



## American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

### CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data

A Software Engineering Project Submitted By

Semester: Fall_24_25		Section:	Group Number: 05	
SN	Student Name	Student ID	Contribution (CO3+CO4)	Individual Marks
01	MD Abu Siyam	21-45868-3	15	
02	MD Mahdi Hossain	22-49970-3	12	
03	Abed Rahman Bhuiyan	23-50144-1	30	
04	Hedayet Ullah Patwary	22-47904-2	22	
05	Sharmin Sultana	22-48479-3	21	

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 of 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 a 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]	
	Total Marks	
CO5: Perform as an effective team member or leader in diverse team settings and solve multi-disciplinary problems in the computer science and engineering domain		
Taking project responsibility: perform assigned tasks on time independently	[5 Marks]	
Contribution to project group meetings, sharing fruitful ideas	[5Marks]	
Positive attitude towards group work, collaboration, compromise, helping others to understand their project work responsibility	[5Marks]	
Showing respect and value towards other team member's opinion	[5Marks]	

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

Student Name: **MD Mahdi Hossian**

Student ID: 22-49970-3

Contribution in Percentage (%):12

Contribution in the Project:

- Project Proposal
- Functional requirements
- Class Diagram
- Activity Diagram
- Process Model
- UI Design
- Test Plan
- Test Case
- WBS

          **Mahdi**            
Signature of the Student

Student Name: **Abed Rahman Bhuiyan**

Student ID: 23-50144-1

Contribution in Percentage (%): 30

Contribution in the Project:

- Project Proposal
- Functional requirements
- Non-Functional requirements
- Use Case Diagram
- Sequence Diagram
- Process Model
- Test Plan
- Test Case
- UI Design
- WBS
- Timeline chart – 1
- Timeline chart – 2
- COCOMO
- Risk Analysis
- Earned value analysis

*Abed*

Signature of the Student

Student Name: **Sharmin Sultana**

Student ID: 22-48479 -3

Contribution in Percentage (%): 21

Contribution in the Project:

- Project Proposal
- Functional requirements
- Non-Functional requirements
- Use Case Diagram
- Sequence Diagram
- Process Model
- Test Plan
- Test Case
- UI Design
- WBS
- Timeline chart – 1
- Timeline chart – 2
- COCOMO
- Risk Analysis
- Earned value analysis

*Sharmin*

Signature of the Student

Student Name: **Hedayet Ullah Patwary**

Student ID: 22-47904-2

Contribution in Percentage (%): 22

Contribution in the Project

- Project Proposal
- Functional requirements
- Non-Functional requirements
- Use Case Diagram
- Sequence Diagram
- Process Model
- Test Plan
- Test Case
- UI Design
- WBS
- Timeline chart – 1
- Timeline chart – 2
- COCOMO
- Risk Analysis
- Earned value analysis

*Hedayet*

Signature of the Student

Student Name: **MD Abu Siyam**

Student ID: 21-45868-3

Contribution in Percentage (%): 15

Contribution in the Project:

- Project Proposal
- Functional requirements
- Non-Functional requirements
- Activity Diagram
- Class Diagram
- Process Model
- Test Plan
- WBS
- COCOMO
- Earned value analysis

*Siyam*

Signature of the Student

# **PROJECT PROPOSAL**

## **1.1 Background to the Problem**

In Bangladesh, the transition from education to employment is often a challenging process for students and jobseekers. Despite a growing number of graduates, many face difficulties in securing suitable job opportunities due to inefficiencies in the hiring process, a lack of credible verification systems, and outdated employment tracking mechanisms. Employers struggle to verify academic qualifications and work experience, leading to delays in hiring and an increased reliance on time-consuming and error-prone manual verification methods.

### **Context and Problem Domain**

In Bangladesh, students and jobseekers face challenges in transitioning from education to employment due to fragmented academic/employment data, inefficient hiring processes, and a lack of real-time career guidance. Employers struggle to verify credentials, while government agencies lack accurate workforce statistics. This disconnects leads to unemployment, skill mismatches, and economic inefficiency.

### **Root Cause and Importance**

The core issue is the absence of a centralized platform for verified academic and employment data. Key problems include manual document verification, forged credentials, and misaligned education-industry needs. Addressing this is critical for:

- Economic Growth: Reducing unemployment and bridging skill gaps.
- Transparency: Eliminating fraud and ensuring fair hiring practices.
- Policy Effectiveness: Enabling data-driven workforce strategies.
- Social Equity: Empowering rural students with equal job opportunities.

## **Solution to the Problem**

### **Project Objective**

The CareerSync Platform aims to automate the verification, sharing, and analysis of real-time student and job data in Bangladesh. It connects students, educational institutions, employers, and government agencies to streamline recruitment, reduce fraud, and improve workforce planning.

### **Proposed Solutions**

- Centralized Digital Portfolios: Automatically update student academic records and job experiences.
- AI-Driven Job Matching: Align student skills with employer needs.
- Credential Verification: Cross-check academic records against institutional databases.
- Government Analytics Dashboard: Monitor employment trends and skill gaps for policymaking.

The Proposed solution is CareerSync leverages automation and AI to solve systemic inefficiencies. It is feasible due to Bangladesh's growing digital infrastructure and aligns with national goals for digital transformation.

### **Basic Functionalities and Impact**

- Real-Time Data Integration: Sync academic records from universities and job vacancies from HR systems.
- Fraud Detection: Flag forged certificates using AI and institutional cross-checks.

- Privacy Controls: Students approve/reject data access by employers/government.
- Mobile Accessibility: SMS alerts and offline mode for rural users.
- Skill Gap Analysis: Recommend courses to students and curriculum updates to institutions.

### **Impact**

- Employment Rates: Faster hiring and reduced job mismatch.
- Policymaking: Real-time data for workforce development strategies.
- Transparency: Trustworthy recruitment processes for employers.

### **Target Group and Benefits**

- Students: Access verified portfolios, job matches, and career guidance.
- Educational Institutions: Automate student data sharing and improve graduate employability.
- Employers: Recruit pre-verified talent and reduce hiring costs.
- Government Agencies: Develop policies using accurate employment/education statistics.

### **Contribution to scientific and Technological**

CareerSync advances research on digital credentials by developing secure, automated verification systems to combat fraudulent academic and employment records. It contributes to the ethical use of AI in recruitment by refining algorithms for unbiased job matching while ensuring fairness and transparency. Additionally, the platform addresses critical challenges in data privacy by implementing frameworks that balance centralized data transparency with granular user consent controls. The insights and outcomes from CareerSync's implementation will inform future studies on workforce management strategies and digital governance models, particularly in developing economies like Bangladesh.

## **4. Process Model:**

We have chosen the Scrum Model for developing our software CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data.

### **Reasons:**

1. Dynamic Requirements: Our platform needs to integrate various systems (student portals, HR systems, government dashboards), which may evolve over time. Scrum supports flexibility and quick adaptation.
2. Frequent Stakeholder Feedback: We have multiple stakeholders (students, employers, institutions, government) whose continuous input is critical for delivering a useful product.
3. Rapid Delivery and Iteration: CareerSync is feature-rich (e.g., AI job matching, fraud detection, analytics dashboard), and Scrum allows us to develop and test features incrementally in short sprints.
4. Team Collaboration: With a small yet skilled team, Scrum ensures transparency, daily progress tracking, and faster resolution of blockers through daily stand-ups.

## Comparison with Other Models:

### Waterfall Model

- Follows a rigid, linear structure.
- Cannot accommodate changing or evolving requirements after the initial planning.
- Not suitable for projects needing frequent updates and stakeholder feedback.

### Incremental Model

- Lacks strong mechanisms for continuous feedback and collaboration.
- Focuses more on module-by-module delivery rather than holistic development.
- Less adaptable in environments where priorities shift based on user input.

### Agile XP (Extreme Programming)

- Emphasizes coding and technical practices over broader project management.
- Less attention to stakeholder communication and documentation.
- May not fully support a multi-role environment like CareerSync (with students, employers, government, etc.).

## Roles & Responsibilities:

- Product Owner: Defines the product vision, manages the product backlog, and ensures features align with stakeholder needs.
- Scrum Master: Facilitates Scrum practices, removes obstacles, and ensures smooth sprint execution.
- Frontend Developer: Designs and develops responsive interfaces for diverse user roles (students, employers, admins).
- Backend Developer: Builds secure APIs, manages database interactions, and handles integrations with third-party systems.
- QA Developer: Conducts testing (functional, integration, security), ensures platform quality and compliance (e.g., Digital Security Act)

## Functional requirements

### 1. User Authentication & Role-Based Access

1.1 Users (students, employers, institutions, government) log in using a combination of NID/email, password, and role selection (e.g., student, employer, admin).

1.2 Failed login attempts trigger an OTP sent via SMS/email to prevent unauthorized access.

1.3 Redirect users to tailored interfaces (e.g., students see job matches, employers view candidate lists).

**Priority:** High

**Precondition:** Valid credentials and completed registration.

### 2. Role-Specific Registration & Verification

2.1 Students provide academic details (university, degree, skills) and upload initial documents (ID, photo).

2.2 Employers submit company credentials (trade license, tax ID); institutions provide accreditation proofs.

2.3 Institutions/employers undergo manual verification by admins to ensure legitimacy.

**Priority:** High

**Precondition:** Access to email/phone for verification.

### **3. Automated Data Integration**

3.1 Real-time integration with university Student Management Systems (SMS) to auto populate grades, degrees, and certifications on student profiles.

3.2 Employers' HR systems push job vacancies, salary ranges, and skill requirements directly to CareerSync.

**Priority:** High

**Precondition:** Partner institutions/employers use compatible SMS/HRIS systems.

### **4. AI-Driven Job Matching Engine**

4.1 Analyze student profiles (skills, grades, location) and job criteria (industry, salary, experience) to rank matches.

4.2 Display top candidates with compatibility scores and highlighted qualifications.

**Priority:** High

**Precondition:** Student profiles and job postings are populated.

### **5. Credential Verification & Fraud Detection**

5.1 Validate student-submitted certificates against institutional databases to detect forgeries.

5.2 Flag discrepancies (e.g., mismatched dates, unregistered institutions) and notify admins for investigation.

**Priority:** High

**Precondition:** Institutions have integrated their databases with CareerSync.

### **6. Real-Time Notification System**

6.1 Notify students when employers view their profiles, schedule interviews, or when new job matches are found.

6.2 Send instant updates when candidates apply or when academic records are verified.

6.3 Critical notifications (e.g., interview confirmations) sent via SMS for users with limited internet access.

**Priority:** High

**Precondition:** Users enable notification preferences.

### **7. Privacy & Data Control**

7.1 Students approve/reject employer access to specific profile sections (e.g., contact details, academic records).

7.2 Employers can request time-limited access to student portfolios for recruitment drives.

**Priority:** High

**Precondition:** Student profiles are created and populated.

### **8. Profile Management Tools**

8.1 Drag-and-drop interface to add certifications, internships, and projects; AI suggests optimal presentation formats.

8.2 Template-based forms to create/edit job listings with fields for deadlines, responsibilities, and benefits.

8.3 Bulk CSV/API uploads for universities to update student records (e.g., graduation status, GPA).

**Priority:** High

**Precondition:** Verified user accounts.



## 9. Admin Oversight Dashboard

9.1 Suspend/restrict accounts, assign roles (e.g., institution admin, government analyst), and resolve disputes.

9.2 Track credential validation history and flag recurring issues (e.g., frequent fraud alerts from specific institutions).

