

Team Member:

- Nazmul Hasan – 2023100000081 (Sec-3)
- Md. Ashikuzzaman Bijoy – 2023100000084
- Nazmul Hasan – 2023100000130

1) Introduction:

Project Title: *CampusCollab* – Unified Platform for Student & Faculty Collaboration

Goal: The goal of our Android app project, *CampusCollab*, is to create a smart and useful platform for Southeast University (SEU) students to **connect, share, and grow together**.

This app will help students:

- Share their skills and get help from others (SkillSwap)
- Join or organize events (EventHub)
- Review courses and rate teachers (Course Review & Faculty Rating)
- Showcase their projects (ProjectXpo)
- Find jobs or internships (CampusCareer)
- Chat with other students & faculty in real-time (CampusTalk)
- Manage their own profiles (PortFolio)

Admins and faculty can also use the app to manage events, view student activities, and keep the system safe and organized.

We are building this app by following the steps of software engineering — like planning, designing, coding, and testing — so it becomes a complete and real working system.

2) Planning:

Feature Identification:

Student Panel:

- Login/Signup
- View Dashboard
- SkillSwap(Post a skill offer/request, Search and apply for peer help, Chat with matched users(CampusTalk))
- EventHub(Search,read,join,share)
- Faculty Rating(Rate, View Aggregate Rate)
- Course Review(Course Feedback, Rating/Comment)
- PortFolio(view, Edit skills, projects, picture)
- ProjectXpo(Upload, Search)
- CampusTalk(Discussion)
- CampusCareer(Search,View,Apply,Mark Interest)

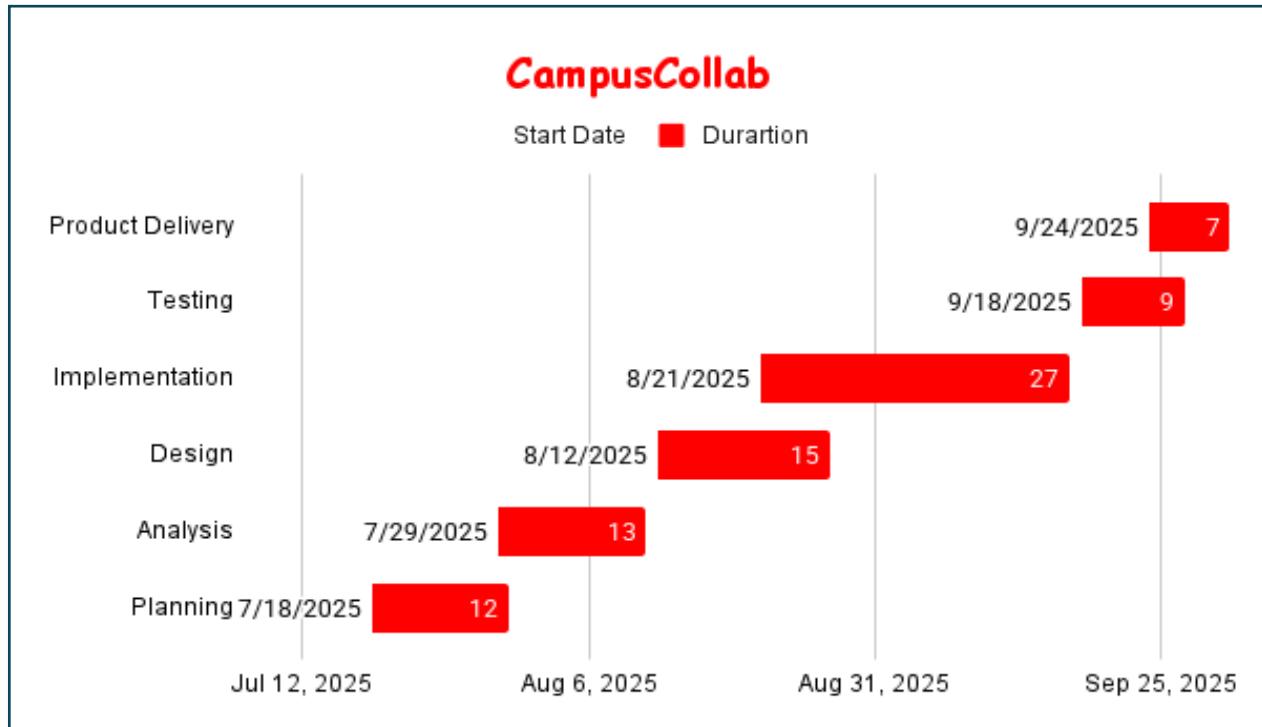
Faculty Panel:

- Login/Signup
- View Dashboard
- EventHub(Create,manage,track participation)
- View Rating(Own and courses)
- ProjectXpo(View,Comment,Rate)
- CampusTalk(Discussion)
- CampusCareer(Post)

Admin Panel:

- Login
- Access Admin Dashboard
- Manage Users (Ban, Promote, Reset Password)
- Review Reports (abuse, spam, etc.)
- Review Reports (abuse, spam, etc.)
- Approve/Remove Events
- View Analytics (usage, engagement, top skills)
- Full Read Access to all student/faculty activities

