

Student Associations and Clubs : A Banasthali Portal

A Project Report

Submitted in the partial fulfillment for the award of the degree of

Bachelor of Technology

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Banasthali - 304022

Session: 2020-21

ABSTRACT

Student Associations and Clubs - A Banasthali Portal is an online club management system web application that serves the functionality of club management. It replaces the manual working of the clubs of Banasthali Vidyapith and provides a single online platform where all the clubs can display their operationalization. The system allows all the students of Banasthali Vidyapith to view the events and workshops conducted by different clubs, register for them at the same time, give their feedback and ask queries. All the data is logged into the database and only those students can register whose information can be fetched from the college database. Although the website is open to all, if a visitor's details are not present in the college database, she won't be able to register for any event or workshop. This data is sent to the administrator (Banasthali Vidyapith).

Student Associations and Clubs is a public domain open to all, where all the workings of all the clubs are organized in a professional, focused and creative way. It's target audience is the students of Banasthali Vidyapith. For a very long time the functioning of the clubs has been done manually and in a scattered form. This online platform provides a way to unite all the clubs and makes it much easier for the students to connect with the clubs as well as club members.

ACKNOWLEDGEMENTS

First of all, we would like to thank the almighty for giving us the courage and strength in completing the project during the pandemic period.

In the development, presentation and compilation of our project, we are highly grateful to all the people who provided their valuable guidance, time and support throughout. We would like to give our heartiest gratitude to Prof. C K Jha ,without whose support this project would not have been possible.

We would also like to express our indebtedness towards our project guide Mr. Ashok Kumar, his technical guidance has facilitated a rich educational experience for us through countless discussions, profitable advice, direction, encouragement and fair criticism. The support we received from our classmates and friends was vital for the successful completion of the project. We are thankful for their consistent support and assistance.

Last but not the least, we would like to express our deepest gratitude and earnest thanks to our dear parents for their moral support and heartfelt encouragement in doing this project.

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OBJECTIVE

Students across the campus should have proper exposure to the activities conducted by the various student clubs in Banasthali Vidyapith so that they can develop and learn through such programmes. They can participate in events, attend workshops as well as join the teams as club members.

However, currently, students have not had the privilege to be exposed to these insightful and important activities due to the ongoing global pandemic. Owing to the offline procedures carried out by student clubs in general, their activities have been innately put on hold for more than a year now. This has impeded students from participating in the events and workshops.

We, therefore, propose a project on ‘Student Associations and Clubs: A Banasthali Portal’ to sort all the unwanted hindrances in the functioning of the clubs. Here, all of the information regarding numerous events and workshops of each and every club will be available on one common website, making convenience a major advantage of this project. This will also be of great help to the members of the various clubs as it will allow them to promote their events and keep the students updated with the various activities going on in various clubs.

REQUIREMENT ANALYSIS (SRS)

2.1 Requirement Specifications

2.1.1 External Interface Requirements : User Interfaces

1. Front End: Java Servlet, Html,CSS, Bootstrap.
2. Back End: MySql/Derby
3. Design Tool: Netbeans IDE
4. Web Server: Tomcat

2.1.2. Communications Interfaces

1. Web browser (Java Enabled like Mozilla, Opera etc.)
2. Internet connection
3. Servers on the Internet will be using the HTTP/HTTPS protocol.
4. Clients on Intranet will be using TCP/IP protocol.

2.2 Hardware and Software Requirements

2.2.1 Hardware Interfaces

1. Server side requirements

- Processor: Pentium p4 (1-2 GHZ) or onwards.
- RAM: 1 GB or more.
- HDD: 5 GB (free space excluding data size).

2. Client side requirements

- Processor: Pentium p4 (1 GHZ) or onwards.
- RAM: 150 MB or more
- HDD: 1 GB or more.

3. Developer side requirements

- Processor: Pentium p4 (1-2 GHZ) or onwards.
- RAM: 2 GB or more.
- HDD: 10 or more.

2.2.2 Software Interfaces

1. Server side requirements

- Operating system: Microsoft Windows 7 or onwards
- Web Server: Tomcat

2. Client side requirements

- Operating system: Microsoft/Linux.
- Browser: Any browser (Java Enabled)

3. Developer side requirements

- Operating system: Windows 7 or onwards.
- Browser: Any browser.
- Frontend: Java /CSS/HTML/Bootstrap
- Backend: MySQL
- Design Tools: Netbeans IDE

2.3 Feasibility Study

This project aims to provide a user-friendly interface for managing and viewing the activities collectively of various clubs of Banasthali Vidyapith. It will computerize the existing manual system of the clubs in Banasthali Vidyapith.

Potential solutions resulting from the project:

- Overall convenience for students as well as club members.
- Better promotion of events and workshops by clubs.
- Detailed and appropriate information delivered.
- Easy registration process.

Alternative solutions: Alternative solution for the project is the use of social media platforms to promote the basic requirements of the clubs and associations.

Operational Feasibility: Our Project solves the existing manual working of the clubs which has been there for a very long time. It's much better than using the alternative solutions since all the requirements are met on one single platform rather than being scattered on all social media platforms.

Technical Feasibility: The technology used to build our project is already mentioned in our project which is available online. The university has technical assistance to deploy the project feasibly.

Economical Feasibility: In the fast paced world today there is a great need for online website facilities, which can replace the manual existing system. Thus, the benefits of this project in the current scenario make it economically feasible as the project shall be deployed on university level.

2.4 Product Functions

1. **Login:** Admin can login.
2. **Members:** Admin can add/delete/view/update members and their details.
3. **Event Management:** Admin can add new events and their details, students can view/select different events.
4. **Event Registration:** Students can register for different events.

5. **Workshop Management:** Admin can add new workshops and their details, students can view/select different events.
6. **Workshop Registration:** Students can register for different workshops.
7. **Winners:** Admin can add/delete winners and students can view the winners.
8. **Feedback:** Students can post their feedback regarding events
9. **Queries:** Students can ask their queries.

2.5 Use-case Diagrams

A UML use case diagram is the primary form of system/software requirements for a new software program underdeveloped. Use cases specify the expected behavior (what), and not the exact method of making it happen (how).