**Priority:** High

**Precondition:** Admin credentials and permissions.

## 10. Advanced Search & Filter Engine

10.1 Filtering skills (e.g., Python, graphic design), education tier (e.g., top 10 universities), and work experience (e.g., internships).

10.2 Keyword search (e.g., “remote jobs”), salary range sliders, and location-based filters (e.g., Dhaka, Chittagong).

**Priority:** High

**Precondition:** User is logged in and data is indexed.

## 11. Mobile-First Accessibility

11.1 Optimize UI for low-end smartphones with limited bandwidth (e.g., compress images, lazy-load content).

11.2 Cache recent job listings and profiles for access in connectivity-poor rural areas.

**Priority:** High

**Precondition:** Users have basic mobile devices.

## 12. Communication & Collaboration Hub

12.1 Encrypted chat between students and employers, with file-sharing support (e.g., resumes, offer letters).

12.2 Integrate with Zoom/Google Meet; auto-send calendar invites and reminders to both parties.

**Priority:** Medium

**Precondition:** Job/candidate matches exist.

## 13. Skill Gap Analysis & Recommendations

13.1 AI identifies gaps (e.g., “Learn Python for data science roles”) and suggests free/paid courses (Coursera, local platforms).

13.2 Aggregate reports show skill demand trends (e.g., “50% of employers seek UI/UX designers”) to guide curriculum updates.

**Priority:** Medium

**Precondition:** Student profiles include skill/education data.

## 14. Document Repository & Sharing

14.1 Cloud storage for certificates, transcripts, and project samples; auto-organize by category/date.

14.2 Upload company brochures, onboarding guides, and training materials for candidate access.

**Priority:** Medium

**Precondition:** Verified accounts with storage quotas.

## **15. Government Analytics Dashboard**

15.1 Interactive maps/charts showing regional unemployment rates, industry hiring trends, and graduate employability.

15.2 Download datasets in CSV/PDF formats for parliamentary reports or funding proposals.

**Priority:** Medium

**Precondition:** Government agency account with admin rights.

## **16. Compliance & Data Security**

16.1 Protect sensitive data (e.g., NID numbers, salary details) using AES-256 encryption.

16.2 Bangladesh Digital Security Act Compliance:

Audit logs for data access, mandatory consent forms, and anonymization of public reports.

**Priority:** High

**Precondition:** Platform deployment aligns with local regulations.

## **17. Third-Party API Integrations**

17.1 Pull job listings from platforms like BDJobs and LinkedIn using RESTful APIs.

17.2 Integrate with meteorological APIs to alert users in flood-prone regions about interview delays.

**Priority:** Medium

**Precondition:** Third-party APIs are accessible and documented.

## **18. Career Mentorship Program**

18.1 Pair students with industry professionals based on career interests (e.g., IT, finance).

18.2 Curate video tutorials, resume templates, and interview guides tailored to Bangladeshi job markets.

**Priority:** Medium

**Precondition:** Mentors and students complete profile setup.

## **19. Multi-Language Support**

19.1 Localized UI/UX with Bangla fonts and culturally relevant design elements.

19.2 AI-powered translation of job descriptions or academic records for non-English-speaking users.

**Priority:** Medium

**Precondition:** Language packs and translation APIs are integrated.

## **20. Disaster Recovery & Data Backup**

20.1 Store encrypted backups on geographically redundant servers (e.g., Dhaka and Chittagong).

20.2 Admins can roll back data to a previous state within 1 hour of a system failure.

**Priority:** Medium

**Precondition:** Backup infrastructure is operational.

## **21. Analytics for Workforce Development**

21.1 Predict emerging job roles (e.g., AI engineers) using historical hiring data and global trends.

21.2 how government initiatives (e.g., coding bootcamps) could reduce unemployment rates.

**Priority:** Medium

**Precondition:** Sufficient historical data is available.

## **22. Feedback & Continuous Improvement**

22.1 Prompt users to rate features (e.g., job matching accuracy) after key interactions.

22.2 Analyze feedback to prioritize feature updates (e.g., adding new filters or integrations).

**Priority:** Low

**Precondition:** Active user base.

## **Non-Functional Requirements**

### **Availability**

- System uptime must be at least 99.9%, especially during peak hours.

### **Performance**

- Job matches must be loaded within 5 seconds.
- The system shall support up to 10,000 concurrent users during peak loads without performance degradation.

### **Efficiency**

- Runs smoothly on low-end devices and slow internet.
- A minimum of 25% system resources should remain free during peak use.

### **Security (Integrity)**

- All data must be encrypted (AES-256).
- Role-based access and OTP verification must be implemented.

### **Usability**

- Interface must support Bangla & English.
- Easy to use for rural and first-time users.

### **Interoperability**

- Must integrate with platforms like BDJobs, LinkedIn, and university systems via APIs.

### **Reliability**

- The system should operate continuously for 6 months without major failure.

### **Robustness**

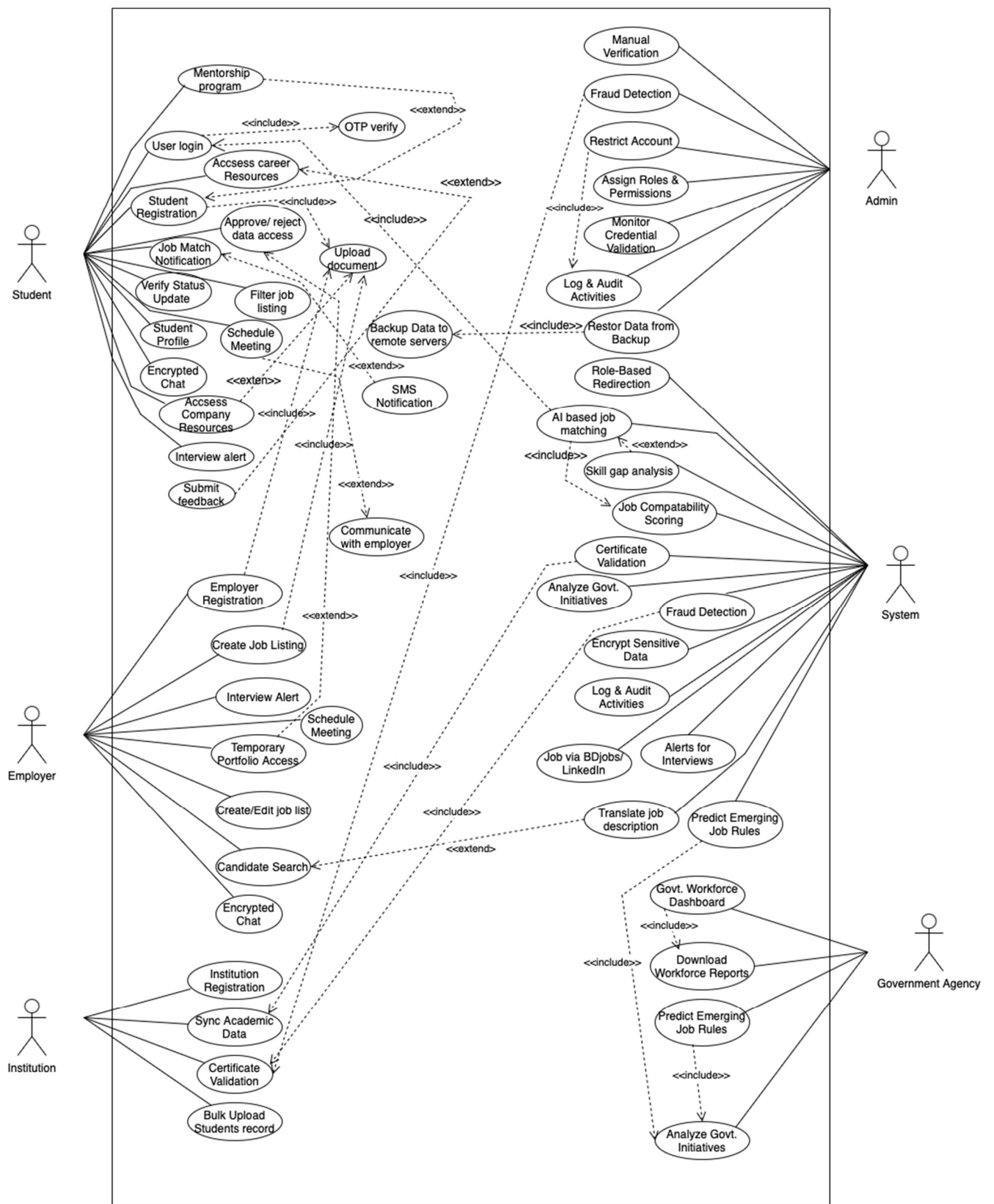
- Must handle errors gracefully (e.g., invalid inputs, data mismatches).

### **Maintainability**

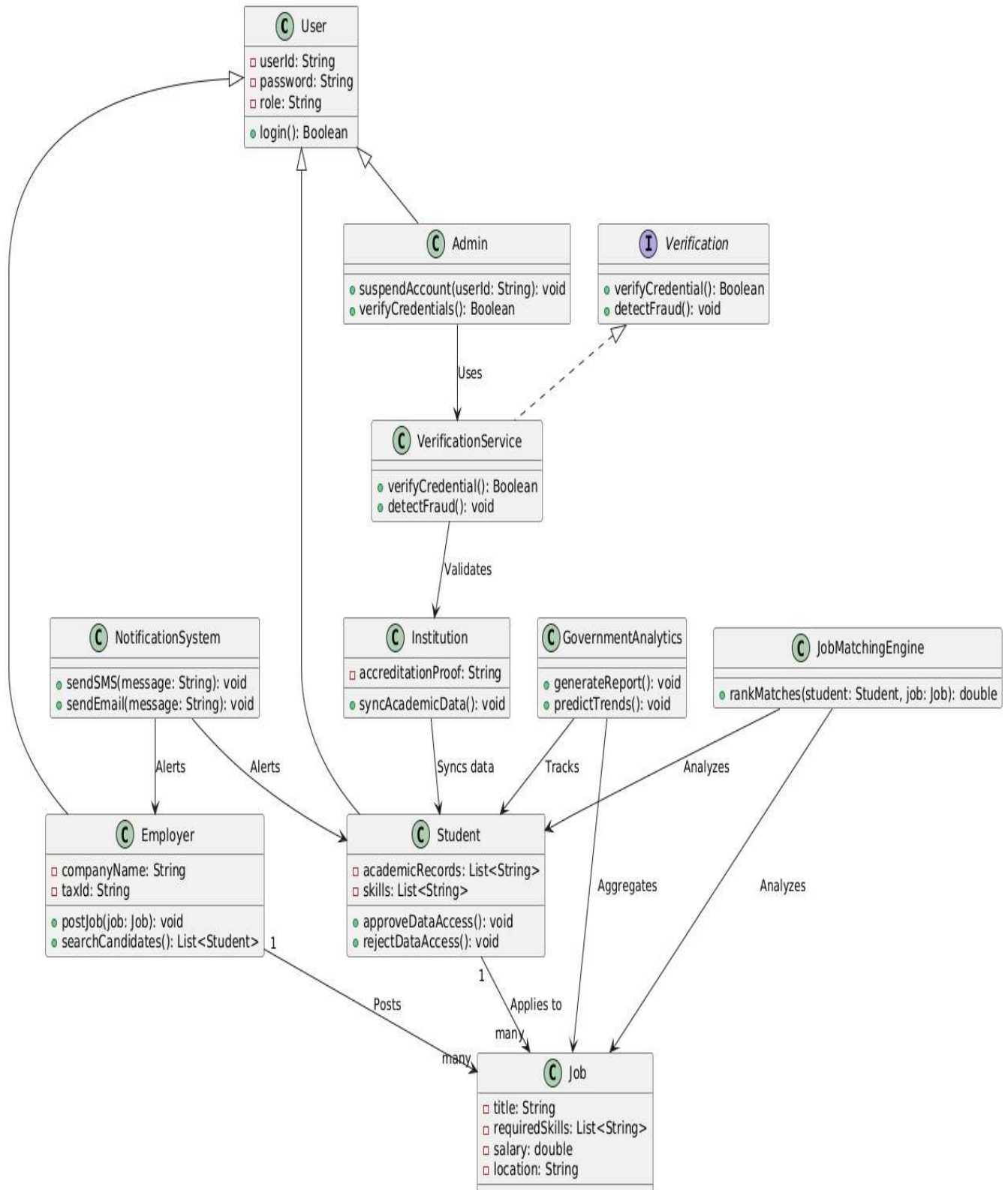
- Bugs and updates should be fixable within 48 hours.
- Code should be modular and well-documented.

