



**Banasthali Vidyapith**

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**PROJECT REPORT**

**ON**

**STUDENT ASSOCIATIONS AND CLUBS: A BANASTHALI PORTAL**

**Faculty of Mathematics and Computing,**

**Banasthali Vidyapith**

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B.Tech CS 3rd year (VI semester)

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# SRS

## **1. Introduction**

### **1.1 Purpose**

1. To provide a user friendly interface for managing and viewing the activities collectively of various clubs of Banasthali Vidyapith. It is supposed to be a helpful online service tool.
2. Convenience is a major advantage of this software - It will computerize the existing manual system of the clubs in Banasthali Vidyapith. The existing manual system requires a lot of paperwork to keep track of schedules, registration, results etc, which is very hectic as well as time consuming.
3. The main aim behind developing the software is to avail the students of Banasthali with easy tools at their fingertips that would help them to streamline their talent regarding their interest for event participation.
4. The software is more helpful to the members as it will allow them to promote their events and keep the students updated with the various activities going on in various clubs.

### **1.2 Document Conventions**

#### **Definitions**

1. **Event Management-** Event management is the planning and managing of an event, project or activity.
2. **Administration-** The person who can access all areas of a product. He/She is the person who maintains the software and has the maximum rights.
3. **Browser-** A browser is an application program that provides a way to look at and interact with all the information on the World Wide Web.
4. **Database-** Collection of interrelated data that contains information relevant to enterprise.

5. **Web page**- Pages of information placed on-network that may contain texts, graphics images, moving pictures, sound files and other types of electronic information.
6. **Website**- Collection of files called webpage, which might contain text and images.

### **Abbreviation**

1. I/P- Input
2. O/P- Output
3. H/W- Hardware
4. S/W- Software
5. N/W- Network
6. Mgmt- Management
7. D/B- Database

### **Acronyms**

- **HTML:** Hypertext Mark-up Language is a mark-up language used to design static web pages.
- **HTTP:** Hypertext Transfer Protocol is a transaction oriented client/server protocol between web browser & a Web Server.
- **HTTPS:** Secure Hypertext Transfer Protocol is a HTTP over SSL (Secure Socket Layer). WWW: World Wide Web
- **TCP/IP:** Transmission Control Protocol/Internet Protocol, the suite of communication protocols used to connect hosts on the Internet. TCP/IP uses several protocols, the two main ones being TCP and IP.
- **RAM:** Random Access Memory
- **HDD:** Hard Disk Drive
- **IIS:** International Information Server
- **IE:** Internet Explorer

### **1.3 Intended Audience and Reading Suggestions**

This project allows the students of Vidyapith an easy and centered access to the information regarding various events and workshops organized by the clubs. It also allows the members of various clubs to update details about their respective events.

**Section 1:** Contains the general description of the system.

**Section 2:** Specifies the specific requirements of the system including functional requirement (Use Cases, Use Case Diagram) and non-requirement.

**Section 3:** Gives the System Design Description using sequence diagram and activity diagram.

**Section 4:** Gives the Data Design Description using various database tables, Use-Case Diagram, class diagram and activity diagram

### **1.4 Product Scope**

1. The scope of the project is global as it is a web application and can be used by any person anytime.
2. Users can view the application and get the information regarding the events, workshops etc and can register at their convenience.
3. This system would be capable of handling extremely large chunks of data.
4. Students can also give their feedback after visiting the application in the form of suggestion, praise, comment or query.
5. The events can be added as well as updated anytime time by the members of their respective clubs with the prior permission of the admin.
6. It reduces time.