Gantt Chart:



Budget Preparation:

Activity Phase	Tasks Included	Estimated Cost (BDT)
Planning	Team Formation	3,00,000
	Requirement Gathering	30,000
	Initial Research	20,000
Analysis	System Analysis	70,000
	Diagrams	10,000
	Docs	40,000
	Data Flow	30,000
Design	Figma Pro Version	30,000
	UI/UX Designer	1,20,000
Implementation	Coding Frontend (Android Studio)	50,000
	Backend Development	60,000
	Feature Integration	50,000
	Firebase	20,000
Testing	Unit Testing	60,000
	Integration Testing	50,000
	Bug Fixing	40,000
Product Delivery	Final Deployment	1,00,000
	Play Store Fee	2,500

	Presentation	10,000
	Documentation	30,000
	Showcase Event	27,500
Tools & Resources (For all Phases)	Laptops	5,00,000
	Test Devices	30,000
	Software Tools	1,00,000
Extra Costs	Office Setup	60,000
	Printing, Reports	20,000
	Marketing	20,000
Total Estimated Budget		1,880,000

3) Analysis:

System Requirements:

Hardware Requirements:

- Development Laptops: Minimum 8 GB RAM, 256 GB SSD, Quad-core processor
- Test Devices: Smartphones/Tablets (Android 10+)
- Internet Connectivity: Broadband/WiFi with minimum 20 Mbps speed

Software Requirements:

- Frontend: Android Studio (Java/Kotlin)
- UI/UX Design: Figma (Pro Plan)
- Backend: Firebase (Realtime Database, Firestore)
- Database: Firebase Firestore
- Cloud Functions: Firebase Functions (Node.js)
- Authentication: Firebase Auth (Email, Google Sign-In)
- Deployment: Google Play Store
- Version Control: Git (GitHub)

User Requirements:

For Students

- Login and manage personal profile (PortFolio)
- Share skills or request peer help (SkillSwap)
- Browse and Post events (EventHub)

- Rate faculty (Faculty Rating)
- Course review (Course Review)
- Upload and browse projects (ProjectXpo)
- Find job/internship opportunities (CampusCareer)
- Real-time chat and group discussions (CampusTalk)

For Faculty

- Manage and post campus events
- View feedback from students (Faculty Rating)
- Post internships or research collaboration offers
- Participate in CampusTalk discussions

For Admin

- Manage user accounts (create/edit/delete)
- Moderate reviews, events, and posts
- Generate platform usage reports and analytics

Functional Requirements:

- FR1: The system shall allow users to log in using university email.
- FR2: The system shall allow students to create and update their profile.
- FR3: The system shall enable posting and searching for skills under SkillSwap.
- FR4: The system shall display a list of upcoming events.
- FR5: The system shall allow students to submit faculty ratings and course reviews.
- FR6: The system shall provide a platform for project uploads with tags and descriptions.
- FR7: The system shall display job/internship listings under CampusCareer.
- FR8: The system shall support real-time chat rooms and private messaging.
- FR9: The admin shall have access to manage users, moderate content, and view reports.

Non-Functional Requirements:

- Performance: The app should load primary screens within 2 seconds.
- Scalability: Must support up to 10,000 concurrent users in future.
- Security: Implement Firebase Authentication and Firestore Security Rules.
- Usability: User Interface must be mobile-friendly and easy to navigate.
- Reliability: System uptime should be maintained at 99%.
- Maintainability: Codebase should follow modular architecture
- Backup: Enable daily Firestore data backups and App Version control.

SDLC Model Selection:

Step-1: Criteria and Priority Weights:

Criteria	Weight (1-5)	Reason
Requirement Flexibility	4	Continuous feedback & evolving features like SkillSwap & EventHub.
Customer Involvement	3	High engagement from students and faculty during development.
Project Size	5	large project with multi-role panels.
Risk Handling	4	Moderate risk in usability, data privacy, and timeline.
Testing Focus	5	Rigorous testing is mandatory for compliance.
Security Requirement	5	Sensitive personal data must be protected
Cost of Change	3	Moderate need to manage budget efficiently
Delivery Speed	2	Speed is important, but not at the cost of quality

Step 2: Rate Each Model per Criterion:

➤ Scale: 1 (Poor) to 5 (Excellent)

Criteria	Weight (1-5)	Waterfall	V-Model	Iterative	Incremental	Spiral	Agile
Requirement Flexibility	4	1	1	4	4	5	5
Customer Involvement	3	1	1	5	5	5	5
Project Size	5	3	3	4	4	5	4
Risk Handling	4	2	3	4	4	5	4
Testing Focus	5	3	5	4	4	5	5
Security Requirement	5	2	2	5	5	5	5
Cost of Change	3	2	2	4	5	4	5
Delivery Speed	2	1	1	5	5	5	5

Step 3: Calculate Weighted Scores:

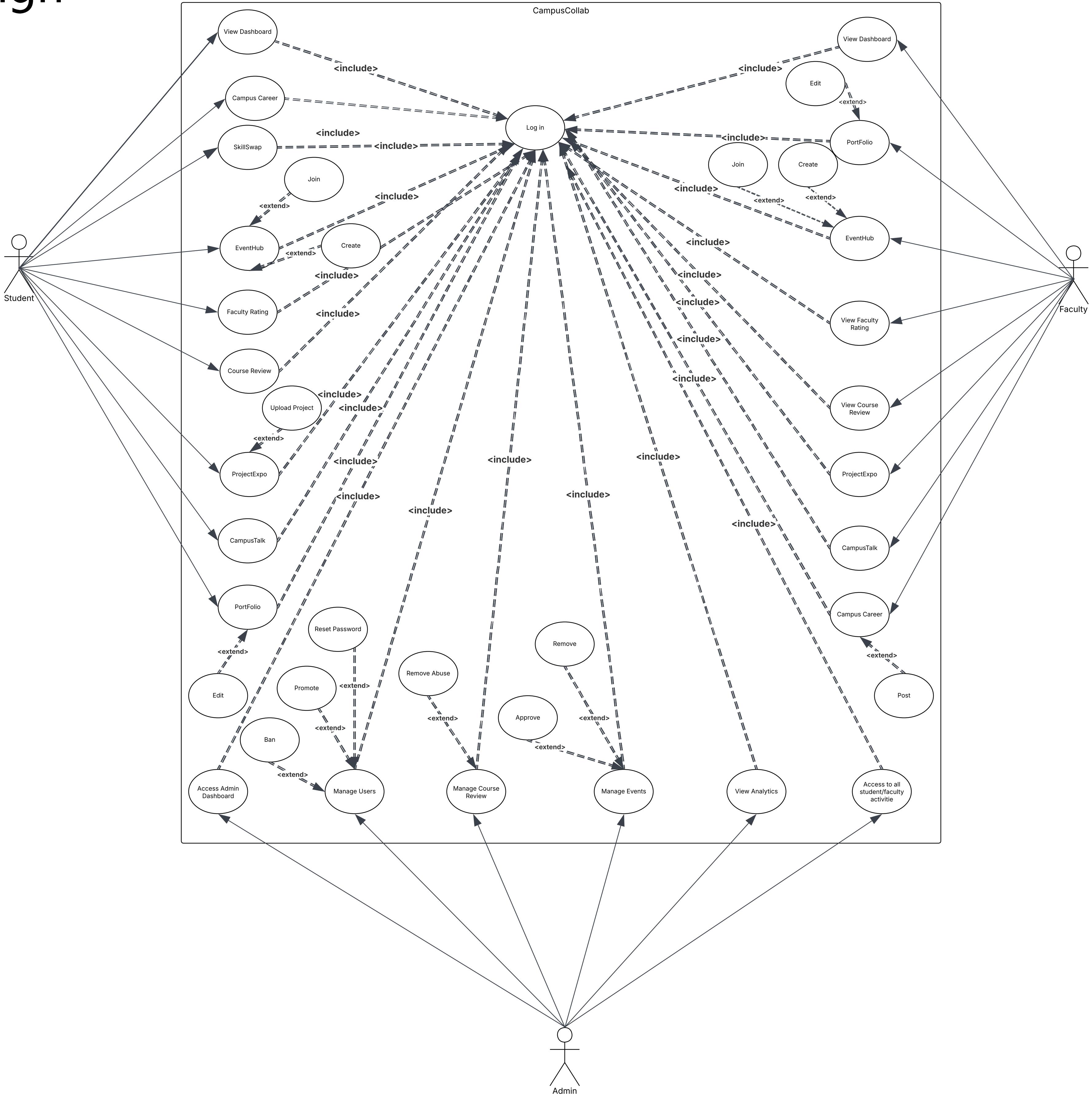
- Formula: Weighted Score = Weight × Rating
- Weighted Evaluation of SDLC Models