### **Reusability**

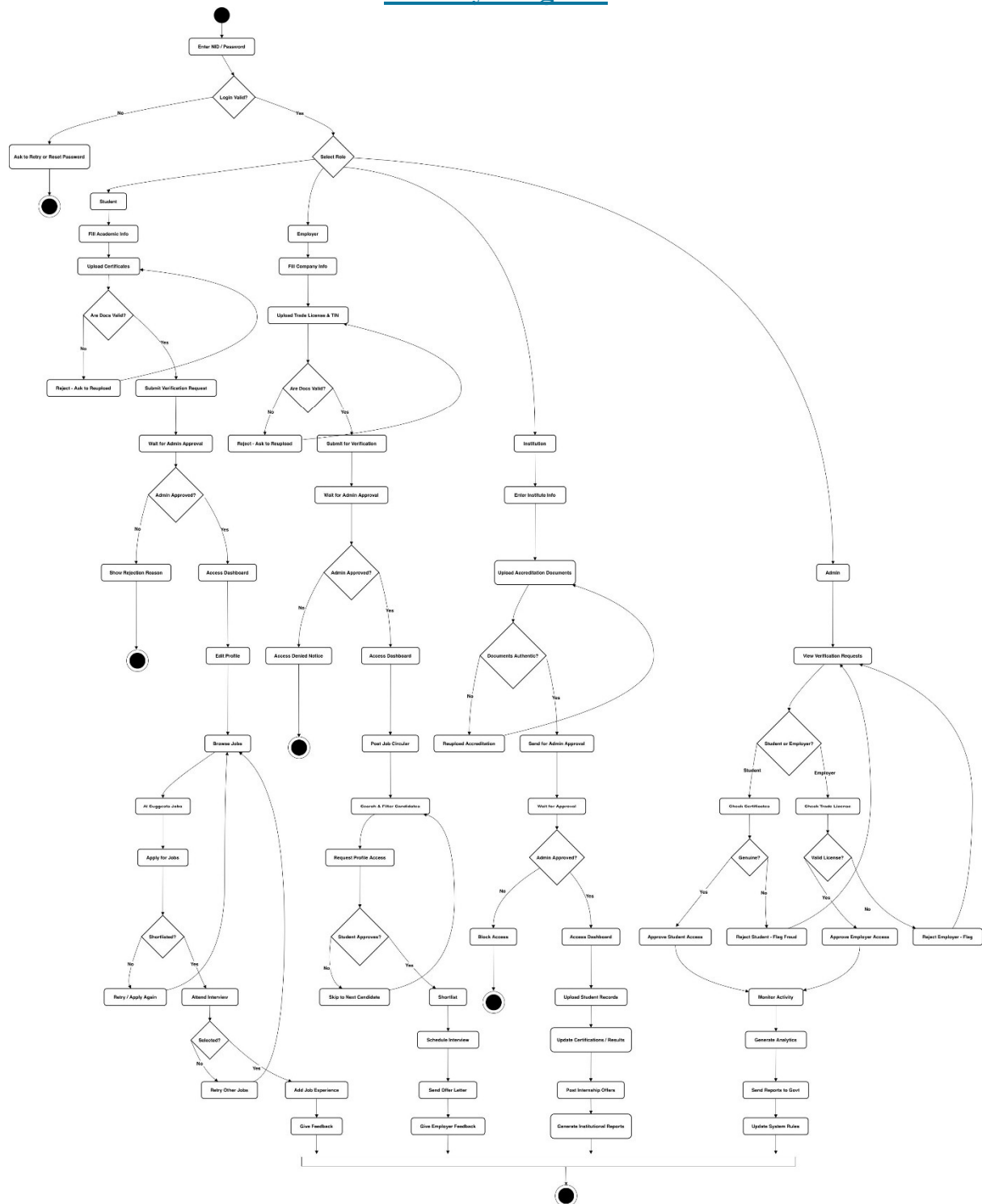
- Core components (e.g., AI matching, verification) should be reusable in future projects.

**Diagram****Use Case**

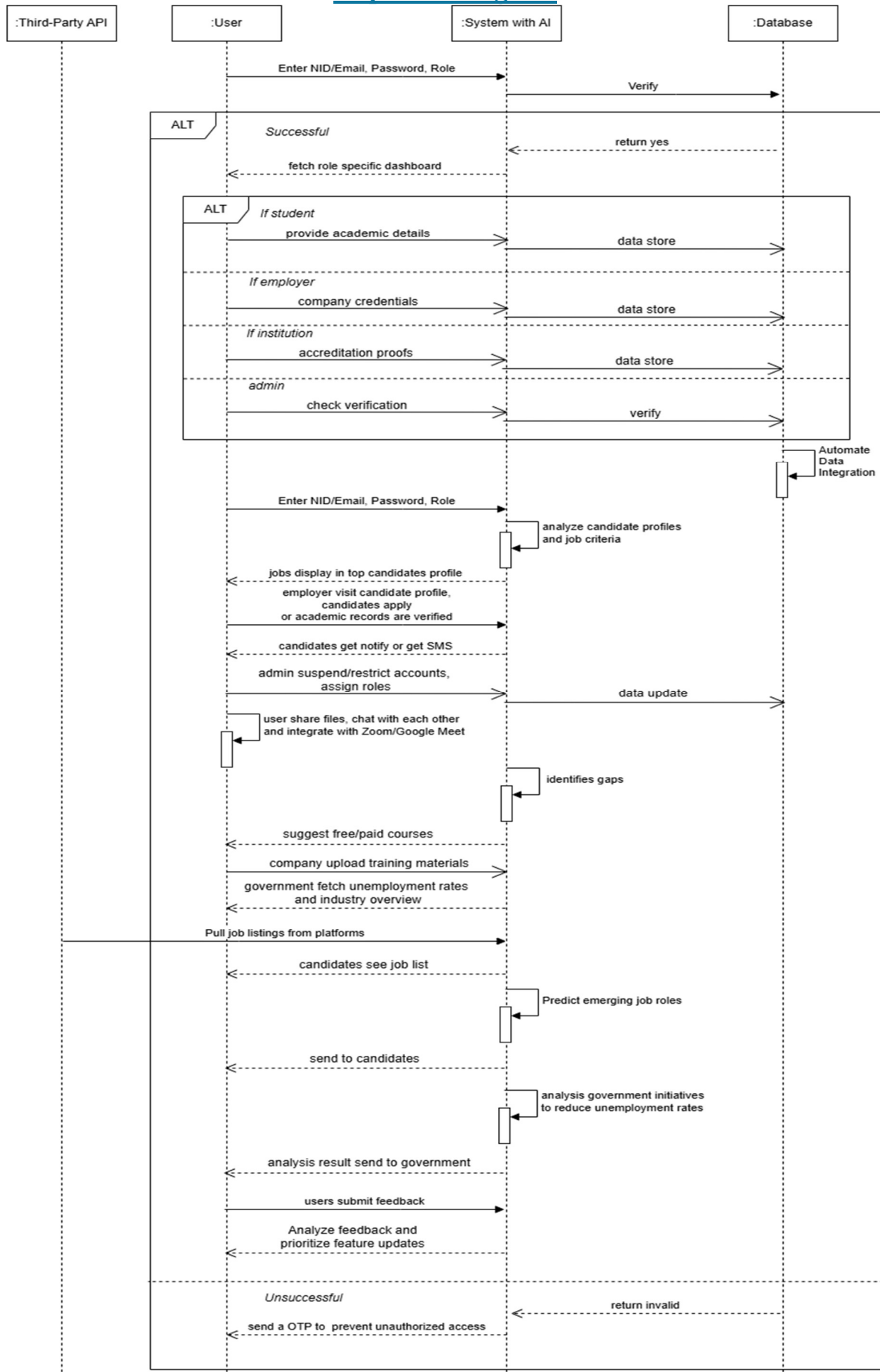
## Class Diagram



## Activity Diagram

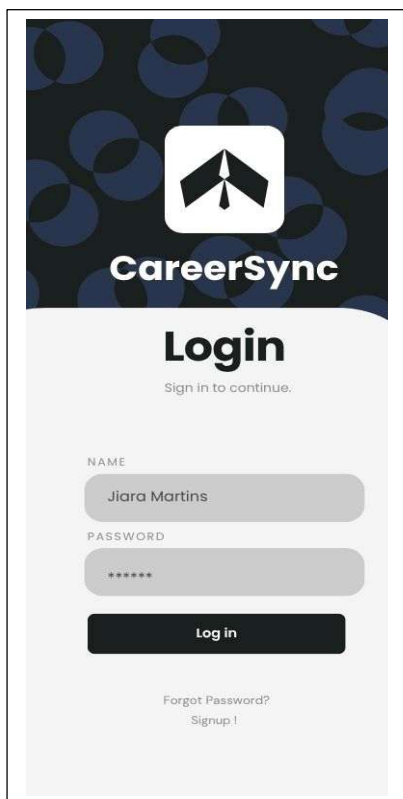


## Sequence Diagram



## UI Design

### Log in Session



**CareerSync**

## Login

Sign in to continue.

NAME

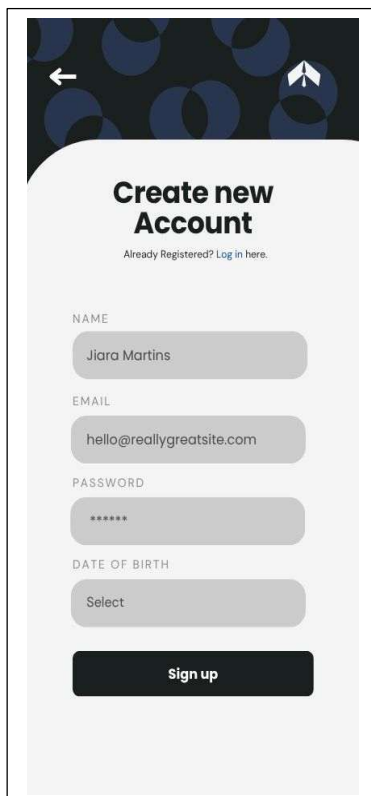
Jiara Martins

PASSWORD

\*\*\*\*\*

**Log in**

Forgot Password?  
Signup !