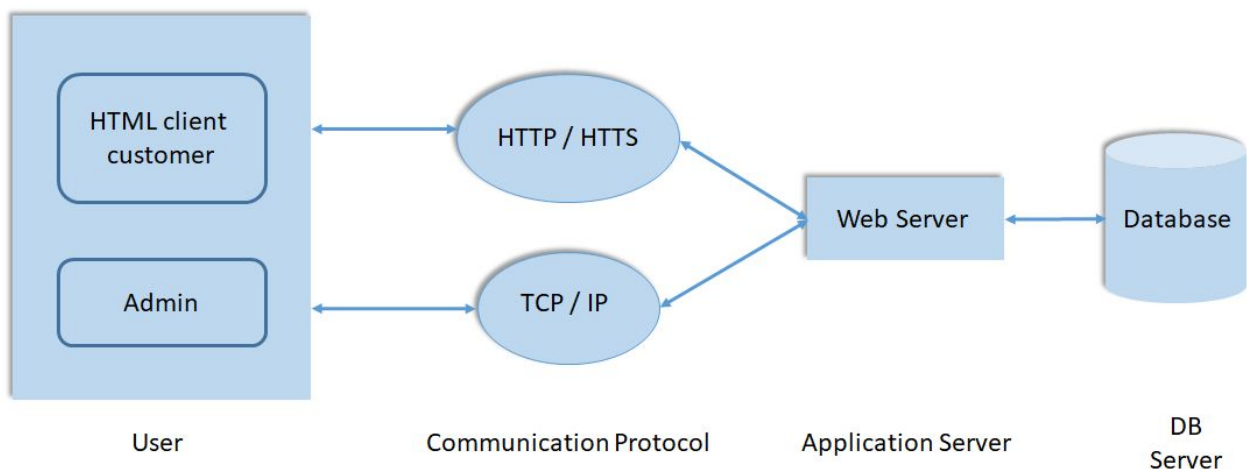
## 1.5 References

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 Edition Pearson 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.

## 2. Overall Description

### 2.1 Product Perspective

The main aim of project Banasthali Student’s Club management system is to maintain the information regarding the various events and workshops organized by respective clubs in Banasthali. The main aim behind developing the software is to provide the students of Banasthali with easy tools at their fingertips that would help them to streamline their talent regarding their interest for event participation.





## 2.2 Product Functions

1. **Login:** Club Members can login.
2. **Event Management:** Members can add new events and workshops details, students can view /select different events.
3. **Workshop Registration:** Students can register for different workshops.
4. **Feedback:** Students can post their feedback regarding events
5. **Queries:** Students can ask their queries.
6. **Event Registration:** Students can register for different events.

## 2.3 User Classes and Characteristics

The user must be familiar to work with GUI components. The user is computer literate, well aware of English. Users should be able to retrieve the information on the club portals from the database. The system will support two types of user privileges: Student and Club member. Students will have access to all the information, notices, queries etc i.e. student information and club members will have access to student information as well as their particular club's portal management functions.

- Students should be able to:
  1. View the portals
  2. Register for workshops
  3. Give Feedback
  4. Ask queries
  5. Register for events.
- Club members should be able to:
  1. Have student privileges
  2. Update the events and workshop details of their particular Club
  3. Add/Delete the information
  4. Answer the queries
  5. Make changes from time to time without any issues

## **2.4 Operating Environment**

Operating Environment for the Student Associations and Clubs: A Banasthali portal is listed below:

- Distributed Database
- Operating System: Windows/Linux
- Client/Server System
- Database: sql + database

## **2.5 Design and Implementation Constraints**

Our project is GUI based application.

1. Login id and password is used for the identification of the authorized user
2. The system is working for the single server.
3. Valid information should be filled in the request form available for online registration.
4. Online registration must be done up till last date announced by the respective club.

## **2.6 Assumptions and Dependencies**

- There is no change in the user's requirements.
- TCP /IP protocol is installed to communicate through HTTP pages.
- Various clubs will be provided with a login ID and password i.e. one ID per club.
- Internet facilities are available all the time.
- System date must be correct.
- The Student's database is already provided for the workshop and event registration.

### **3. External Interface Requirements**

#### **3.1 User Interfaces**

- **Front End:** Java Servlet, Html,CSS, Bootstrap.
- **Back End:** MySql/Derby
- **Design Tool:** Netbeans IDE
- **Web Server:** Tomcat

#### **3.2 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.

#### **3.3 Software Interfaces**

##### **• Server side requirements**

1. Operating system: Microsoft Windows 7 or onwards
2. Web Server: Tomcat

- **Client side requirements**

1. Operating system: Microsoft/linux.
2. Browser: Any browser (Java Enabled)

- **Developer side requirement**

1. Operating system: Windows 7 or onwards.
2. Browser: Any browser.
3. Frontend: Java /CSS/HTML/Bootstrap
4. Backend: MySQL
5. Design Tools: Netbeans IDE

### **3.4 Communications Interfaces**

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

## **4. System Features**

### **4.1 Description and Priority**

Our portal maintains information about each and every club's events, workshop details, queries asked and answered, notices, announcements and registration for workshops and events. The project has high priority because it keeps on getting updated by the respective club members and the database keeps track record of everything.