Use-Case 1: LOGIN

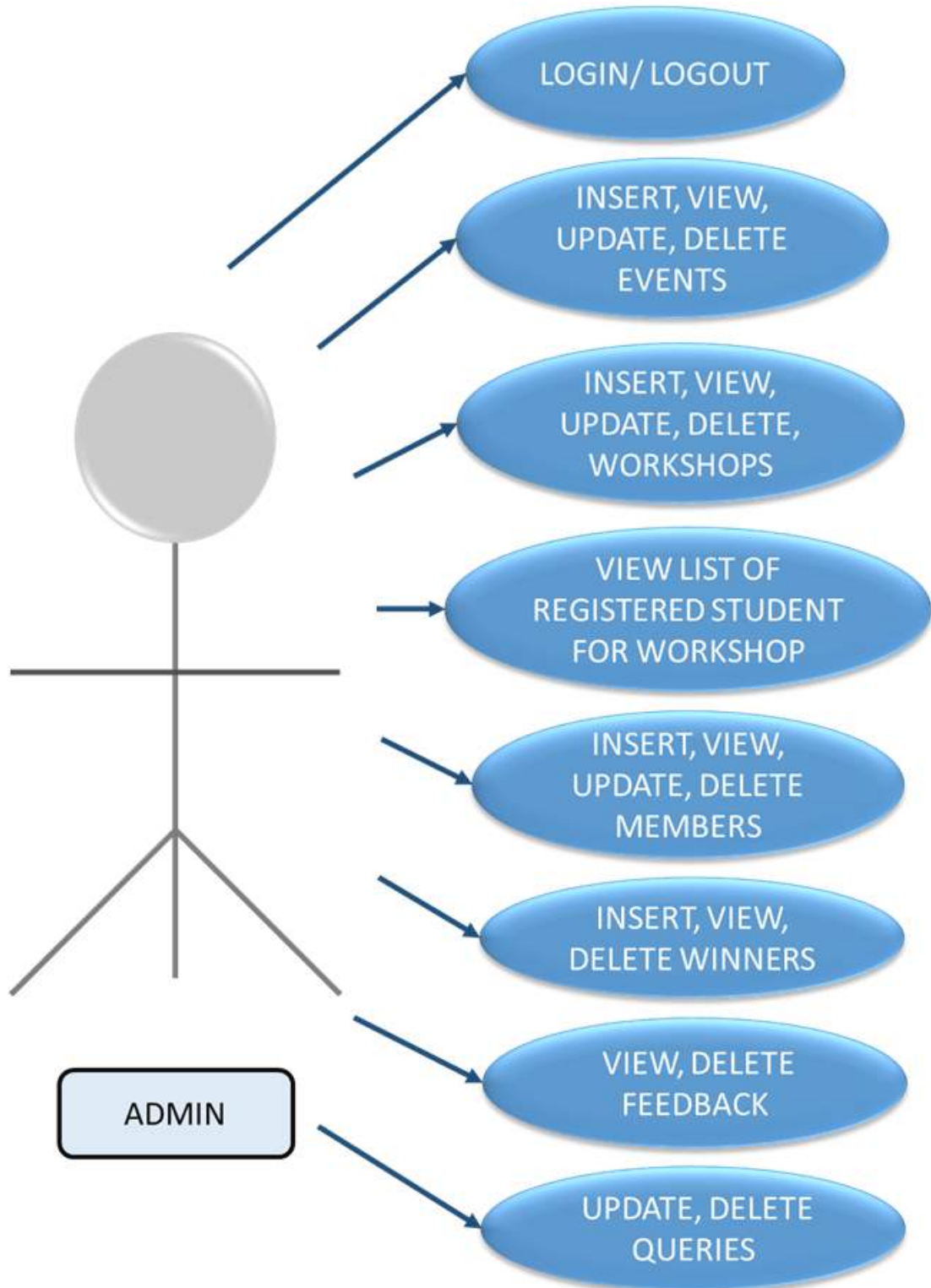
Use Case No	1
Use Case Name	Login
Actors	Admin, club member
Description	Login
Pre-Condition	The users must be the member of the system
Priority	High
Normal Course Event	<ol style="list-style-type: none">1) Actors enter their username2) Actors enter their password3) Actors click login button4) System connects to database5) Homepage displayed
Alternative Course Event	<ol style="list-style-type: none">1) Actors can enter their username and password incorrectly - Error message appears2) If actors choose wrong identity - Error message appears3) Continue with step 1 in the normal course events - An error may occur during the database operation - System show error message

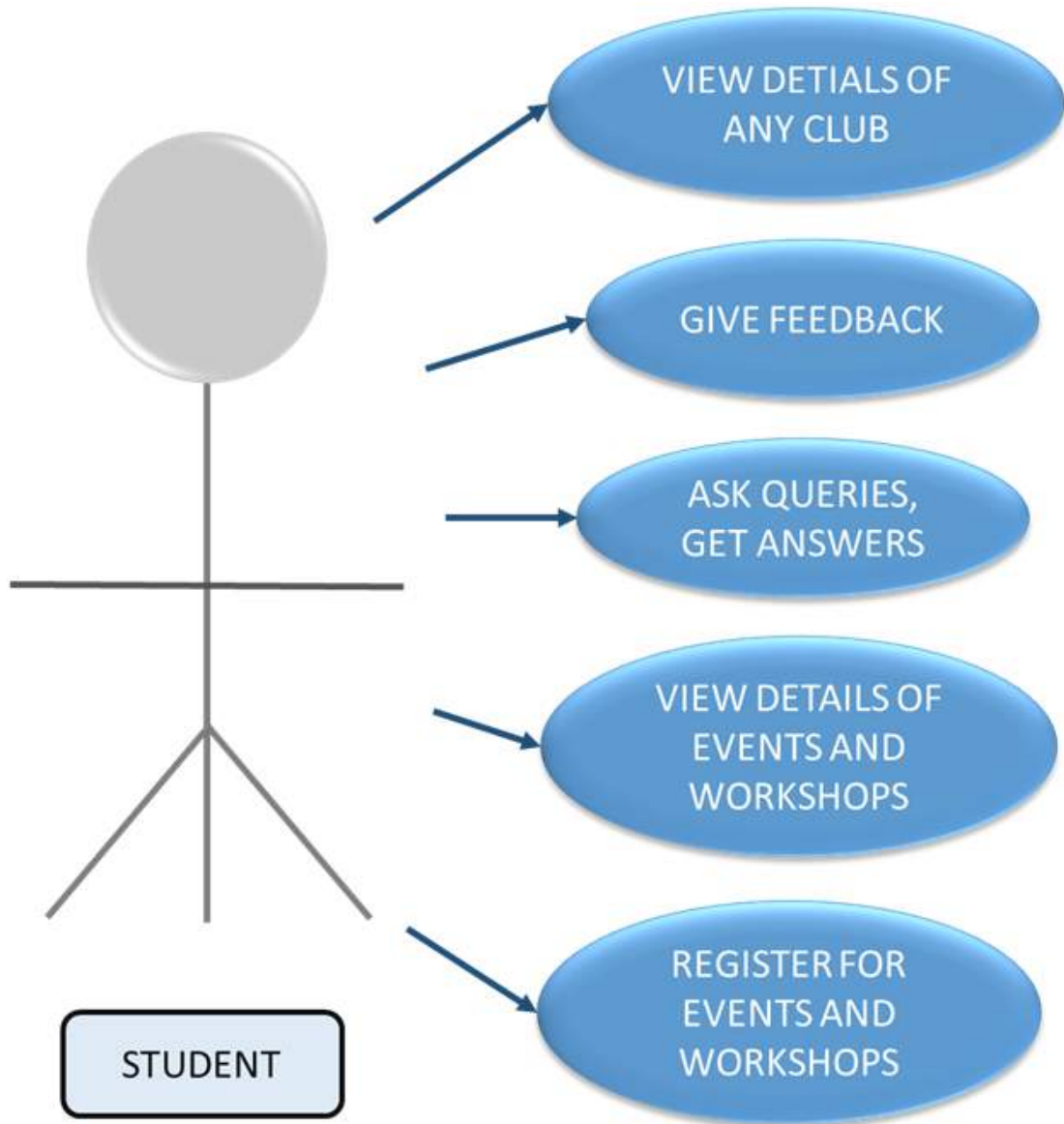
Use-Case 2: ADMIN TOOL

Use Case No	3
Use Case Name	Admin Tool
Actors	Admin
Description	Updating the database for the site
Pre-Condition	Administration must be logged on to the system
Priority	High
Normal Course Event	<ol style="list-style-type: none">1) The admin must be logged on to the System which is defined in use case no.1.2) The admin can insert, view, update and delete the following: Events, Workshops, Winners, Members, Feedback, Queries
Alternative Course Event	<ol style="list-style-type: none">1) The system cannot access to the database2) Error message is displayed.3) Continue the step2 in the normal course events