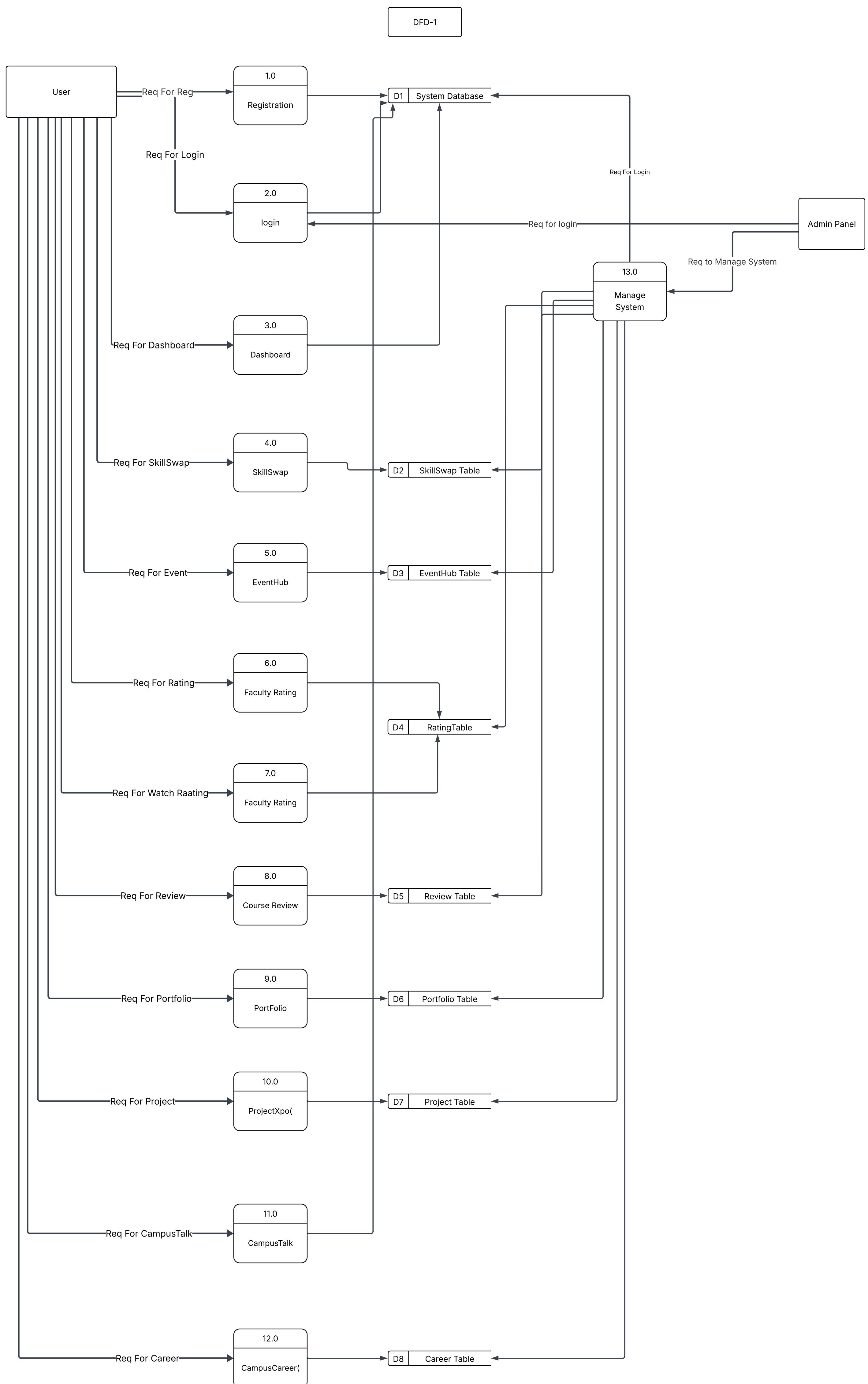
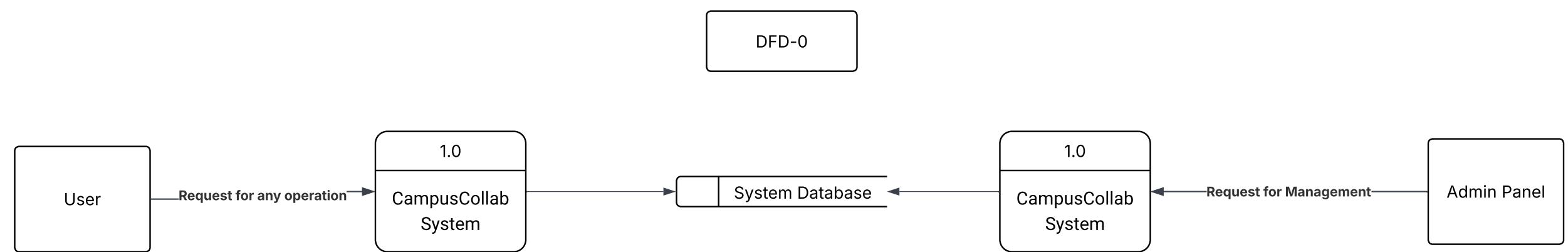
Criteria	Weight (1-5)	Waterfall	V-Model	Iterative	Incremental	Spiral	Agile
Requirement Flexibility	4	4	4	16	16	20	20
Customer Involvement	3	3	3	15	15	15	15
Project Size	5	15	15	20	20	25	20
Risk Handling	4	8	12	16	16	20	16
Testing Focus	5	15	25	20	20	25	25
Security Requirement	5	10	10	25	25	25	25
Cost of Change	3	6	6	12	15	12	15
Delivery Speed	2	2	2	10	10	10	10
Total Score		63	77	134	137	152	146

Step-4: Justification:

Based on the weighted evaluation, the Spiral Model scores the highest (152), making it the most suitable choice for developing CampusCollab due to its strong focus on risk handling, large Size, iterative feedback loops, and flexibility. Agile also performs very well (146) and can be integrated within Spiral cycles for continuous delivery of modules.