## Create new Account

Already Registered? [Log in here.](#)

NAME

Jiara Martins

EMAIL

hello@reallygreatsite.com

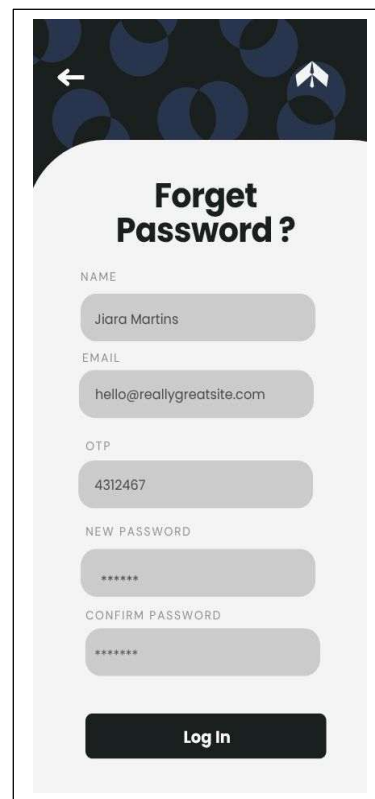
PASSWORD

\*\*\*\*\*

DATE OF BIRTH

Select

**Sign up**



## Forget Password ?

NAME

Jiara Martins

EMAIL

hello@reallygreatsite.com

OTP

4312467

NEW PASSWORD

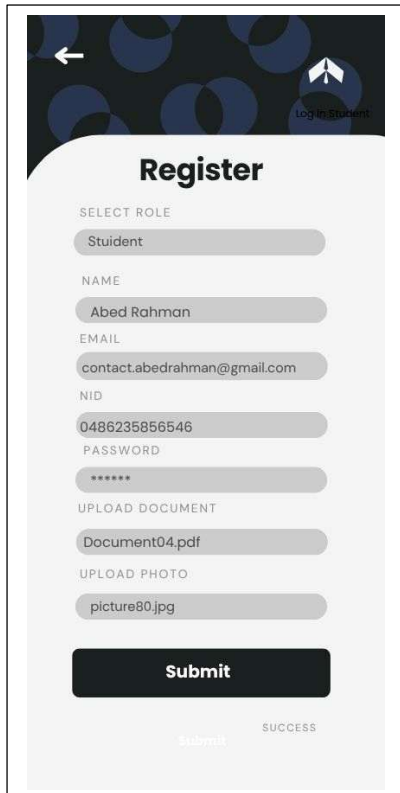
\*\*\*\*\*

CONFIRM PASSWORD

\*\*\*\*\*

**Log In**

### Student



## Register

SELECT ROLE

Student

NAME

Abed Rahman

EMAIL

contact.abedrahman@gmail.com

NID

0486235856546

PASSWORD

\*\*\*\*\*

UPLOAD DOCUMENT

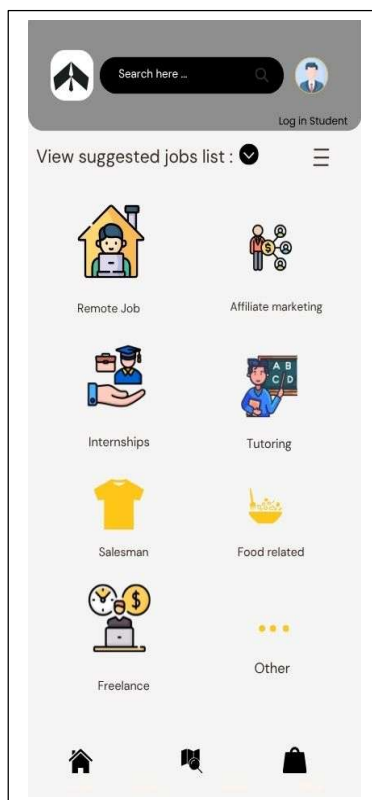
Document04.pdf

UPLOAD PHOTO

picture80.jpg

**Submit**

Submit SUCCESS



Search here ...

Log in Student

View suggested jobs list : ✓

Remote Job

Affiliate marketing

Internships

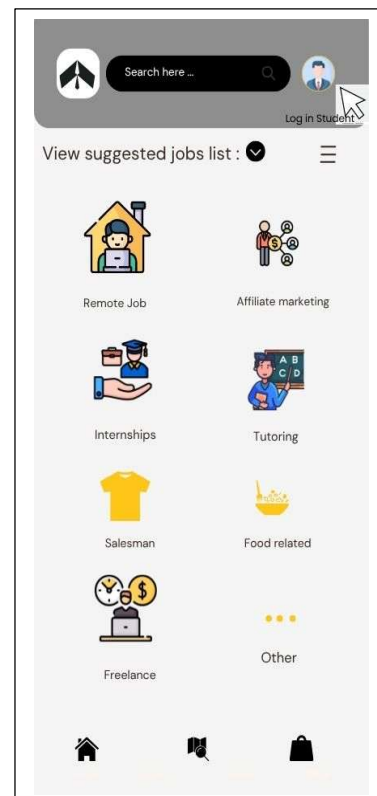
Tutoring

Salesman

Food related

Freelance

Other



Search here ...

Log in Student

View suggested jobs list : ✓

Remote Job

Affiliate marketing

Internships

Tutoring

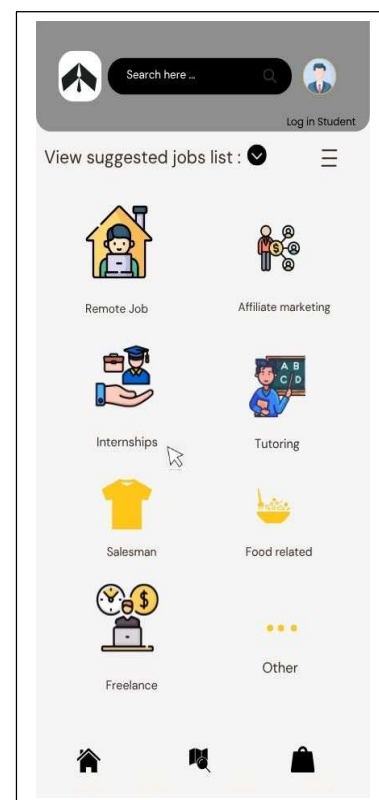
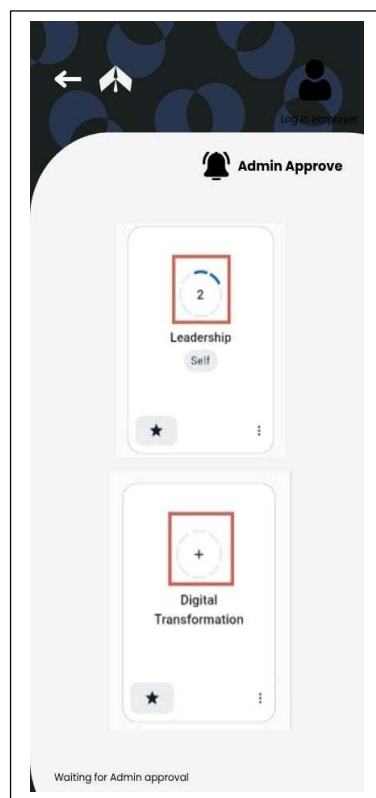
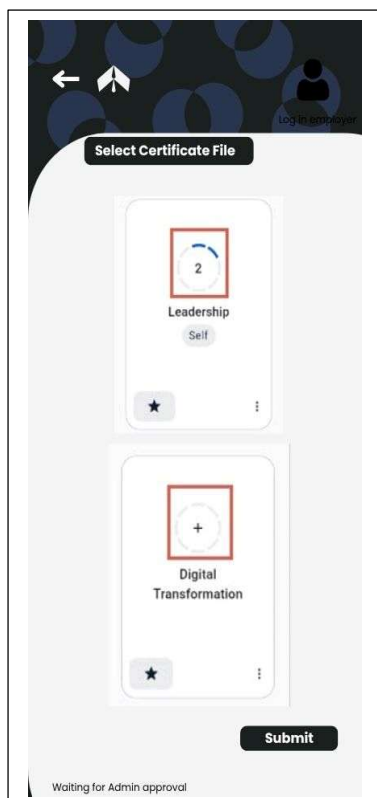
Salesman

Food related

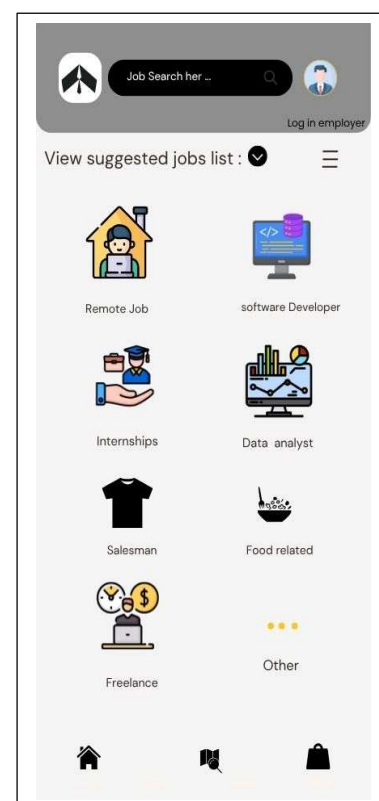
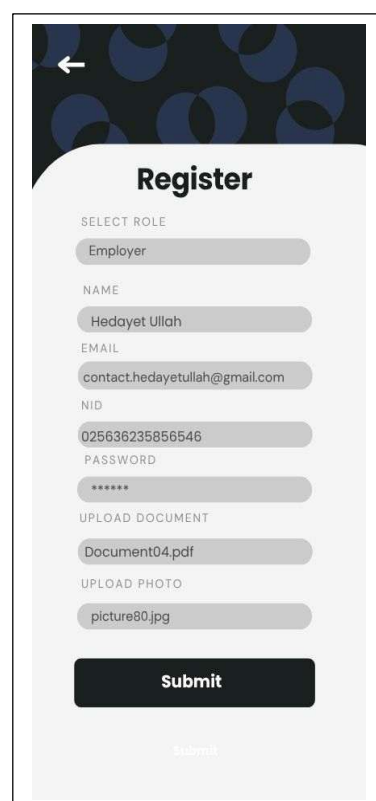
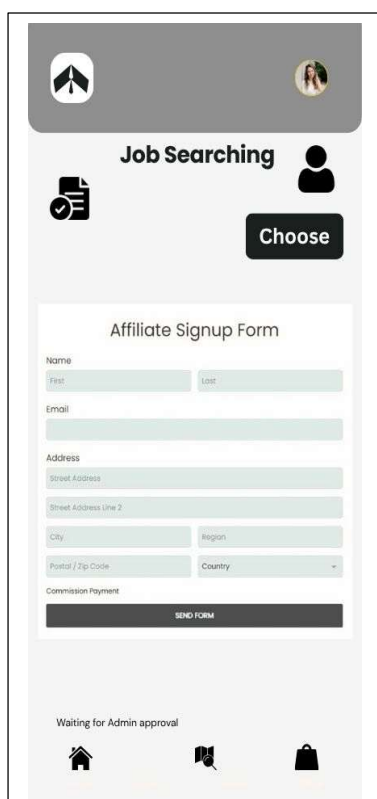
Freelance

Other





## Employer



**Post a Job**
Log in employee

Waiting for Admin approval

**Interview Call Letter**

[Company letterhead/logo]

[Date]

Subject: Invitation for interview for the Position of [Job Title]

Dear [Candidate's Name],

Thank you for your application for the position of [Job Title] at [Company Name]. We are pleased to inform you that you have been shortlisted for the next phase of our selection process.