Use-Case 3: PARTICIPANTS TOOL

Use Case No	5
Use Case Name	Participants Tool
Actors	Students
Description	View events and workshops, get registered, ask queries, give feedback
Pre-Condition	-
Priority	Medium
Normal Course Event	<ol style="list-style-type: none">1) View all information regarding events, workshops and clubs2) Registration for different workshops and events3) Download brochures of clubs4) Give their feedback regarding events5) Ask queries
Alternative Course Event	<ol style="list-style-type: none">1) The system cannot access the the database2) The system puts a message on the window about the problem.3) Continue the step2 in the normal course events





SYSTEM DESIGN (SDS)

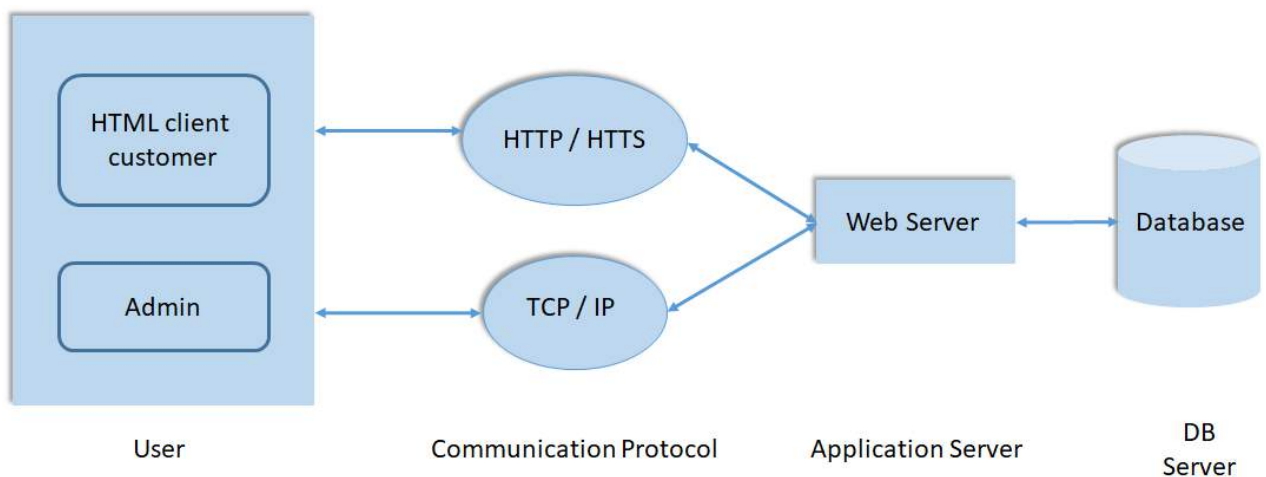
3.1 High-level Design

3.1.1 Introduction

The High Level Design section of the report depicts the architectural design of the project which will be laid out in layman terms.

3.1.2 Product Perspective

Student Associations and Clubs have several different components. Some of these components will be programmed, while others will be implementations of open-source programs. The language implemented will be dictated by it's purpose. The administrative and user interfaces will be using JSP to display the pages, and SQL to retrieve, insert, delete, and update the database. JDBC will be used to submit SQL commands for the automated part of the project such as updating the events and workshops page. This setup will allow for multiple users to interact with the website. It will also be set up using two user levels. First is the basic user i.e. the visitors (majorly students), who can only view the contents of the page. This page is automatically displayed based on their IP address. The second type of user is the Administrator. They have the ability to change information in the database such as inserting new events and updating member lists. This user level can only be attained by logging into the system.



3.1.3 Tools Used

- PowerPoint 2013 and Creately.com is used to generate all the diagrams used in analysis and design phases of the project
- Interfacing with the database to display information on the user's web browser will be done using JSP. It can connect to the database and parse it into viewable HTML code.
- Tomcat compiled JSP pages into servlets to be displayed through Apache.
- Apache - An open source web server that will display requested pages.
- Automated interfacing with the database behind the scenes will be done through JDBC
- NetBeans IDE 8.2 is the development platform

3.1.4 General Constraints

The portal is user friendly and automated. The administrator will make changes accordingly and the visitors are not required to know any of the workings. Without logging in, admin won't be able to make any changes.

3.1.4 Design Details

Major Design Details

The major design features include User Interface, database and process relation. In order to explain these designs more clearly diagrams and tables have been used (Use case diagrams and tables, class diagram, sequence diagram, activity diagram, database tables, UI screenshots)

Technology Architecture

- **Web Application Architecture:** The front end of the program is a web application. Functionality will vary based user privileges if a user is logged in or just visiting as a student. Administrators will have access to administrative abilities based on permissions given to them.
- **Data Access Layer:** The database will only be accessible to the administrator where he can make the pertaining changes.

- **Tools Used:** See section 3.1.3

Standards

- Database - Relational
- Inputs - will be taken through text fields and is going to be stored in the database
- Security - unique username and password will be required to access the server side interface to make changes
- Quality - Maximum through direct and interactive interface

Database Design

See section 3.3

Files

The project uses a large number of files where Tomcat uses a large number of JSP pages and DHCP uses a file to maintain IP. The usernames and passwords will be stored in the database which can be changed.

User Interface

The User Interface is menu-driven with quite many graphics. It will display information clearly for the user and will output information through JSP pages containing HTML codes. Administrative screens will have the same criteria, to input through text fields through such pages. Screenshots have been provided to illustrate the user as well as administrative interface. (See User Interface section at the end of report)

Download Brochures and View Winners

The website will have pages where all previous years brochures could be downloaded which will be provided by the clubs and they can view the winner lists as well.

Error Handling

On encountering any error, a pop up message will be displayed explaining what went wrong.

Safety Requirements

- System's Safety: The login portal of the Admin, the notice for the webinars and events will be tested for different clubs to make sure it responds safely to

software malfunctions, when updated, when students register themselves and other risks.

- Ethical Considerations: The collection, analysis and use of student data be understood as a moral practice and duty.
- Detection and Response: The project will detect the queries of the students when asked and will respond to the students if the asked questions are in the database of the system.
- Laws and Practices: The students will have to follow rules and regulations of the University while registering themselves and will provide their true identity. It will be able to recognize different students of different courses.
- Certifications: Any new software updates or features must be submitted and get verified from CMS(Centre for Mathematical Science) Banasthali University

Security Requirements

- Data Sharing: A management portal for students collects a lot of data on the go. Data and statistics storage will be done to maintain the correct functioning of the portal and to reconstruct what went wrong in case of a breakdown.
- Digital Security: Portal will be engineered to prevent online threats. All communications will be encrypted using SSL.

Availability

The availability of this web application is up to the Internet connection of the client. Since this is client-server related web-site shall be attainable all the time. If the user does not have an account(not an admin) then the user can only see the information which will be displayed on the homepage of the web-site.