### **4.2 Stimulus/Response Sequences**

- Display the information about each club's upcoming events and workshops.
- Register for workshops and events

## 4.3 Functional Requirements

- **Modules**

### **Module 1 Admin**

- I/P- Login and password
- Process- Information is verified from the D/B.
- O/P- Logged in, admin can handle the D/B activities. The admin can add or remove club members, give permission to add events, workshops etc, view the results of their events, and view the feedback of the students regarding events and the queries posted.

### **Module 2 Sign up**

- I/P- Student name, smart card ID, password, course, Branch, Year, email id, contact no, club name.
- Process- All information is stored in D/B and admin/member is registered.
- O/P- Admin/club members can sign up.

### **Module 3 Event**

- I/P- Click on a particular event for which you want to get registered.
- Process- Information is inserted in D/B.
- O/P- Information is displayed.

### **Module 4 Workshop Registration**

- I/P-Click on a particular event for which you want to get registered.
- Process- Information is inserted in D/B.
- O/P- Student is successfully registered.

### **Module 5 Club member**

- I/P- Login and password

- Process- Information is verified from D/B.
- O/P- Logged in, Club members can handle D/B for workshop registration, events, etc declare results of their events, manage workshops and events, answer queries of students and view feedback.

### **Module 6 Results**

- I/P - Click on results for particular events.
- Process -Information is fetched from D/B.
- O/P- Results of different events are displayed.

### **Module 7 Feedback/ Queries**

- I/P - Click on Feedback/Queries.
- Process -Information is inserted in D/B.
- O/P- Feedback is displayed/Query is submitted.

- Use Cases

### 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"> <li>1) Actor must choose the options from admin/member</li> <li>2) Actors enter their username</li> <li>3) Actors enter their password</li> <li>4) Actors click login button</li> <li>5) System connects to database</li> <li>6) Homepage displayed</li> </ol>
Alternative Course Event	<ol style="list-style-type: none"> <li>1) Actors can enter their username and password incorrectly - Error message appears</li> <li>2) If actors choose wrong identity - Error message appears</li> <li>3) Continue with step 1 in the normal course events - An error may occur during the database operation - System show error message</li> </ol>

## Use Case 2 - SIGN UP

Use Case No	2
Use Case Name	Sign Up
Actors	Admin, club member
Description	User sign up
Pre-Condition	New user with new username is required
Priority	Medium
Normal Course Event	<ol style="list-style-type: none"><li>1) Actors enter their username</li><li>2) Actors enter their password</li><li>3) Actors enter required information</li><li>4) Actor click Sign up button</li><li>5) System connect to database</li><li>6) A message appears which shows the successful sign up</li></ol>
Alternative Course Event	<ol style="list-style-type: none"><li>1) If same username exist in database</li><li>2) Error message appears</li><li>3) Continue with step1 in normal course events</li><li>4) An error may occur during database operation</li><li>5) System show error messages</li></ol>



### Use Case 3 - 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"><li>1) The admin must be logged on to the System which is defined on use case no.1.</li><li>2) Can add or remove members</li><li>3) Can give permission to the members to add and update events and workshops.</li><li>4) View all information regarding to events and workshops, View result of various events, View feedback and queries</li></ol>
Alternative Course Event	<ol style="list-style-type: none"><li>1) The system cannot access to the database</li><li>2) Error message is displayed.</li><li>3) Continue the step2 in the normal course events</li></ol>