Interview details:

- Date: [Insert Date]
- Time: [Insert Time]
- Mode of Interview: [In-Person/Virtual]
- If virtual, [Platform: e.g., Zoom/Google Meet] (Link: Insert Link)
- Venue (If in-person): [Full Address of the interview location]

Documents to Carry:

1. Updated Resume
2. [Insert specific requirements: e.g., ID Photo, Educational Certificates, Portfolio, etc.]

Interview Process Overview:

[Provide a brief description of what the candidate can expect, e.g., technical round, group discussion, etc.]

Please confirm your availability for the interview by replying to this email or contacting us at [Phone number/Email Address] by [Confirmation deadline, e.g., 24 hours before the interview].

If you have any questions or need further clarification, feel free to reach out.

We look forward to meeting you and discussing your potential contribution to our team.

Best regards,

[Your Full Name]  
[Your Designation]  
[Company Name]  
[Contact Information]  
[Website, if applicable]

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## Admin

**Login**

Sign in to continue.

NAME

PASSWORD

[Forgot Password?](#)  
[Signup!](#)

Log in Admin

Pending Registration

Review for selected employer

Approve the Registration

Admin approve

**Select Certificate File**


Leadership  
Self

Digital  
Transformation

Log in Admin

**Student Management**

Govt User



CareerSync

Login

Sign in to continue.

NAME

Govt User

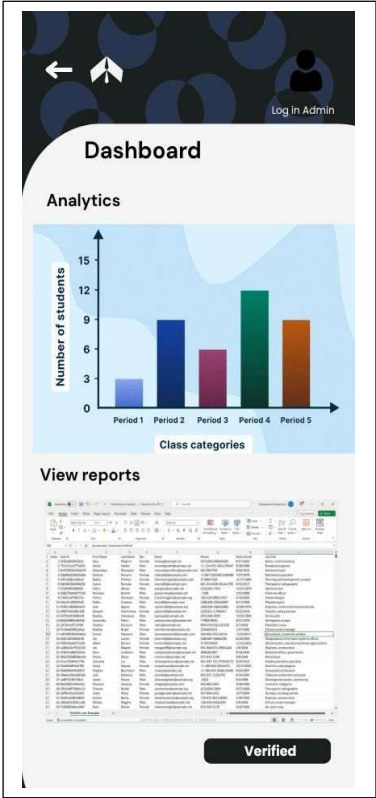
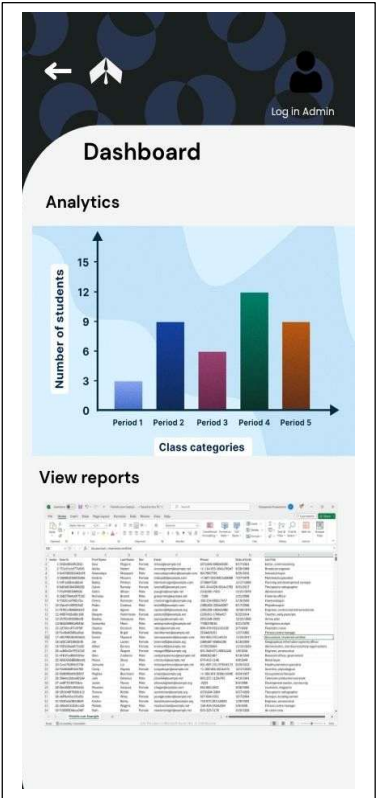
PASSWORD

\*\*\*\*\*

Log in

Forgot Password?

Signup!



## Test Plan

In our project, CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data, we will implement five key types of testing to ensure system integrity, data reliability, and stakeholder confidence. Each testing phase is integrated with our Scrum-based iterative development model, ensuring consistent quality and adaptability in every sprint.

**Unit Testing:** Developers test individual components like login, registration, job matching, and document uploads to ensure each feature works correctly.

**Integration Testing:** Checks the interaction between modules such as student profiles, employer access, document verification, and analytics to ensure smooth data flow.

**System Testing:** Full platform testing by QA team to evaluate functionality, usability, and performance across devices and roles (Student, Employer, Admin, Government).

**Stress Testing:** Simulates high-traffic scenarios like mass job applications or data uploads to verify platform stability under load.

**Acceptance Testing:** Real users (students, employers, admins) test the system to confirm it meets expectations and is ready for deployment.

This testing approach ensures that CareerSync is user-friendly and ready for real-world use.

## Test Case

### 1. Log in Session

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data		<b>Test Designed by:</b> Abed Rahman Bhuiyan		
<b>Test Case ID:</b> TC- 1.1		<b>Test Designed date:</b> 14 May, 2025		
<b>Test Priority (Low, Medium, High):</b> High		<b>Test Executed by:</b>		
<b>Module Name:</b> Login Session		<b>Test Execution date:</b>		
<b>Test Title:</b> Verify login with valid username and password				
<b>Description:</b> Ensure user can log in using correct credentials				
<b>Precondition (If any):</b> User must be registered with valid email and password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail )
1.Open the CareerSync website  2.Click on the “Login” button  3.Enter email: <a href="mailto:student@mail.com">student@mail.com</a>  4.Enter password: abc123  5. Click on “Login” button	Email:student@mail.com  Password: abc123	Homepage loads successfully  Login page is Displayed  Email field is filled  Password field is Filled  User is redirected to student dashboard		
<b>Post Condition:</b> User session is created and stored.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data	<b>Test Designed by:</b> Abed Rahman Bhuiyan
<b>Test Case ID:</b> TC- 1.2	<b>Test Designed date:</b> 14 May, 2025
<b>Test Priority (Low, Medium, High):</b> High	<b>Test Executed by:</b>
<b>Module Name:</b> Login Session	<b>Test Execution date:</b>
<b>Test Title:</b> Password reset via OTP	

<b>Description:</b> Reset password using OTP verification				
<b>Precondition (If any):</b> Registered user				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Click “Forgot Password” 2. Enter OTP 3. Set new password	Email: <a href="mailto:student@mail.com">student@mail.com</a> OTP: 548399 New password: New@123	OTP sent OTP matched Password updated		
Post Condition: User can log in with new password.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> Abed Rahman Bhuiyan	
<b>Test Case ID:</b> TC-1.3			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> High			<b>Test Executed by:</b>	
<b>Module Name:</b> Login Session			<b>Test Execution date:</b>	
<b>Test Title:</b> Verify login with invalid credentials				
<b>Description:</b> Ensure system prevents login with wrong credentials				
<b>Precondition (If any):</b> User account exists				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Open the CareerSync website  2. Navigate to Login page  3. Enter wrong email  4. Enter wrong password  5. Click Login	Email: fake@mail.com Password: abed12	Homepage loads successfully  Login form appears  Email entered  Password entered  Error message: “Invalid username or password”		
Post Condition: User is not logged in, session not created.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> Abed Rahman Bhuiyan	
<b>Test Case ID:</b> TC-1.4			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> High			<b>Test Executed by:</b>	
<b>Module Name:</b> Login Session			<b>Test Execution date:</b>	
<b>Test Title:</b> Trigger OTP after 3 failed login attempts				
<b>Description:</b>				
<b>Precondition (If any):</b>				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Attempt login with wrong password (3 times)  2.Check for OTP message in email/SMS  3. Enter OTP on prompted screen	Email: user@mail.com Password: wrong123	Login fails  OTP received in registered email/phone  User is allowed to proceed if OTP is correct		
Post Condition: Account access restored after OTP verification.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> Abed Rahman Bhuiyan	
<b>Test Case ID:</b> TC- 1.5			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> High			<b>Test Executed by:</b>	
<b>Module Name:</b> Security			<b>Test Execution date:</b>	
<b>Test Title:</b> Prevent weak password usage during registration				
<b>Description:</b> System should reject passwords that do not meet complexity rules				
<b>Precondition (If any):</b> Registration page open				
Test Steps	Test Data	Expected Results	Actual Result s	Status (Pass/Fail )

1.Enter weak password 2.Try again with strong password	Password: 12345  Password: Abc@1234	Error message: “Password too weak”  Registration form accepts password		
Post Condition: Secure password saved for the new user.				

## 2.Student

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> : Hedayet Ullah Patwary	
<b>Test Case ID:</b> TC- 2.1			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> High			<b>Test Executed by:</b>	
<b>Module Name:</b> Login Session			<b>Test Execution date:</b>	
<b>Test Title:</b> Verify new student registration with valid data				
<b>Description:</b> Confirm that student can register successfully				
<b>Precondition (If any):</b> None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Visit CareerSync app 2. Click on “Register” 3. Select Role: Student 4.Fill details (Name, Email, NID, Password) 5.Upload Documents (ID, photo) 6.Click Submit	Name: Rana Email: abed@mail.com NID: 99999 Password: Test@123  .jpg/.pdf files	Homepage loads  Registration page opens  student form displayed  Form is filled  Upload successful  Success message shown		
Post Condition: Student data saved in DB; redirected to login page.				



<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> : Hedayet Ullah Patwary	
<b>Test Case ID:</b> TC-2.2			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> High			<b>Test Executed by:</b>	
<b>Module Name:</b> Job Matching Engine			<b>Test Execution date:</b>	
<b>Test Title:</b> Verify that job matches are shown for student				
<b>Description:</b> Ensure AI suggests job postings based on profile				
<b>Precondition (If any):</b> Student profile must be complete with education and skills				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail )
1.Login as student  2.Click on “Find Jobs” or “Match Me” button  3.View suggested jobs list  4.Click on a matched job	Email:user@mail.com  Password:  abc123	Student dashboard opens  AI engine processes student data  Jobs displayed with match scores (e.g., 87%)  Full job details displayed		
Post Condition: Match results cached in system for reuse.				

<b>Project Name:</b>	<b>Test Designed by:</b> Hedayet Ullah Patwary
<b>Test Case ID:</b> TC- 2.3	<b>Test Designed date:</b> 14 May, 2025
<b>Test Priority (Low, Medium, High):</b> Medium	<b>Test Executed by:</b>
<b>Module Name:</b> Profile	<b>Test Execution date:</b>
<b>Test Title:</b> Edit and update student profile	
<b>Description:</b> Student can update personal and academic data	
<b>Precondition (If any):</b> Student must be logged in	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Login as Student 2. Go to “Profile” section 3. Edit fields 4. Click “Update”	Email: <a href="mailto:user@mail.com">user@mail.com</a>  Add Skill: C++	Dashboard opens  Current data displayed  Fields editable  Message: “Profile updated successfully”		
Post Condition: Updated info is saved and shown in profile.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> Hedayet Ullah Patwary	
<b>Test Case ID:</b> TC- 2.4			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> High			<b>Test Executed by:</b>	
<b>Module Name:</b> Document Upload			<b>Test Execution date:</b>	
<b>Test Title:</b> Upload certificate and verify storage				
<b>Description:</b> Ensure certificate is saved and marked “Unverified”				
<b>Precondition (If any):</b> Logged-in student				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to “Documents” tab 2. Click “Upload” 3. Select certificate file 4.Click Save	File: diploma.pdf	Document list opens  Upload dialog opens  File uploaded  Shown in document list with status: “Unverified”		
Post Condition: Document stored and queued for validation.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data		<b>Test Designed by:</b> Hedayet Ullah Patwary		
<b>Test Case ID:</b> TC- 2.5		<b>Test Designed date:</b> 14 May, 2025		
<b>Test Priority (Low, Medium, High):</b> Medium		<b>Test Executed by:</b>		
<b>Module Name:</b> Job Search		<b>Test Execution date:</b>		
<b>Test Title:</b> Use filter to view jobs in a selected location				
<b>Description:</b> Students should see jobs only from chosen location				
<b>Precondition (If any):</b> Jobs from multiple locations exist				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail )
1.Login as student 2.Go to Job Search 3.Apply location filter	Email: <a href="mailto:student@mail.com">student@mail.com</a> Location: Dhaka	Dashboard loads  All job listings shown  Only Dhaka jobs shown		
<b>Post Condition:</b> Filter preferences saved in session				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data		<b>Test Designed by:</b> Hedayet Ullah Patwary		
<b>Test Case ID:</b> TC-2.6		<b>Test Designed date:</b> 14 May, 2025		
<b>Test Priority (Low, Medium, High):</b> Medium		<b>Test Executed by:</b>		
<b>Module Name:</b> AI Assistant		<b>Test Execution date:</b>		
<b>Test Title:</b> Suggest courses for skill improvement				
<b>Description:</b> AI suggests personalized courses based on student profile				
<b>Precondition (If any):</b> Student profile must include skills				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Login as Student  2.Click on “Skill Recommendations”	Email:student@mail.com Password: abc123  Student has only MS Word	Student dashboard opens  AI suggests courses like Excel, PowerPoint, etc.		

	skill			
Post Condition: Suggested course links are stored in the student's profile dashboard.				