Security

Security is one of the crucial things of this project. Only the valid user i.e. admin must be allowed to access the D/B. Also she/he must be able to perform only those jobs for

which she/he is assigned to. The software is secure as it is not allowing user to upload any document from their side. They can only retrieve the information.

Reliability

The system is made to be reliable i.e. not only the program should not crash but other reliability features like proper exception handling ,maintenance of integrity and consistencies of D/B must be taken care of.

Portability

Because we are developing a web application using JAVA technology thus the application can run on any system i.e. it is portable.

Maintainability

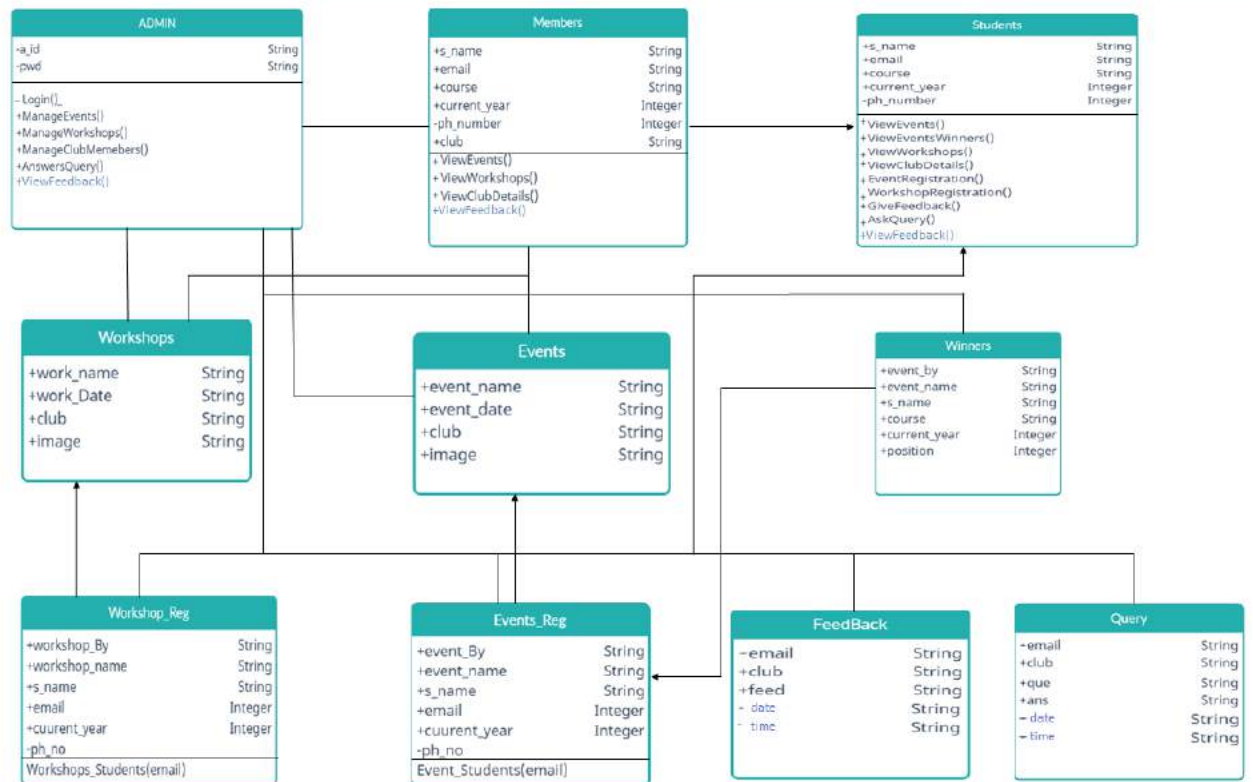
The project should be made in a simple and lucid style so that future maintenance of the project is easy. All the variables must be with valid variable names; different modules for each different function should be made to enhance the readability of the code.

Major Classes

There are two major classes: Admin and Users

- A User can view the contents, ask queries, give feedback, register for workshops and download brochures
- An Admin can view, insert, update or delete any content of the client side as well as access the registered list

3.2 Class Diagram



3.3 Database Design

Admin Table

Field	Type	Description	Constraints
a_id	varchar(30)	Admin ID	Primary Key
pwd	varchar(30)	Password	Not NULL

Course Table

Field	Type	Description	CoNStraints
course	varchar(30)	Course	Not NULL

Events Table

Field	Type	Description	Constraints
event_name	varchar(30)	Event Name	Primary Key
event_date	varchar(30)	Event Date	Not NULL
image	varchar(1000)	Image	Not NULL
club	varchar(30)	Club Name	

Feedback Table

Field	Type	Description	Constraints
email	Varchar(30)	Email ID	Not NULL
club	Varchar(20)	Club	Not NULL
feed	Varchar(100)	Feedback	Not NULL

Event Registration Table

Field	Type	Description	Constraints
event_by	varchar(30)	Event by	
event_name	varchar(30)	Event Name	Not NULL
s_name	varchar(30)	Student Name	Foreign Key
email	varchar(30)	Email ID	Foreign Key
course	varchar(30)	Course	Foreign Key
current_year	numeric(10)	Year	Foreign Key
ph_number	numeric(10)	Phone Number	Foreign Key

Members Table

Field	Type	Description	Constraints
s_name	varchar(30)	Student Name	Not NULL
email	varchar(30)	Email ID	Not NULL
course	varchar(30)	Course	Not NULL
current_year	numeric(3)	Year	Not NULL
ph_number	numeric(30)	Phone Number	Not NULL
club	varchar(30)	Club	Not NULL

Queries Table

Field	Type	Description	Constraints
email	varchar(30)	Email ID	Not NULL
club	varchar(20)	Club	Not NULL
que	varchar(100)	Query	Not NULL
ans	varchar(100)	Answer to query	Not NULL

Students Table

Field	Type	Description	Constraints
s_name	varchar(30)	Student Name	Not NULL
email	varchar(50)	Email ID	Primary Key
course	varchar(20)	Course	Not NULL
current_year	numeric(3)	Year	Not NULL
ph_number	numeric(10)	Phone Number	Not NULL

Winner Table

Field	Type	Description	Constraints
event_by	varchar(30)	Event By	Not NULL
event_name	varchar(30)	Event Name	Not NULL
s_name	varchar(30)	Student Name	Foreign Key
course	varchar(30)	Course	Foreign Key
current_year	numeric(3)	Year	Foreign Key
postion	varchar(30)	Position	Not NULL