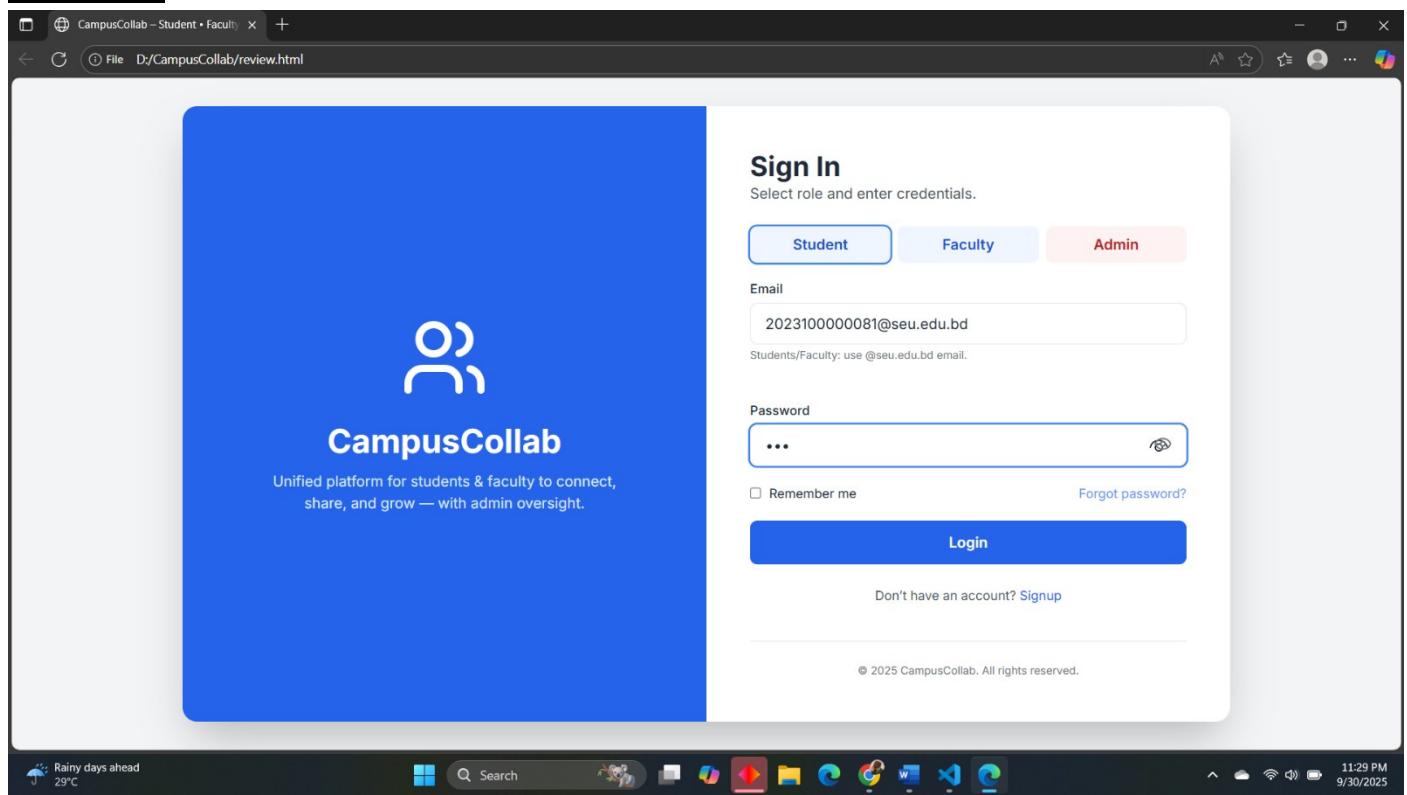
4) Design





5) Implementation:

Student:



The screenshot shows a web browser window titled "CampusCollab - Student • Faculty". The left sidebar is labeled "CampusCollab STUDENT" and contains links: "Dashboard" (selected), "SkillSwap", "EventHub", "Faculty Rating", "ProjectXpo", "CampusTalk", "CampusCareer", and "My Profile". The main content area is titled "Welcome back, Nazmul!" and says "Here's what's happening today." It displays four cards: "Skill requests" (0, View), "Upcoming events" (0, EventHub), "Jobs" (1, CampusCareer), and "Unread" (2, CampusTalk). At the bottom left is a profile card for "Nazmul Hasan" with a "View Profile" link and a "Logout" button. The bottom navigation bar includes a weather forecast ("Rainy days ahead 29°C") and a taskbar with various application icons.

CampusCollab – Student • Faculty

File D:/CampusCollab/review.html#skillswap

SkillSwap

Search skills or users Search

Golang student

Programming language By Nazmul Hasan Request Skill

Java student

I learn it at my course CSE281. By Nazmul Hasan Request Skill

CCFEST creative coding festival

Nazmul Hasan View Profile Logout

Rainy days ahead 29°C 11:30 PM 9/30/2025

CampusCollab – Student • Faculty

File D:/CampusCollab/review.html#eventhub

EventHub

+ Create Event

Search events Search

CCFEST creative coding festival

English Fest 0 joined 9/17/2025, 8:03:00 AM → 9/19/2025, 8:03:00 AM do By Nazmul Hasan (student) Join Remove

Debate Fest 0 joined 9/27/2025, 7:49:00 AM → 10/4/2025, 7:49:00 AM Fest By Shimul Dey Katha (faculty) Join

Coding Fest 1 joined 9/19/2025, 4:10:00 AM → 9/26/2025, 4:11:00 AM By Nazmul Hasan (student) Join Remove