### 3. Employer

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by</b> Hedayet Ullah Patwary	
<b>Test Case ID:</b> TC- 3.1			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> High			<b>Test Executed by:</b>	
<b>Module Name:</b> Registration			<b>Test Execution date:</b>	
<b>Test Title:</b> Verify new employer registration with valid company data				
<b>Description:</b> Employer should be able to register successfully				
<b>Precondition (If any):</b> None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail )
1.Go to CareerSync app 2.Click “Register” 3.Select role: Employer 4.Fill company details 5.Upload documents 6.Submit form	Company Name: Tech Ltd Email: hr@tech.com License: 12345 Password: Admin@123 Trade License (PDF), Logo (JPG	Homepage loads  Registration form Opens  Employer fields Displayed  Fields validated Uploaded  Message: “Waiting for Admin approval”		
Post Condition: Employer is in pending approval state.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> Hedayet Ullah Patwary	
<b>Test Case ID:</b> TC- 3.2			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> High			<b>Test Executed by:</b>	
<b>Module Name:</b> Job Module			<b>Test Execution date:</b>	

<b>Test Title:</b> Employer posts a new job				
<b>Description:</b> Validate job posting is stored and visible				
<b>Precondition (If any):</b> Employer must be approved and logged in				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Login as Employer 2. Click "Post a Job" 3. Fill job details 4. Click Submit	Email: hr@tech.com Password: Admin@123  Title: Software Intern Salary: 10k Skills: Java, SQL	Dashboard opens  Job form opens  Data accepted  Job posted successfully		
Post Condition: Job becomes available for student matching.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> Sharmin Sultana	
<b>Test Case ID:</b> TC-3.3			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> High			<b>Test Executed by:</b>	
<b>Module Name:</b> Notifications			<b>Test Execution date:</b>	
<b>Test Title:</b> Notify students of interview scheduled by employer				
<b>Description:</b> The student should be notified by email/SMS when an employer schedules an interview				
<b>Precondition (If any):</b> Employer and student must be connected via job match				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail )
1)Login as Employer  2)Open matched student profile  3)Click “Schedule Interview”  4)System sends notification	Email: hr@tech.com Password: Admin@123  Date: 20 May Time: 10:00 AM  Channel: Email/SMS	Employer dashboard opens  Student info loaded  Interview request saved  Student receives notification with		

		details		
Post Condition: Interview log entry is created and visible to both parties.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> Sharmin Sultana	
<b>Test Case ID:</b> TC-3.4			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> Medium			<b>Test Executed by:</b>	
<b>Module Name:</b> Access Control			<b>Test Execution date:</b>	
<b>Test Title:</b> Employer can view allowed student data only				
<b>Description:</b> Students control visibility of profile fields				
<b>Precondition (If any):</b> Student grants access				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail )
1. Student shares profile access  2. Employer clicks on student name	Contact details shared	Access granted  Only approved sections visible		
<b>Post Condition:</b> View action logged for tracking.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> Sharmin Sultana	
<b>Test Case ID:</b> TC-3.5			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> Medium			<b>Test Executed by:</b>	
<b>Module Name:</b> File Access			<b>Test Execution date:</b>	
<b>Test Title:</b> Employer downloads student’s resume				
<b>Description:</b> Resume should be downloadable in PDF				
<b>Precondition (If any):</b> Resume uploaded and employer has access				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail )

1. Employer opens student profile		Profile loads		
2. Click on “Download Resume”		Resume downloaded in PD		
Post Condition: Download action logged.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> Sharmin Sultana	
<b>Test Case ID:</b> TC-3,6			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> Medium			<b>Test Executed by:</b>	
<b>Module Name:</b> Communication			<b>Test Execution date:</b>	
<b>Test Title:</b> Send and receive encrypted chat messages				
<b>Description:</b> Secure messaging works properly				
<b>Precondition (If any):</b> Job match exists between employer and student				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Click on “Messages” 2.Type and send message 3.Student replies	Message: Hello, please join interview  Message: Okay, received	Chat window opens  Message sent  Message received		
Post Condition: Chat logs encrypted and saved.				

#### 4. Admin

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data	<b>Test Designed by:</b> Sharmin Sultana
<b>Test Case ID:</b> TC-4.1	<b>Test Designed date:</b> 14 May, 2025
<b>Test Priority (Low, Medium, High):</b> High	<b>Test Executed by:</b>
<b>Module Name:</b> Admin Panel	<b>Test Execution date:</b>
<b>Test Title:</b> Admin approves a new employer account	
<b>Description:</b> Employer is approved after manual verification	
<b>Precondition (If any):</b> Employer account must be in pending state	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Login as Admin 2. Go to “Pending Registrations” 3.Click on review for selected employer 4.Approve the registration	admin@careersync.com	Admin dashboard loads  List of pending employers displayed  Details shown  Status changes to “Active”		
Post Condition: Employer can now log in and post jobs.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> MD Mahdi Hossain	
<b>Test Case ID:</b> TC-4.2			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> High			<b>Test Executed by:</b>	
<b>Module Name:</b> Validation Admin			<b>Test Execution date:</b>	
<b>Test Title:</b> Detect forged certificate uploaded by student				
<b>Description:</b> System should automatically detect invalid documents that do not match institution records				
<b>Precondition (If any):</b> Fake certificate uploaded				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail )
1) Student uploads certificate  2)System runs auto-verification  3)Flag the certificate  4)Notify Admin	Certificate: BSc in CSE (forged) Student ID: 88901	Certificate uploaded and stored  Mismatch with institution database  Status changed to “Fraud Suspected”  Admin receives alert for manual		



		review		
Post Condition: Student has uploaded a suspicious or fake certificate				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data		<b>Test Designed by:</b> MD Mahdi Hossain		
<b>Test Case ID:</b> TC-4.3		<b>Test Designed date:</b> 14 May, 2025		
<b>Test Priority (Low, Medium, High):</b> Medium		<b>Test Executed by:</b>		
<b>Module Name:</b> Admin Panel		<b>Test Execution date:</b>		
<b>Test Title:</b> Upload student records using bulk CSV file				
<b>Description:</b> The admin should be able to upload multiple student records in one go using a CSV template				
<b>Precondition (If any):</b> Admin is logged in and has prepared a valid CSV file				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1)Login as Admin 2)Go to “Student Management” > “Upload CSV” 3)Choose and upload file 4)Click “Submit Upload”	Email: <a href="mailto:admin@careersync.com">admin@careersync.com</a>  File: students_bulk.csv (50 entries)  Format: Name, Email, NID, GPA, Skills	Admin dashboard opens  File upload page appears  File is validated  50 students are added to the system		
Post Condition: All students appear in the database and can log in using initial credentials.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data		<b>Test Designed by:</b> MD Mahdi Hossain		
<b>Test Case ID:</b> TC-5.1		<b>Test Designed date:</b> 14 May, 2025		

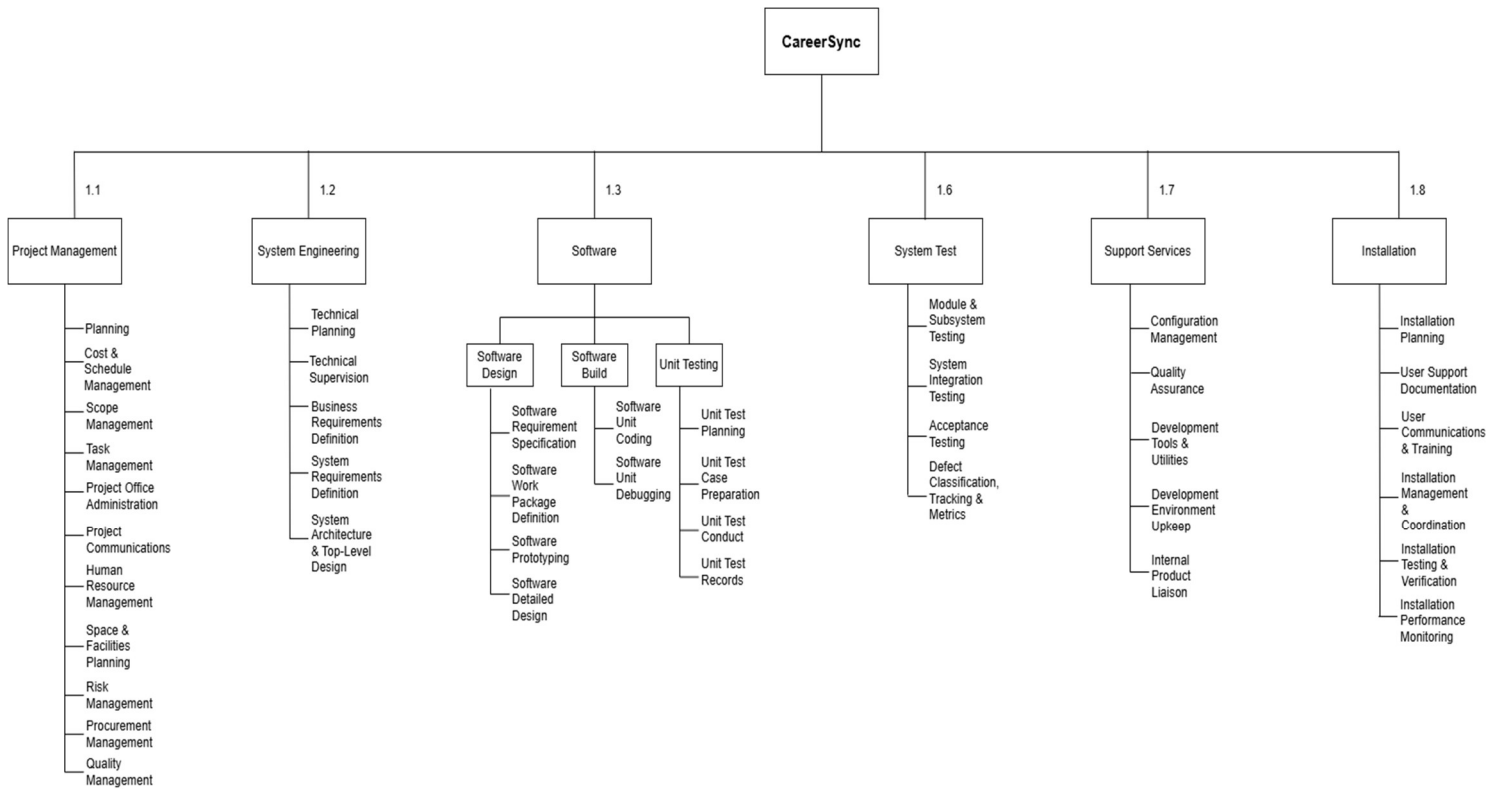
Test Priority (Low, Medium, High): Medium			Test Executed by:	
Module Name: Analytics			Test Execution date:	
Test Title: Government agency views workforce statistics				
Description: Validate analytics access and data accuracy				
Precondition (If any): Logged-in government user				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail )
1.Login as Govt User 2.Click on “Analytics” 3.View reports	govt@bd.gov	Dashboard opens  Graphs/charts appear  Unemployment, job match trends shown		
Post Condition: Stats logged for report generation.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> MD Abu Siyam	
<b>Test Case ID:</b> TC-5.2			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> High			<b>Test Executed by:</b>	
<b>Module Name:</b> Verification			<b>Test Execution date:</b>	
<b>Test Title:</b> Document is successfully verified				
<b>Description:</b> Verify system matches uploaded document with institutional records				
<b>Precondition (If any):</b> Student must upload a valid certificate				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail )
1. System runs validation on uploaded documents  2.Update document status	Certificate: BSc in CSE  Student ID: 12345	Certificate found in database  Status updated to “Verified”		
Post Condition: Student’s profile displays a “Verified” badge.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by:</b> MD Abu Siyam	
<b>Test Case ID:</b> TC-06			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> Medium			<b>Test Executed by:</b>	
<b>Module Name:</b> User Settings			<b>Test Execution date:</b>	
<b>Test Title:</b> Enable/disable notification types				
<b>Description:</b> Students should be able to select notification preferences				
<b>Precondition (If any):</b> Student must be logged in				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
Go to Settings page  Enable “SMS only” and save	Enable SMS Disable Email	Notification settings displayed  Changes saved and applied		
Post Condition: Only SMS notifications will be triggered for this user.				