Workshops Table

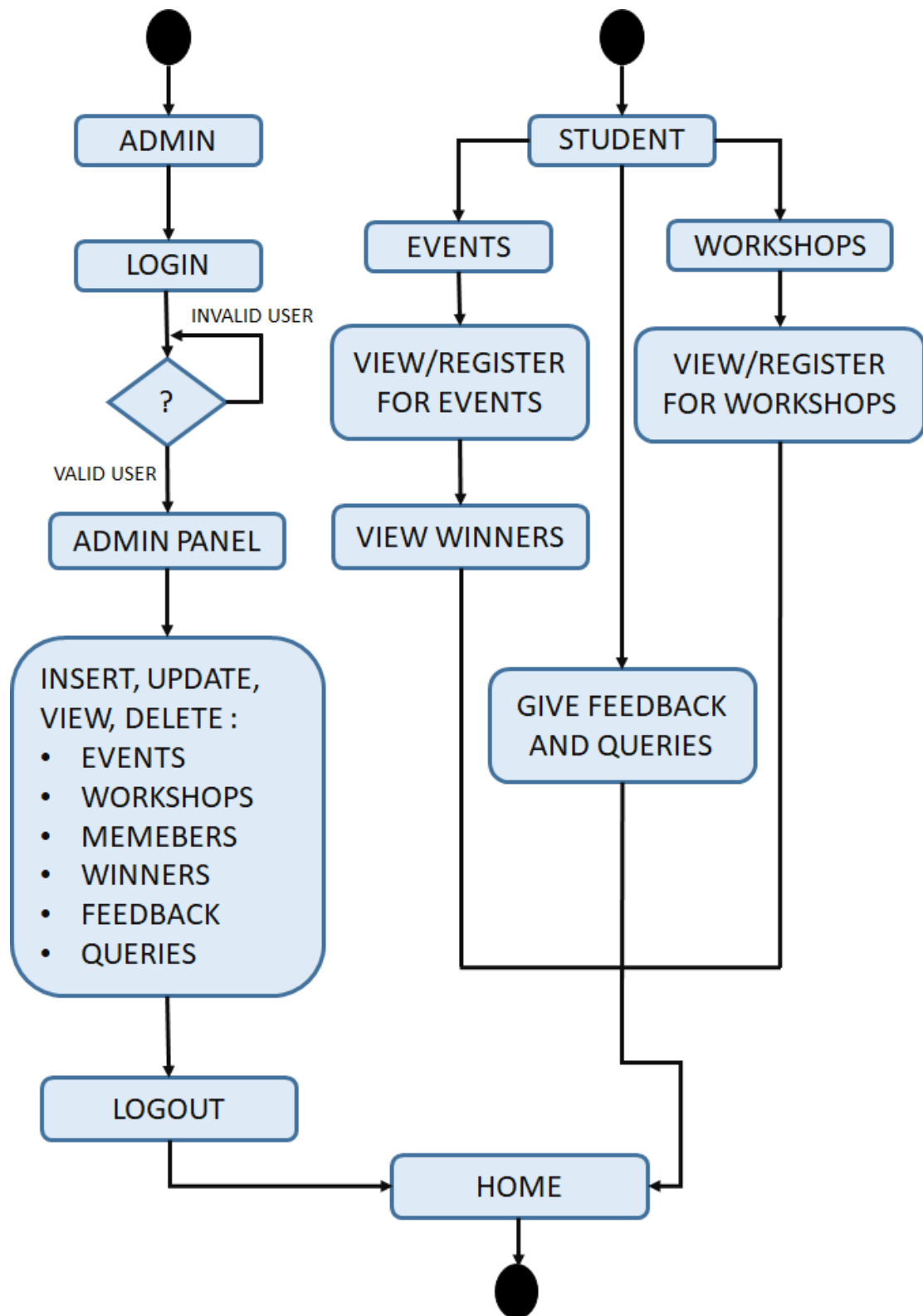
Field	Type	Description	Constraints
work_name	varchar(30)	Workshop Name	Primary key
work_date	varchar(30)	Workshop Date	Not NULL
image	varchar(1000)	Image	Not NULL
club	varchar (30)	Club	Not NULL

Workshop Registration Table

Field	Type	Description	Constraints
workshop_by	varchar(30)	Workshop By	
workshop_name	varchar(30)	Workshop Name	Foreign Key
s_name	varchar(30)	Student Name	Foreign Key
email	varchar(30)	Email ID	Foreign Key
course	varchar(30)	Course	Foreign Key
current_year	numeric(3)	Year	Foreign Key
ph_number	numeric(10)	Phone Number	Foreign Key

3.4 Data flow Diagrams/Activity Diagrams

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the UML, activity diagrams are intended to model both computational and organizational processes.



3.5 Sequence Diagrams

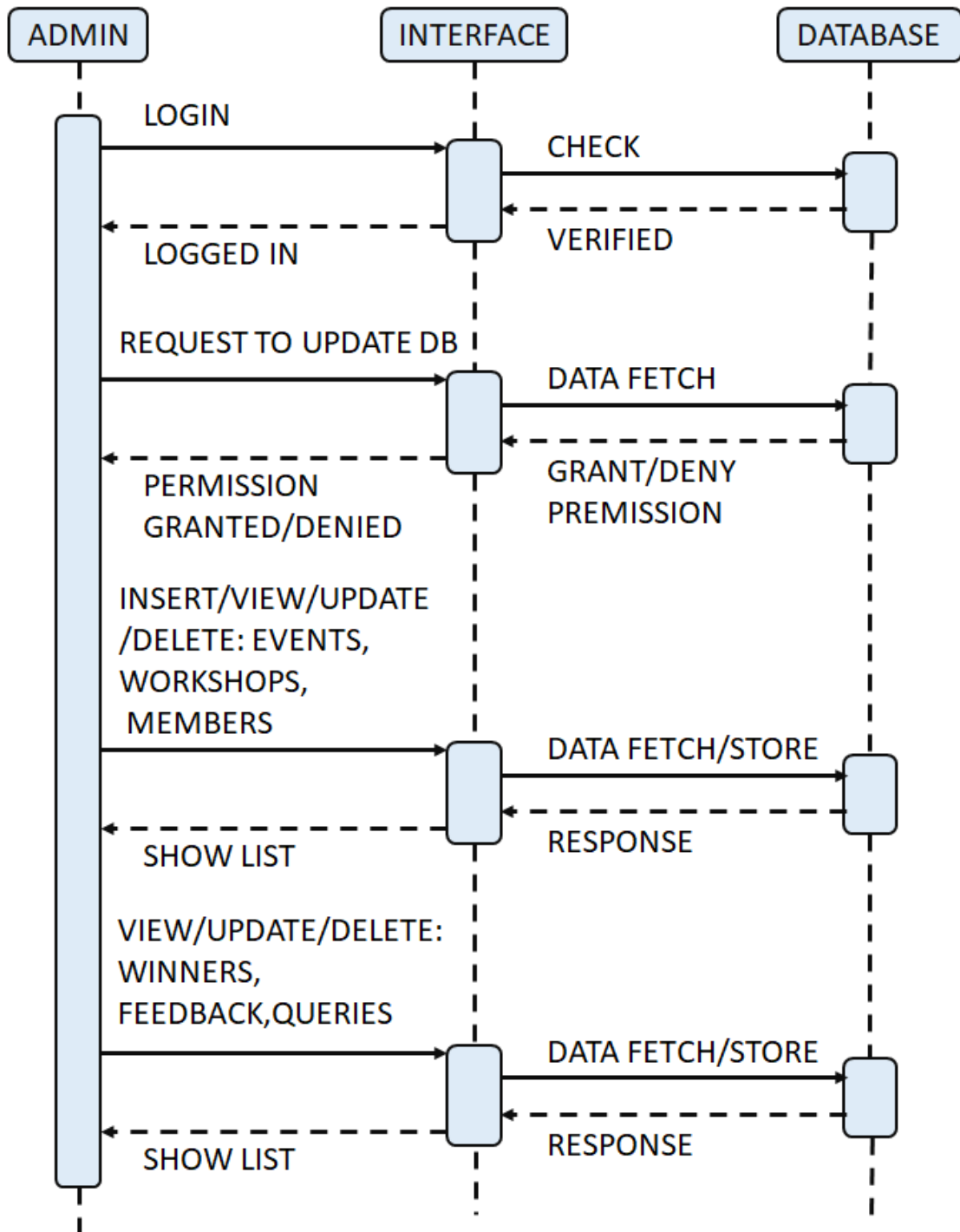
A sequence diagram is an interaction diagram that shows how processes operate with one another and in what order. It is a construct of message sequence charts. A sequence diagram shows object interaction arranged in a time system.