Nazmul Hasan View Profile Logout

Rainy days ahead 29°C 11:30 PM 9/30/2025

CampusCollab – Student • Faculty

Faculty Rating

Search faculty

Shimul Dey Katha
shimul.katha@seu.edu.bd
0.0 0%
View details

Asaduzzaman Noor
noor@seu.edu.bd
0.0 0%
View details

Nazmul Hasan
View Profile

Logout

Rainy days ahead 29°C 11:30 PM 9/30/2025

CampusCollab – Student • Faculty

ProjectXpo

Post Project

CampusCollab Project
CSE346 lab Project
By Nazmul Hasan (student)
Download file Remove

Nazmul Hasan
View Profile

Logout

Rainy days ahead 29°C 11:30 PM 9/30/2025

CampusCollab – Student • Faculty x +

File D:/CampusCollab/review.html#campustalk

CampusTalk

Unread: 2

Search contacts...

A Asif Iqbal 2023100000430@seu.edu.bd

S System Admin admin@local

S Shimul Dey Katha shimul.katha@seu.edu.bd

A Asif Iqbal 2023100000430@seu.edu.bd

A Asaduzzaman Noor noor@seu.edu.bd

A abc 2023100000077@seu.edu.bd

Assalamu Alaikum Dst

Type a message... 

Contacts show unread in bold. Your messages show **Unseen** until the other user opens the thread; then they flip to **Read**.

NH Nazmul Hasan View Profile  Logout

Rainy days ahead 29°C 11:30 PM 9/30/2025

CampusCollab – Student • Faculty x +

File D:/CampusCollab/review.html#campuscareer

CampusCareer

Search jobs, internships, research

Search

My CV (PDF) Choose File No file chosen Save CV

Lecturer Department of CSE Posted by undefined

Apply 

NH Nazmul Hasan View Profile  Logout

Rainy days ahead 29°C 11:30 PM 9/30/2025

CampusCollab – Student • Faculty

D:/CampusCollab/review.html#profile

CampusCollab

STUDENT

Nazmul Hasan
ID: 2023100000081
2023100000081@seu.edu.bd

Bio
Write a short bio...
Save Bio

Education
School/College/University Degree Result/CGPA Add

My Skills (Image, Title, Description, File)
Skill title Choose File No file chosen Choose File No file chosen Add Skill
Short description...
Java
I learn it at my course CSE281.

NH Nazmul Hasan
View Profile
Logout

2 cm of rain Thursday 11:30 PM 9/30/2025

Faculty:

CampusCollab – Student • Faculty

D:/CampusCollab/review.html#



CampusCollab
Unified platform for students & faculty to connect,
share, and grow — with admin oversight.

Sign In
Select role and enter credentials.

Student Faculty Admin

Email
shimul.katha@seu.edu.bd
Students/Faculty: use @seu.edu.bd email.

Password
•••

Remember me [Forgot password?](#)

Login

Don't have an account? [Signup](#)

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2 cm of rain Thursday 11:31 PM 9/30/2025

CampusCollab – Student • Faculty

CampusTalk

FACULTY

Dashboard SkillSwap EventHub View Ratings ProjectXpo CampusTalk CampusCareer My Profile

SD Shimul Dey Katha View Profile Logout

2 cm of rain Thursday 11:31 PM 9/30/2025

Search contacts... S System Admin admin@local

S System Admin admin@local

N Nazmul Hasan 2023100000081@seu.edu.bd

A Asif Iqbal 2023100000430@seu.edu.bd

A Asaduzzaman Noor noor@seu.edu.bd

A abc 2023100000077@seu.edu.bd

Are you there Yes Remove Nazmul, Ban Him(202310000130) More

Type a message... 

Contacts show unread in bold. Your messages show Unseen until the other user opens the thread; then they flip to Read.

CampusCollab – Student • Faculty

CampusCareer

FACULTY

Dashboard SkillSwap EventHub View Ratings ProjectXpo CampusTalk CampusCareer My Profile

SD Shimul Dey Katha View Profile Logout

2 cm of rain Thursday 11:31 PM 9/30/2025

Search jobs, internships, research Search

+ Post

Lecturer Department of CSE Job

Posted by undefined

SD Shimul Dey Katha View Profile Logout

2 cm of rain Thursday 11:31 PM 9/30/2025

CampusCollab – Student • Faculty

File D:/CampusCollab/review.html#projectxpo

CampusCollab

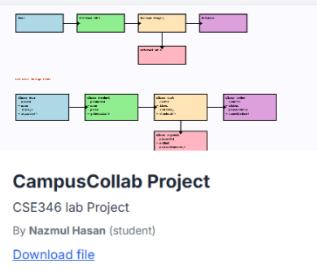
FACULTY

- Dashboard
- SkillSwap
- EventHub
- View Ratings
- ProjectXpo**
- CampusTalk
- CampusCareer
- My Profile

ProjectXpo

CampusCollab Project

CSE346 lab Project
By Nazmul Hasan (student)
[Download file](#)



SD Shimul Dey Katha
View Profile

Logout

2 cm of rain Thursday 11:32 PM 9/30/2025

CampusCollab – Student • Faculty

File D:/CampusCollab/review.html#profile

CampusCollab

FACULTY

- Dashboard
- SkillSwap
- EventHub
- View Ratings
- ProjectXpo
- CampusTalk
- CampusCareer
- My Profile**

Shimul Dey Katha

ID: 123
shimul.katha@seu.edu.bd

Bio

SEU Faculty

Save Bio

Education

School/College/University: KUET | Degree: B.Sc. | Result/CGPA: 1st Class | Add

Remove

My Skills (Image, Title, Description, File)

Skill title: Choose File No file chosen | Choose File No file chosen | Add Skill

Short description...