<b>Project Name:</b> CareerSync: A Human Resources Supervision Platform for Real-time Student and Job Data			<b>Test Designed by</b> MD Abu Siyam	
<b>Test Case ID:</b> TC-07			<b>Test Designed date:</b> 14 May, 2025	
<b>Test Priority (Low, Medium, High):</b> Low			<b>Test Executed by:</b>	
<b>Module Name:</b> UI/UX			<b>Test Execution date:</b>	
<b>Test Title:</b> App layout adjusts for mobile screens				
<b>Description:</b> Website should be responsive on low-end devices				
<b>Precondition (If any):</b> Website opened on smartphone browser				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Load homepage on mobile (480px screen)  2.Navigate through menu and pages		Elements properly aligned and resized  Navigation responsive and smooth		
Post Condition: UI adapts to mobile and caches basic data.				

## Work Breakdown Structure



**COCOMO (Constructive Cost Model)**

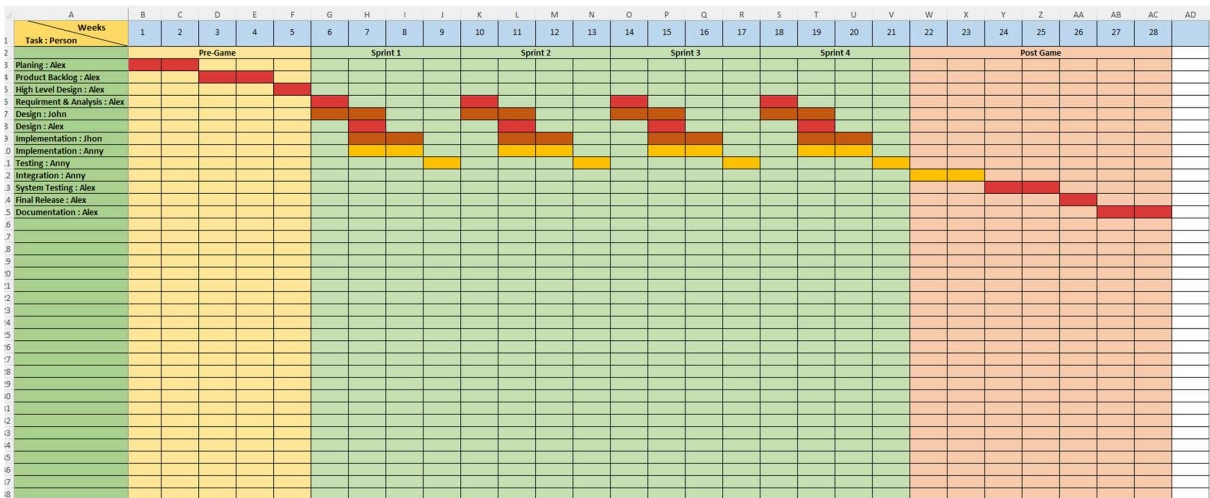
<b>Software Project Type</b>	<b>Coefficient</b> <Effort Factor>	<b>P</b>	<b>T</b>
<b>Organic</b>	<b>2.4</b>	<b>1.05</b>	<b>0.38</b>
<b>Semi-detached</b>	<b>3.0</b>	<b>1.12</b>	<b>0.35</b>
<b>Embedded</b>	<b>3.6</b>	<b>1.20</b>	<b>0.32</b>

Project type -- Organic

$$\begin{aligned}
 \text{Effort} = \text{PM} &= \text{Coefficient}_{\text{Effort Factor}} * (\text{SLOC}/1000)^{\text{P}} \\
 &= 2.4 * (5900/1000)^{1.05} \quad [\text{SLOC value} = 5900] \\
 &= 15.47
 \end{aligned}$$

- Development time = DM =  $2.50 * (\text{PM})^{\text{T}}$   
 $= 2.50 * (15.47)^{0.38}$   
 $= 7.08$
- Required number of people = ST = PM/DM  
 $= 15.47/7.08$   
 $= 2.19$   
 $= 3 \text{ (Approx.)}$

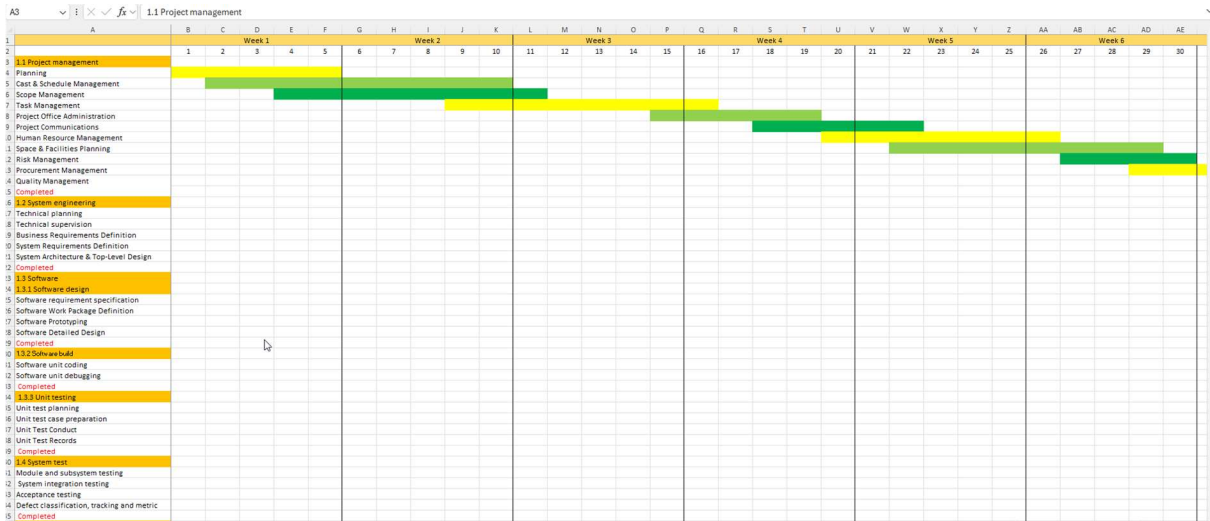
Time Line Chart -1

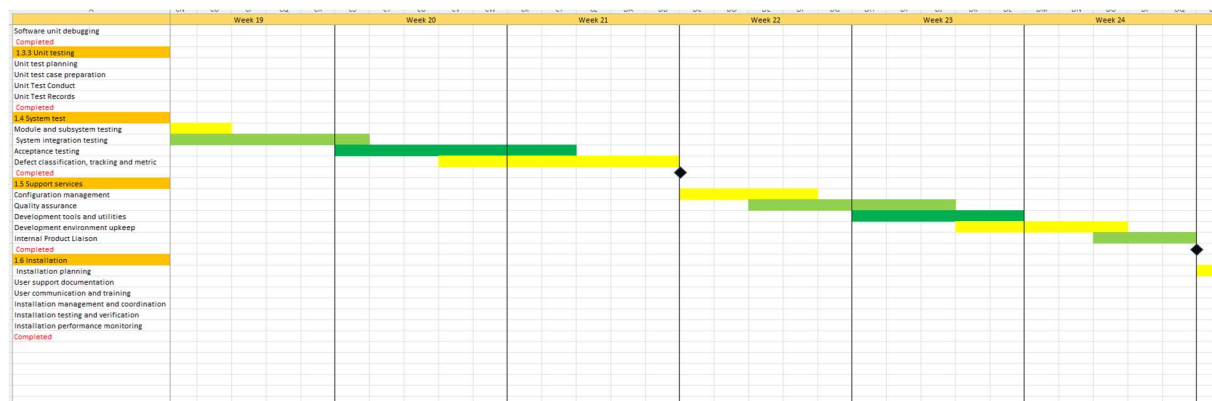
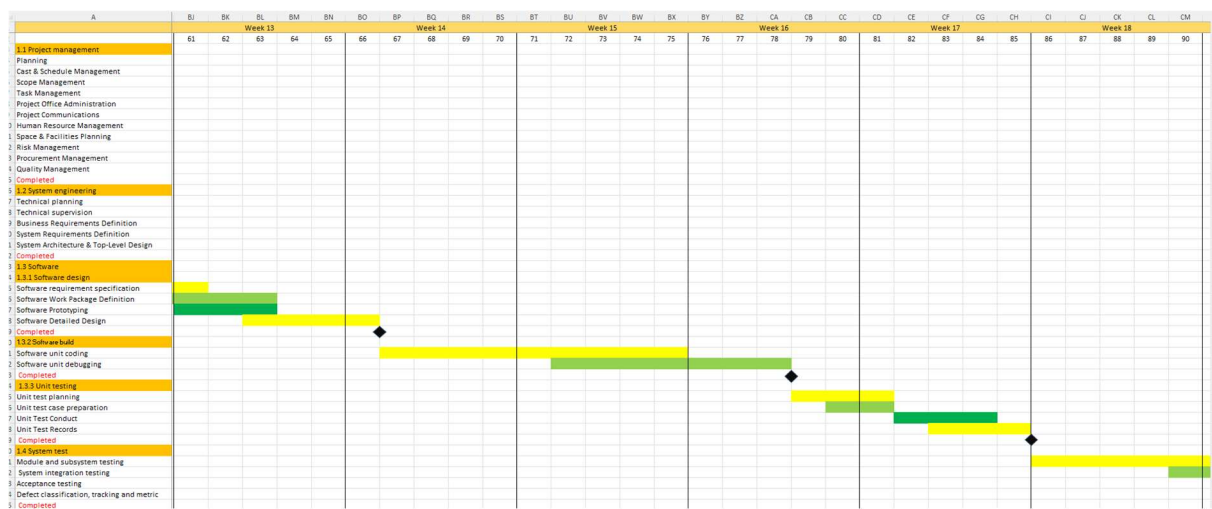
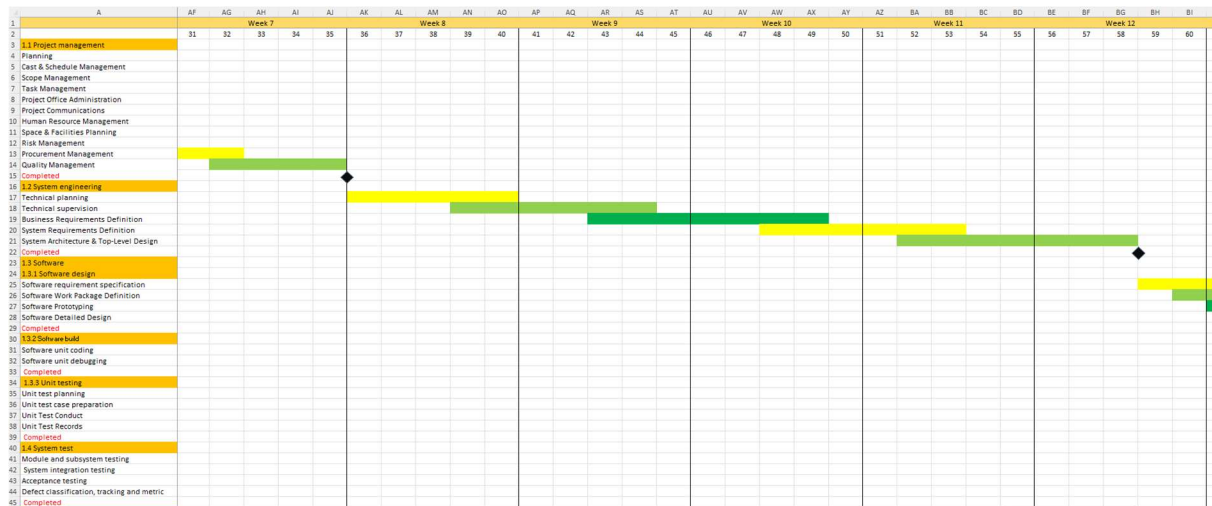