A) Sequence Diagram for Admin

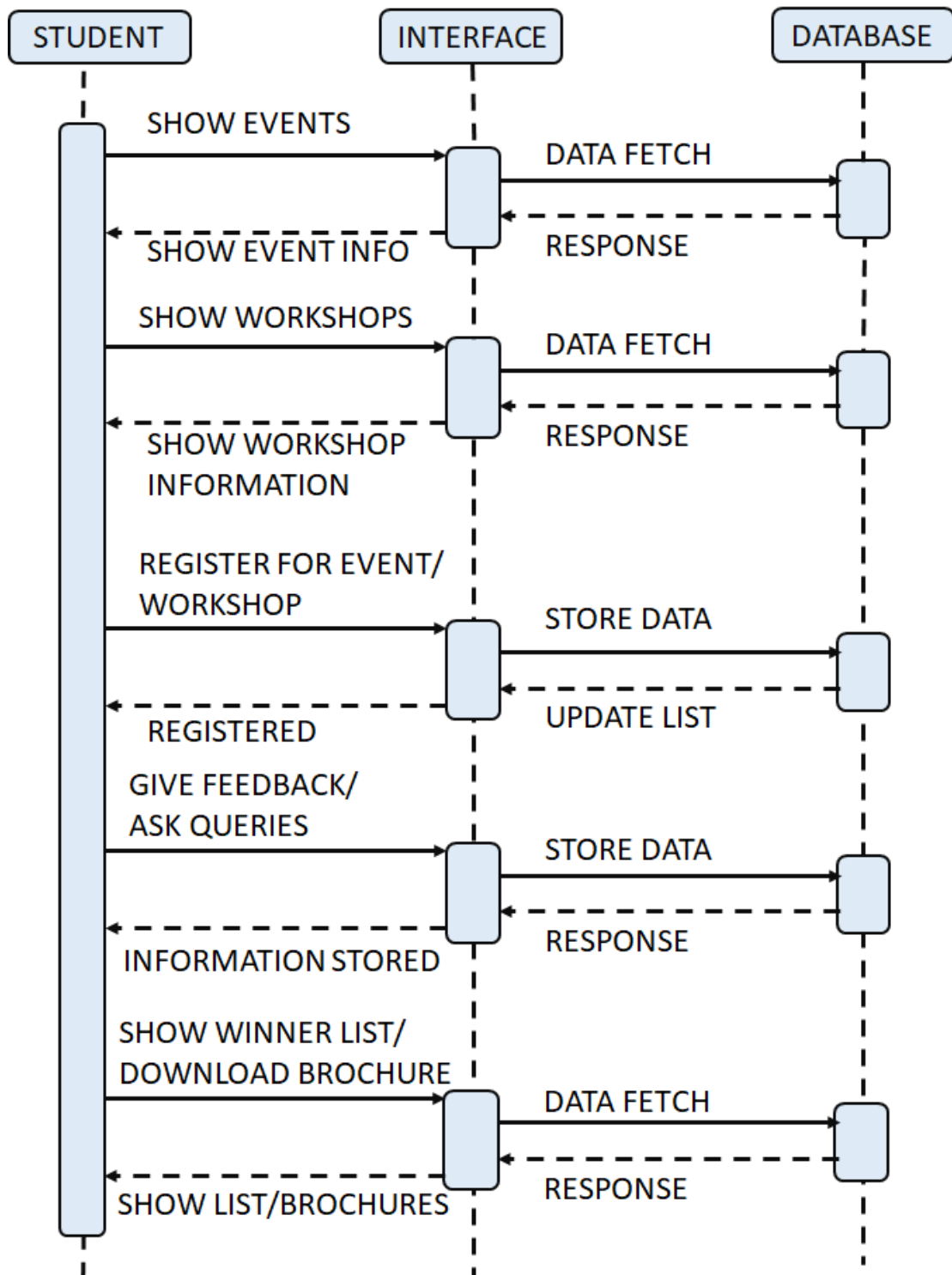
B) Sequence Diagram for Students

(Next Page)