SD Shimul Dey Katha
View Profile

Logout

2 cm of rain Thursday 11:32 PM 9/30/2025

Admin:

The screenshot shows the CampusCollab login interface. On the left, there's a large blue sidebar with a user icon and the text "CampusCollab" followed by a subtitle: "Unified platform for students & faculty to connect, share, and grow — with admin oversight.". Below this is a weather widget showing "Hot days ahead 29°C". The main right area has a "Sign In" heading and a sub-instruction "Select role and enter credentials." It features three tabs: "Student" (blue), "Faculty" (light blue), and "Admin" (red, selected). A "Username" field contains "admin", with a note below it: "Admin: use your username.". A "Password" field contains "*****". There are "Remember me" and "Forgot password?" links, and a prominent blue "Login" button at the bottom. At the very bottom of the page is a copyright notice: "© 2025 CampusCollab. All rights reserved.".

The screenshot shows the Admin Dashboard. On the left, a sidebar menu includes "Dashboard", "Admin" (selected), "EventHub (Read/Moderate)", "ProjectXpo (Moderate)", "CampusTalk", "CampusCareer (Moderate)", and "Faculty Rating". Below this is a "System Admin" section with a "View Profile" link and a "Logout" button. The main content area has four sections: "Manage Users" (listing users like Shimul Dey Katha, Nazmul Hasan, Asif Iqbal, Asaduzzaman Noor, and abc with "Promote" and "Ban" buttons), "Event Approvals" (showing "No pending events."), and "Moderation" (with the note "Admins can remove any project, event, or career post from their respective pages"). The bottom of the screen shows a taskbar with various icons and a system status bar indicating "Hot days ahead 29°C" and the date/time "11:33 PM 9/30/2025".

CampusCollab – Student • Faculty

File D:/CampusCollab/review.html#eventhub

EventHub

Search events Search

CCFEST
creative coding festival

English Fest 0 joined
9/17/2025, 8:03:00 AM → 9/19/2025, 8:03:00 AM
do
By Nazmul Hasan (student)
[Join](#) [Remove](#)

Debate Fest 0 joined
9/27/2025, 7:49:00 AM → 10/4/2025, 7:49:00 AM
Fest
By Shimul Dey Katha (faculty)
[Join](#) [Remove](#)

Coding Fest 1 joined
9/19/2025, 4:10:00 AM → 9/26/2025, 4:11:00 AM
By Nazmul Hasan (student)
[Join](#) [Remove](#)

Dashboard Admin EventHub (Read/Moderate) ProjectXpo (Moderate) CampusTalk CampusCareer (Moderate) Faculty Rating

System Admin View Profile Logout

Hot days ahead 29°C 11:33 PM 9/30/2025

CampusCollab – Student • Faculty

File D:/CampusCollab/review.html#projectxpo

ProjectXpo



CampusCollab Project
CSE346 lab Project
By Nazmul Hasan (student)
[Download file](#) [Remove](#)

Dashboard Admin EventHub (Read/Moderate) ProjectXpo (Moderate) CampusTalk CampusCareer (Moderate) Faculty Rating

System Admin View Profile Logout

Hot days ahead 29°C 11:33 PM 9/30/2025

CampusCollab – Student • Faculty x +

File D:/CampusCollab/review.html#campustalk

CampusCollab

ADMIN

- Dashboard
- Admin
- EventHub (Read/Moderate)
- </> ProjectXpo (Moderate)
- CampusTalk**
- CampusCareer (Moderate)
- Faculty Rating

System Admin
View Profile

Logout

Hot days ahead 29°C

Search contacts...

CampusTalk

Shimul Dey Katha [shimul.katha@seu.edu.bd](#)

S Shimul Dey Katha [shimul.katha@seu.edu.bd](#)

N Nazmul Hasan [2023100000081@seu.edu.bd](#)

A Asif Iqbal [2023100000430@seu.edu.bd](#)

A Asaduzzaman Noor [noor@seu.edu.bd](#)

A abc [2023100000077@seu.edu.bd](#)

Are you there

Remove Nazmul. Ban
Him(2023100000130)

Type a message... 

Contacts show unread in bold. Your messages show **Unseen** until the other user opens the thread; then they flip to **Read**.

