and build resilience by maintaining flexibility and adaptability to changes in the political or administrative landscape.
Staff Inexperienced	Provide comprehensive training and mentoring programs for inexperienced staff members. Assign experienced team leads or mentors to guide and support less experienced team members. - Encourage continuous learning and professional development opportunities for all team members. - Consider outsourcing certain tasks to experienced contractors or consulting firms if necessary

Technology will Not Meet Expectations	Conduct thorough research and analysis of available technologies before making decisions. - Involve stakeholders in the selection and evaluation of technologies to ensure alignment with expectations. - Prototype and test technology solutions early in the development process to identify and address potential issues. - Maintain flexibility to adapt technology choices based on evolving requirements and feedback from users and stakeholders.
LACK OF TRAINING ON TOOLS	Provide comprehensive training sessions tailored to the team's skill level and roles. Develop detailed and easy-to-follow documentation for tools and processes. Encourage hands-on learning through workshops and practical exercises. Allocate mentors or experienced team members to guide others during the initial phase. Regularly assess the team's proficiency and address gaps through refresher training.
LESS REUSE THAN PLANNED	Encourage modular design practices to maximize component reusability. Develop and maintain a repository of reusable components with proper documentation. Train the team on reuse strategies and the benefits of leveraging existing assets. Periodically review and update reusable assets to align with evolving project needs. Incorporate reuse objectives in project planning and evaluate progress against goals.
DELIVERY DEADLINE WILL BE TIGHTENED	Prioritize critical tasks and eliminate non-essential activities. Adopt agile methodologies to deliver features incrementally. Increase resource allocation if feasible, such as hiring temporary staff. Automate repetitive tasks to save time and enhance efficiency. Communicate proactively with stakeholders to set realistic expectations.
SIZE ESTIMATE MAY BE SIGNIFICANTLY LOW	Perform detailed size estimation using multiple techniques such as Function Point Analysis or expert judgment. Conduct regular reviews and updates of size estimates during the project lifecycle. Add contingency buffers to account for underestimation. Engage experienced team members or external consultants for accurate estimation. Break down tasks into smaller components for better size prediction.
NATURAL DISASTER	Develop a comprehensive disaster recovery and business continuity plan. Invest in cloud-based infrastructure to ensure data accessibility and security. Conduct regular drills to test disaster readiness and response protocols. Identify and secure alternate work locations or remote working solutions. Ensure adequate insurance coverage for project-related risks.
SCOPE OVERLAP	Clearly define and document the scope of each team or project. Maintain a centralized repository of project documentation to avoid duplication. Facilitate regular coordination meetings to align on roles and responsibilities. Assign a dedicated project manager to oversee scope boundaries. Conduct periodic scope reviews to identify and address overlaps promptly.
INTEGRATION CHALLENGE	Establish clear integration standards and protocols early in the project. Use an integration platform or middleware to simplify connectivity between components. Perform thorough compatibility testing before integration. Involve cross-functional teams in planning and implementing integration. Set up a dedicated team to manage integration tasks and troubleshoot issues.

LACK OF SHAREHOLDER INVOLVEMENT	Engage stakeholders early by involving them in the project initiation phase. Provide regular updates through meetings, reports, or dashboards. Highlight the project's benefits and potential ROI to secure commitment. Address stakeholder concerns promptly to maintain trust and interest. Establish formal agreements or contracts to ensure continued involvement.
INEFFECTIVE COMMUNICATION	Adopt a structured communication plan with clear channels and protocols. Utilize collaboration tools to ensure timely and transparent information sharing. Encourage open and active feedback through regular team meetings. Train team members on effective communication skills, especially in remote setups. Appoint a dedicated communication coordinator to manage and streamline interactions.
LARGER NUMBER OF USERS THAN PLANNED	Design the system for scalability from the outset to handle additional users. Conduct stress testing to identify performance bottlenecks. Allocate sufficient infrastructure resources to accommodate increased demand. Monitor system usage patterns and adjust capacity dynamically if needed. Implement load balancing to distribute user traffic effectively.
STAFF TURNOVER WILL BE HIGH	Develop a knowledge management system to capture critical project information. Offer competitive benefits and career development opportunities to retain staff. Create a positive and inclusive work environment to boost morale. Have a succession plan in place for key roles. Engage external consultants or temporary staff to mitigate disruptions.
END USERS RESIST SYSTEM	Involve end-users early in the design and development process. Provide training and demonstrations to highlight system benefits. Address user concerns and feedback to improve system acceptance. Offer incentives or rewards for adopting the new system. Ensure ongoing support and resources to ease the transition.
CUSTOMER WILL CHANGE REQUIREMENT	Adopt agile practices to accommodate changing requirements flexibly. Maintain a detailed change management process to assess and integrate changes. Establish clear communication channels to understand the reasons behind changes. Prioritize changes based on their impact and feasibility. Include buffer time and resources to handle evolving customer needs.

Group#	Lab Task#	Student Name and ID	Assigned Task	Date assigned	Due Date	Comment
4	6	Ahasan Habib (22-48877-3)	Table, % complete, Equal Contribution in Risk table and risk reduction techniques	1/15/2025	1/21/2025	
		Md. Sajib Mondol (22-48824-3)	ACWP, CV, Equal Contribution in Risk table and risk reduction techniques	1/15/2025	1/21/2025	
		Abul Bashar Sourov (22-48823-3)	BCWS, CPI, Equal Contribution in Risk table and risk reduction techniques	1/15/2025	1/21/2025	
		Ujjoyeni Dey (22-49001-3)	BCWP, SV, Equal Contribution in Risk table and risk reduction techniques	1/15/2025	1/21/2025	
		Anik Ben Alamgir (22-47941-2)	BAC, SPI, Equal Contribution in Risk table and risk reduction techniques	1/15/2025	1/21/2025	