A) Sequence Diagram for Admin



B) Sequence Diagram for Students



TESTING

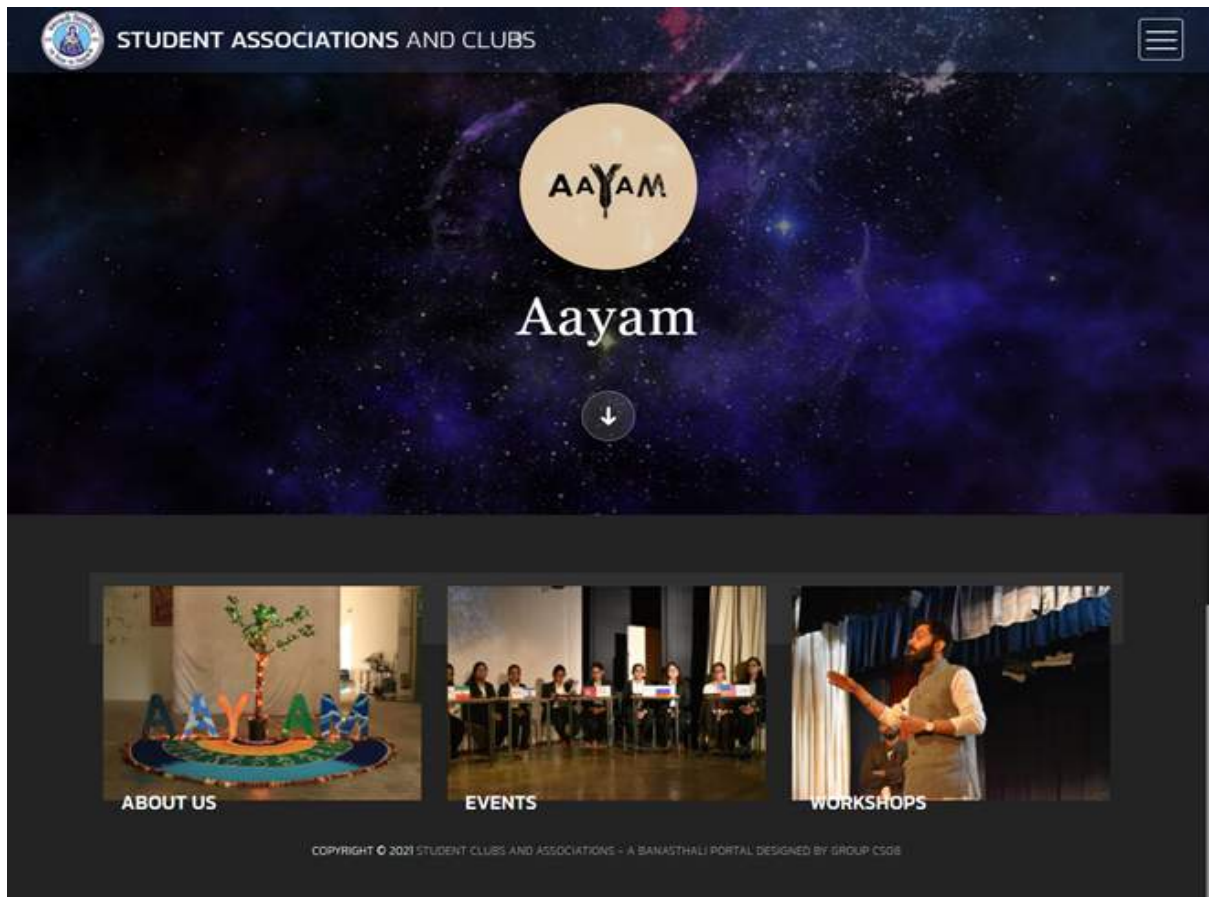
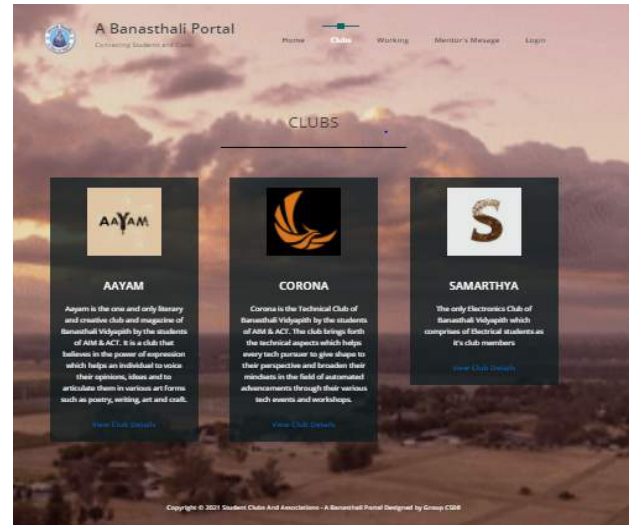
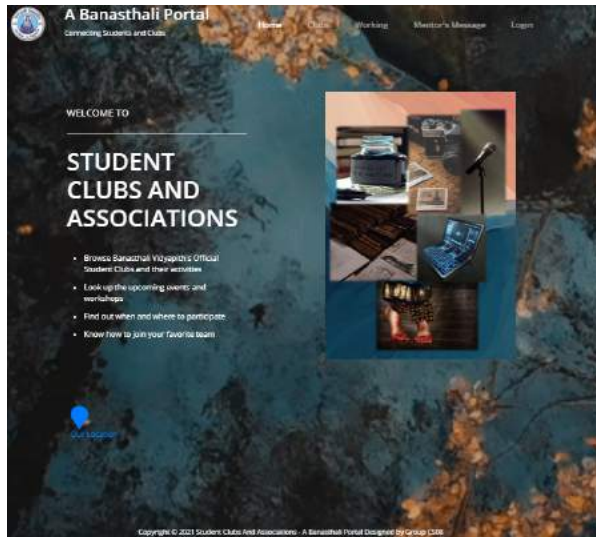
4.1 Test cases


Test Case ID	Test Scenario	Test Data	Results
TU01	Check Admin Login with Valid Data	Login id = a_admin Password = aayam1	Admin logs in to the particular club's portal.
TU02	Check Admin Login with Invalid Data	Login id = a_admin Password = samarthya	Admin cannot log in to the particular club's portal.
TU03	Event Registration with Valid Student Data (i.e. Email id is of Banasthali domain)	Email id = btbtc18004_divya@banasthali.in	Students are able to successfully register for the event.
TU04	Event Registration with Invalid Student Data (i.e. Email id is not of Banasthali domain)	Email id = divyayadavbanas@gmail.com	Students are not able to register for the event.
TU05	Workshop Registration with Valid Student Data (i.e. Email id is of	Email id = btbtc18004_divya@banasthali.in	Students are able to successfully register for the workshop,


	Banasthali domain)		
TU06	Workshop Registration with Invalid Student Data (i.e. Email id is not of Banasthali domain)	Email id = divyayadavbanas@gmail.com	Students are not able to register for the workshop.

USER INTERFACES

Our Project has a menu-driven interface, snapshots of which are provided below:




Student Associations and Clubs
Home
Aayam
View Queries



Aayam Feedback


Email*

Feedback for

Feedback

*Required fields

Submit Cancel



Aayam Queries

Email*


Query for


Queries

*Required fields

Submit Cancel

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Student Associations and Clubs
Home
Aayam
Events



Aayam Event Registration

Email*

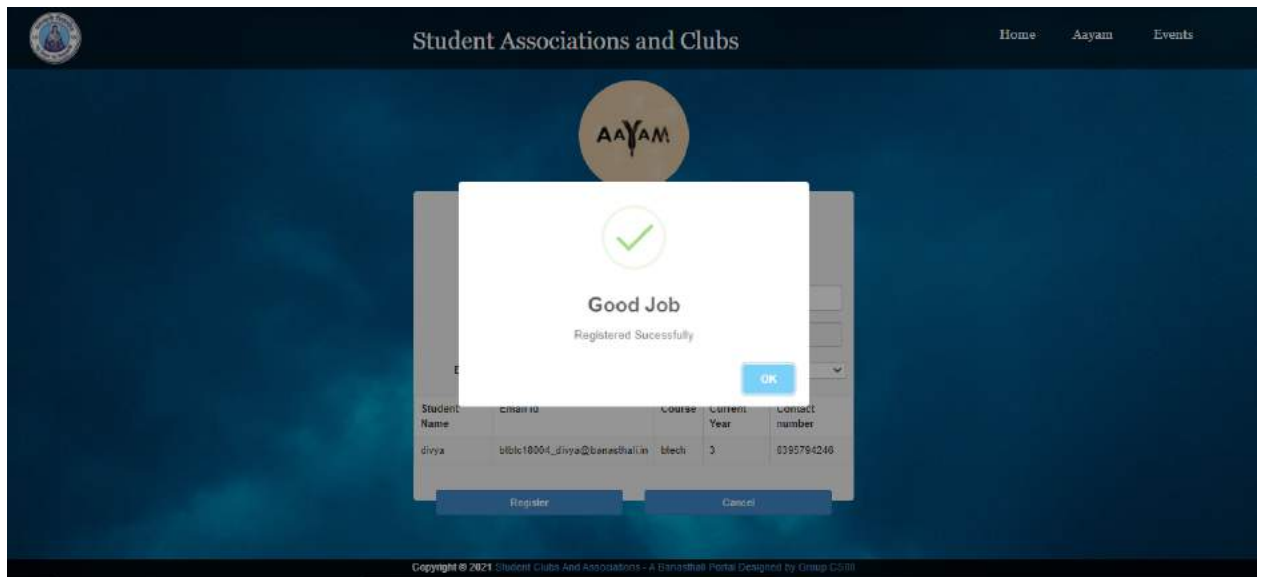
Event By

Event Name

Student Name	Email Id	Course	Current Year	Contact number
divya	bbic18004_divya@banasthali.in	blach	3	8395704246

Register Cancel

localhost:24786/Web/Application1/aayameventreg.jsp#
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Previous Events

2020

[CLICK TO DOWNLOAD](#)

2019

[CLICK TO DOWNLOAD](#)

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Student Associations and Clubs

Home Aayam Workshops

Aayam

Workshop Registration

Email*

Workshop By

Workshop Name

Student Name	Email id	Course	Current Year	Contact number
<div>Register Cancel</div>				

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Sign in

[HOME](#) [CLUBS](#)

LOG IN

[Forgot Password?](#)

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Wrong Password.