11:34 PM 9/30/2025

CampusCollab – Student • Faculty x +

File D:/CampusCollab/review.html#campuscareer

CampusCollab

ADMIN

- Dashboard
- Admin
- EventHub (Read/Moderate)
- </> ProjectXpo (Moderate)
- CampusTalk
- CampusCareer (Moderate)**
- Faculty Rating

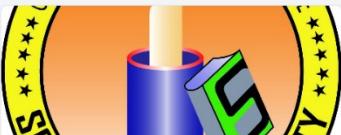
System Admin
View Profile

Logout

Hot days ahead 29°C

Search jobs, internships, research

CampusCareer



Lecturer

Department of CSE
Posted by undefined

11:34 PM 9/30/2025

CampusCollab – Student • Faculty x +

File D:/CampusCollab/review.html#faculty-rating

CampusCollab

ADMIN

- Dashboard
- Admin
- EventHub (Read/Moderate)
- </> ProjectXpo (Moderate)
- CampusTalk
- CampusCareer (Moderate)
- Faculty Rating**

Faculty Rating

Search faculty Search

Faculty Name	Email	Rating	Reviews (%)
Shimul Dey Katha	shimul.katha@seu.edu.bd	0.0	0%
Asaduzzaman Noor	noor@seu.edu.bd	0.0	0%

Shimul Dey Katha
shimul.katha@seu.edu.bd

[View details](#)

Asaduzzaman Noor
noor@seu.edu.bd

[View details](#)

System Admin
View Profile

Logout

Hot days ahead 29°C

Search

11:34 PM 9/30/2025

6) Testing:

Module	Test Cases	System Working Status	System Status	Remarks
Registration	Email: bijoy@gmail.com, Pass: 1234	Reg not successful.	Ok	Passwords must be at least 6 characters long.
	Email: Fardin.com.gmail, Pass: 123456	Reg not successful.	Ok	Invalid email format. Please include an "@" symbol.
	Email: nazmul@gmail.com, Pass: 123456	Reg successful.	Ok	Account created successfully.
	Email: nazmul@gmail.com, Pass: 234567	Reg not successful.	Ok	User with this email already exists.
Login	Email: bijoy@gmail.com, Pass: 123458	Login not successful.	Ok	Invalid email or password.
	Email: Fardin.com.gmail, Pass: 123456	Login not successful.	Ok	Invalid email or password.
	Email: nazmul@gmail.com, Pass: 123456	Login Successful.	Ok	Login Successful.

SkillSwap	Student A offers to teach 'Python' with a full description.	Post successful.	Ok	Skill offer posted and visible to other users.
	Student B requests help for 'Java' but leaves the description blank.	Post not successful.	Ok	Error message: "Description field cannot be empty."
	Student C searches for 'Python' and applies to Student A's offer.	Application successful.	Ok	Notification sent to Student A. Chat initiated.
Faculty Rating	Students rate Dr. Alan with a 5-star score and a positive comment.	Rating submitted successfully.	Ok	Rating is recorded and contributes to the aggregate score.
	Students try to submit a rating without selecting a star score.	Rating not successful.	Ok	Error message: "Please select a rating from 1 to 5."
	Student attempts to rate a faculty member they have already rated this semester.	Rating not successful.	Ok	Error message: "You have already submitted a rating for this faculty."
CampusCare er	Students with a complete portfolio apply for a 'Web Dev Intern' position.	Application successful.	Ok	Confirmation message shown. Application sent to the recruiter.
	A student tries to apply for a job with an incomplete portfolio.	Application not successful.	Ok	Error message: "Please complete your portfolio before applying."

EventHub	Faculty creates a new event 'AI Workshop' with all required details.	Event creation successful.	Ok	The event is now listed and searchable for students.
	The faculty tries to create an event with a date that has already passed.	Event creation was not successful.	Ok	Error message: "Event date must be in the future."
ProjectXpo	The faculty views a student's project and leaves a comment and rating.	Comment/Rating successful.	Ok	The comment and rating are now visible on the project page.
CampusCareer	Faculty posts a new job opening for a 'Research Assistant' with valid details.	Job post successful.	Ok	The job is now listed for students to apply.
	Faculty attempts to post a job without specifying the job title.	Job post not successful.	Ok	Error message: "Job title is a required field."
Manage Users	Admin bans a user ('spammer@gmail.com') for violating guidelines.	User ban successful.	Ok	The user 'spammer@gmail.com' can no longer log in.
	Admin attempts to ban a user that does not exist ('nobody@gmail.com').	User ban not successful.	Ok	Error message: "User not found."
	Admin resets the password for a	Password reset successful.	Ok	An email with a temporary

	student who requested it.			password is sent to the student.
Event Management	Admin reviews a faculty-created event and approves it.	Event approval was successful.	Ok	The event is now officially published and visible to all.
	Admin removes an event that was reported as inappropriate.	Event removal successful.	Ok	The event is no longer visible on the platform.

7) Conclusion:

Through this project, we have analyzed the requirements and identified the key functions that will make the system useful and reliable. Features like personalized recommendations, secure authentication, skill sharing, and project showcasing will ensure that students and faculty can collaborate and access information more effectively.

By selecting a suitable SDLC model (Agile/Iterative), the development process can remain flexible, user-focused, and adaptable to changes. The analysis phase provides a strong foundation for the upcoming design, implementation, and testing phases. In conclusion, this project will not only benefit Southeast University's academic community but also demonstrate the practical application of information system design and software engineering concepts.