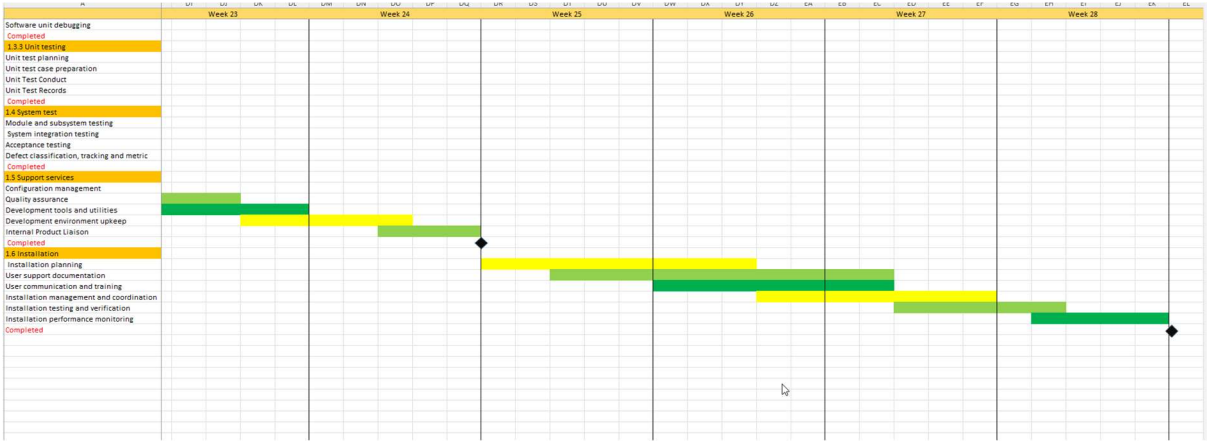
Here,

- Alex – Business Annalist
- John – Developer
- Anny - Developer

Time Line Chart -2









### Earned value analysis

Task	Planned Effort	Actual Effort
1	5	5.5
2	9	10
3	8	7
4	8	8
5	5	3.5
6	5	5.5
7	7	8
8	8	8
9	4	-
10	4	-
Total Task= 41	Effort Estimated=140-person day	

BCWP= 55

BCWS= 63

ACWP= 55.5

BAC= 140

$SPI = \frac{BCWP}{BCWS} = 55/63 = 0.8730$

SV= BCWP-BCWS= 55-63= -8 PERSON DAY

$CPI = \frac{BCWP}{ACWP} = 55/ 55.5 = 0.9910$

CV= BCWP-ACWP= 55-55.5 = -0.5

### Risk Analysis

<b>Risks</b>	<b>Category</b>	<b>Probability</b>	<b>Impact</b>	<b>RMMM</b>
Integration with university HR/Student systems fails	TE	40%	2	Use standardized API contracts and conduct pre-integration testing with pilot institutions.
Data privacy breaches (unauthorized access)	SE	30%	1	Apply AES-256 encryption, implement RBAC (Role-Based Access Control), and enforce two-factor authentication.
Misuse of student/employer data	CU	35%	2	Add strict consent policies; enable granular control of data visibility for all users.
AI job matching yields biased or inaccurate results	DE	50%	2	Continuously retrain AI using diverse datasets and validate with real user feedback.
Students/employers resist adopting the platform	BU	45%	2	Provide training resources, easy onboarding UI, and SMS-based accessibility for rural users.
Forged credentials bypass verification system	PR	25%	1	Implement auto-validation against institutional databases and manual flag review by admins.
Server downtime or infrastructure failure	PS	30%	2	Host on redundant cloud infrastructure with 99.9% SLA and automated failover.
Rapid growth overwhelms system capacity	TE	40%	2	Conduct load testing, plan for scalability with modular architecture and microservices.
Inconsistent data from partner institutions	ST	50%	2	Enforce data format standards and validation rules; assign data quality liaisons.
Legal compliance issues with the Digital Security Act	LE	20%	1	Work with legal advisors; ensure logging, audit trails, and transparent user consent tracking.



## Rubric for Project Assessment (CO3)

Criteria	Marks distribution (Max 3X5= 15)				Acquired Marks
	Inadequate (1-2)	Satisfactory (3)	Good (4)	Excellent (5)	
<b>Selection of Software Engineering Models</b>	Does not articulate a position or argument of choosing appropriate model. Does not present any evidence to support the arguments for the choice of the model	Articulates a position or argument for choosing models that is unfocused or ambiguous. Presents incomplete/vague evidence to support argument for model choice	Articulates a position or argument of choosing models that is limited in scope. Does not present enough evidence to support the argument for the choice of the model	Clearly articulates a position or argument for the choosing software engineering models. Presents sufficient amount of evidence to support argument for the model selection	
<b>Role identification and Responsibility Allocation</b>	The project has poor project management plans for identifying roles and assigning the responsibilities	Identify few roles in the project management where some of the roles are left alone with any project responsibilities	Identify most of the roles in the project management and assign their responsibilities	Well planned project with proper role identification and responsibility allocation in the project management activities	
<b>Impact identification</b>					
<b>Formatting and Submission</b>	Project report is not complete and Several errors in spelling and grammar. Present a Confusing organization of concepts, supporting arguments, and real-life example.	Some errors in spelling and grammar. Some problems of organizing the answer in a logical order of defining,	Few errors in spelling and grammar. Presents most of the details in a logical flow of organization in definition, details, and	Project report is complete and No errors in spelling and grammar. Consistently presents a logical and effective	

	Sentences rambling, and details are repeated.	elaborating, and providing real-life examples.	example.	organization of definition, details, and real-life example of the topic.	
<b>Acquired marks:</b>					
<b>CO Pass / Fail:</b>					

#### Rubric for Project Assessment (CO4)

<b>Marks Distribution (Maximum 3X5=15)</b>					
<b>Marking Criteria</b>	<b>Inadequate (1-2)</b>	<b>Satisfactory (3)</b>	<b>Good (4)</b>	<b>Excellent (5)</b>	<b>Acquired Marks</b>
<b>Project Planning</b>	No background information regarding the project is given; project goals and benefits are missing.	Insufficient background information is given; project goals and benefits are poorly stated	Sufficient background information is given; the purpose and goals of the project are explained.	Thorough and relevant background information is given; project goals are clear and easy to identify.	
<b>Effort Estimation and Scheduling</b>	Student vaguely discuss the impact of societal, health, safety, legal and cultural issues in their project	Student provided with partial relevance to the impact of societal, health, safety, legal and cultural issues in their project	Student fairly provided the analysis to the impact of societal, health, safety, legal and cultural issues in their project	Student comprehensively provided the analysis to the impact of societal, health, safety, legal and cultural issues in their project	
<b>Risk Management</b>	Ambiguous representative example.	Partially identify / indicate towards real-life example.	Real-life example is fairly connected towards the definition.	Comprehensively defend with real life example.	
<b>Acquired Marks:</b>					
<b>CO Pass / Fail:</b>					

**CO5 [PO-i-2]: Perform as an effective team member or leader in diverse team settings and solve multi-disciplinary problems in computer science and engineering domain.**

<b>Assessment Attribute/Criteria</b>	<b>Missing/ Incorrect (0)</b>	<b>Inadequate (1)</b>	<b>Satisfactory (2)</b>	<b>Excellent (3)</b>
<b>Taking responsibility</b>	Does not perform assigned tasks; often misses meetings and, when present, does not have anything constructive to say; relies on others to do the work;	Partially performs all assigned tasks; attends meetings irregularly and occasionally participates and hence not reliable;	Performs all assigned tasks; attends meetings regularly and usually participates effectively. generally reliable;	Performs all tasks very effectively; attends all meetings and participates enthusiastically; very reliable.
<b>Contributions</b>	Never provides useful ideas when participating in a group discussion	Rarely provides useful ideas when participating in a group discussion	Sometimes provides useful ideas when participating in a group discussion	Routinely provides useful ideas when participating in a group discussion
<b>Collaboration and Ability to Compromise</b>	Not cooperative, unable to compromise and disrupts the team process.	Sometimes cooperative, and rarely displays a positive attitude.	Usually cooperative, able to compromise and generally display positive attitude.	Always cooperative. Willingness to compromise. Always display positive attitude.
<b>Valuing other team members (Working with others)</b>	Often argues with teammates; doesn't let anyone else talk; occasional personal attacks and "put-downs"; wants to have things done his way and does not listen to alternate approaches.	Seldom listens to others' points of view; occasionally behaves in an oppressive manner; tries to force their own ideologies on other.	Generally, listens to others' points of view; always uses appropriate and respectful language; tries to make a definite effort to understand others' ideas.	Always listens to others and their ideas; helps them develop their ideas while giving them full credit; always helps the team reach a fair decision.