Sign in

[HOME](#) [CLUBS](#)

LOG IN

[Forgot Password?](#)

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Aayam Admin Panel

Events	Workshops	Members	Winners	Feedback	Queries
Insert	Insert	Insert	View	View	Update
View	View	View	Insert	Delete	Delete
Update	Update	Update	Delete		
Delete	Delete	Delete			
	Workshop Registrations				

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Student Associations and Clubs
Home
Aayam



Aayam

WINNERS

Event by	Event name	Student name	Course	Current Year	Position
aayam	art	asitha	Btech (EC)	2	1
aayam	dance	divya	Btech (MT)	3	2
aayam	collage making	ishu	Btech (CS)	3	1
aayam	glass painting	saabha	Btech (CS)	2	Participation
aayam	glass painting	manu	Btech (MT)	3	2

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Student Associations and Clubs
Home
Logout



Corona Admin Panel

Insert Events

Event Name:

Event Date:

Club Name:

Upload Image: AyamEvent7.png

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Student Associations and Clubs
Home
Logout



Aayam Admin Panel

Update Workshops


Workshop name to update:


Workshop Date:

Club Name:

Upload Image: AyamEvent8.png

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Student Associations and Clubs
Home
Logout





Aayam Admin Panel

View Winners

Event by	Event name	Student name	Course	Current Year	Position
Aayam	Aayam	Divya	B tech	3	participated
Aayam	Samir	Aarish	B tech	3	3
Aayam	Aayam	Aarushi	B tech	3	2
Aayam	Aayam	Rishi	B S C	1	1

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Aayam Admin Panel


Delete Events

Choose Event you want to delete

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Logout





Done

Deleted Successfully!!

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Logout




Aayam Admin Panel


Workshop Registrations

Choose Workshop Name

Student Name	Email Id	Course	Current Year	Contact number
astha	bibt:19313_astha@banasthali.in	Btech CS	3	9865327402
isha	bibt:15126_isha@banasthali.in	Btech CS	3	7894561230





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Student Associations and Clubs
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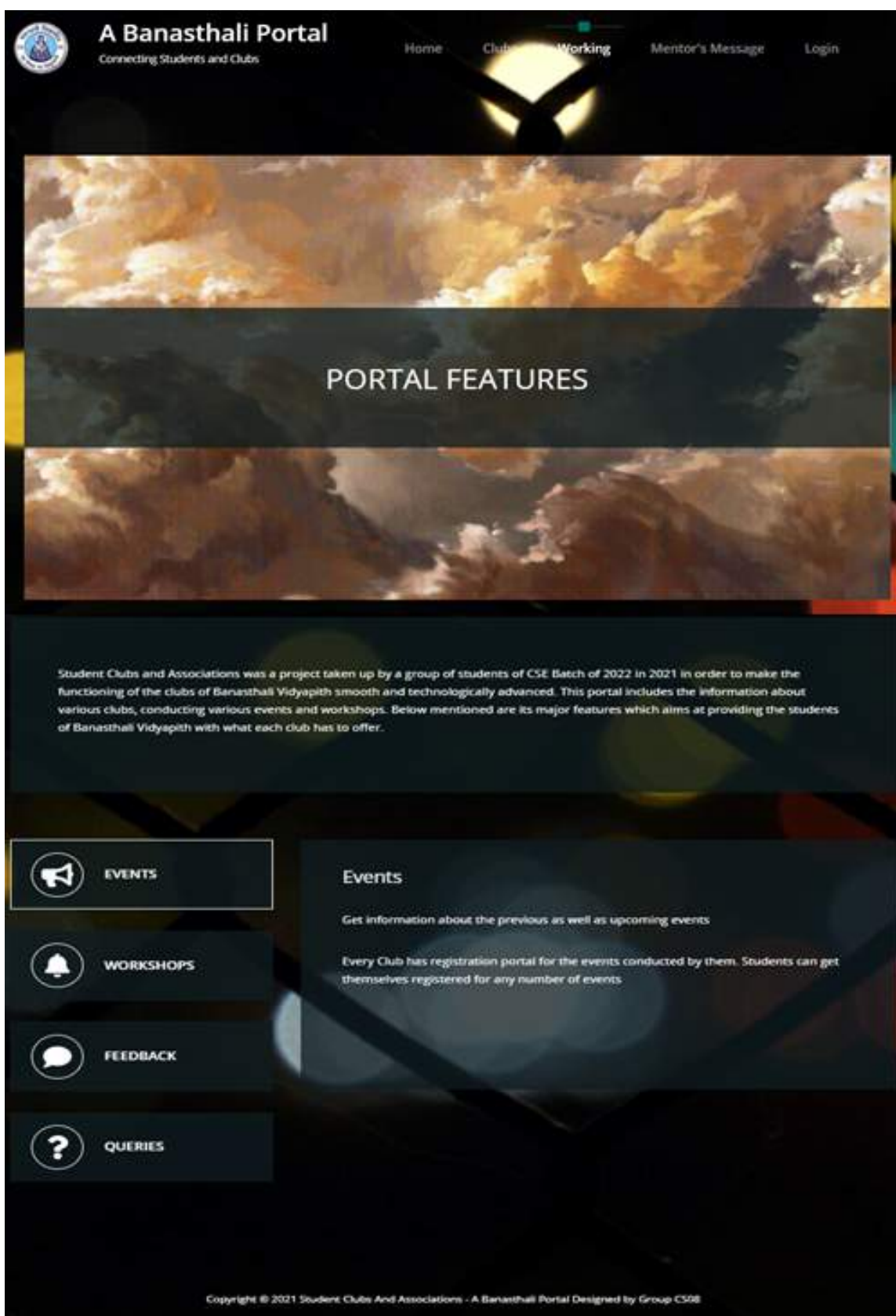


Aayam Admin Panel

View Events

Event Name	Event Date	Image	Club
poetry	06-10-2021		astha
Art/Craft	06-15-2021		astha
Music	06-18-2021		astha
Adus	06-22-2021		astha

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A Banasthali Portal

Connecting Students and Clubs

[Home](#)

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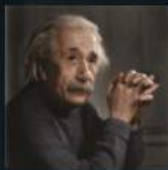
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MENTOR'S MESSAGE

A piece of experience from the experienced



ALBERT EINSTEIN

American Physicist

Anyone who has never made a mistake
has never tried anything new



SIR C.V. RAMAN

Indian Physicist

I would like to tell the young men and
women before me not to lose hope and
courage. Success can only come to you
by courageous devotion to the task lying
in front of you



RICHARD FEYNMAN

American Physicist

The first principle is that you must not
fool yourself and you are the easiest
person to fool

REFERENCES

1. Pressman Roger S.,Software Engineering “A Practitioner’s Approach” Fifth Edition, McGraw-Hill Publication,2000.
2. Navathe Shamkant B., Fundamentals of Database Systems, Fifth EditionPearson Publication.
3. Bayross Ivan,SQL,PL/SQL, Third Edition,BPB publications.
4. Schildt Herbert, The Complete Reference java Third Edition ,Tata McGraw-Hill.
5. IEEE STD 830-1998, IEEE Recommended Practice for Software Requirement Specifications.