#### Use Case 4 - MANAGEMENT TEAM TOOL

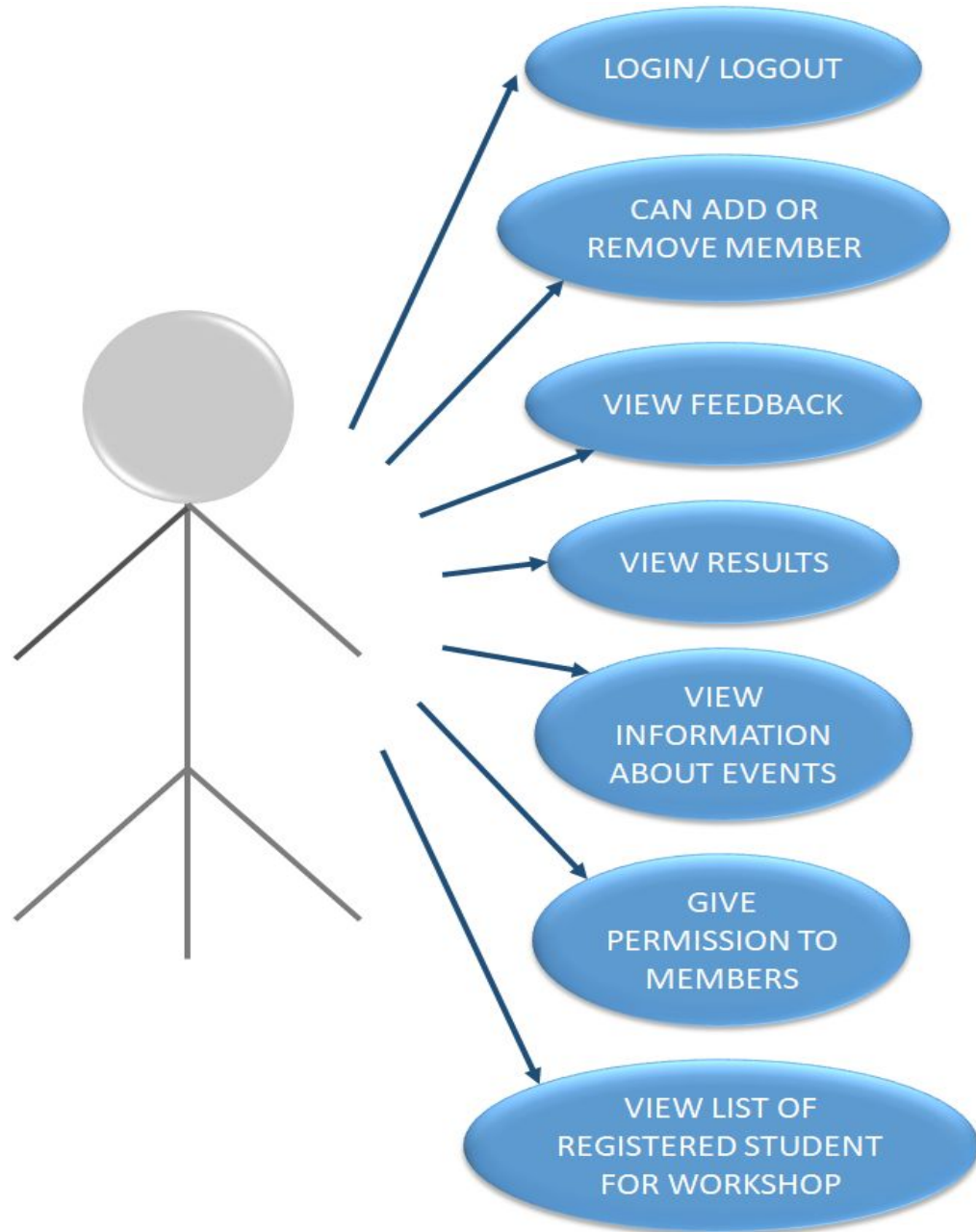
Use Case No	4
Use Case Name	Management Tool
Actors	Members
Description	Updating the database for participants
Pre-Condition	Club member must be logged on to the system
Priority	High
Normal Course Event	<ol style="list-style-type: none"><li>1) The member must be logged on to the System which is defined on use case no.1.</li><li>2) The System gives opportunity the doing the following :<ol style="list-style-type: none"><li>a) The member can manage and edit various events and workshops with permission of admin.</li><li>b) The member gives result of various events.</li><li>c) Member can answer queries.</li></ol></li></ol>
Alternative Course Event	<ol style="list-style-type: none"><li>1) The system cannot access to the database</li><li>2) The system puts a message on the window about the problem.</li><li>3) Continue the step2 in the normal course events</li></ol>

## Use Case 5 - PARTICIPANTS TOOL

Use Case No	5
Use Case Name	Participants Tool
Actors	Students
Description	View information regarding events and workshops, can registered for workshops. Give Feedback and ask queries.
Pre-Condition	-
Priority	Medium
Normal Course Event	<ol style="list-style-type: none"><li>1) The participants must be logged on to the System which is defined on use case no.1.</li><li>2) View all information regarding events and workshops.</li><li>3) Registration for different workshops and events</li><li>4) View all important dates &amp; announcements.</li><li>5) Give their feedback regarding events.</li><li>6) Ask queries</li></ol>
Alternative Course Event	<ol style="list-style-type: none"><li>1) The system cannot access the the database</li><li>2) The system puts a message on the window about the problem.</li><li>3) Continue the step2 in the normal course events</li></ol>

- Use Case Diagrams

Use Case Diagram for ADMIN

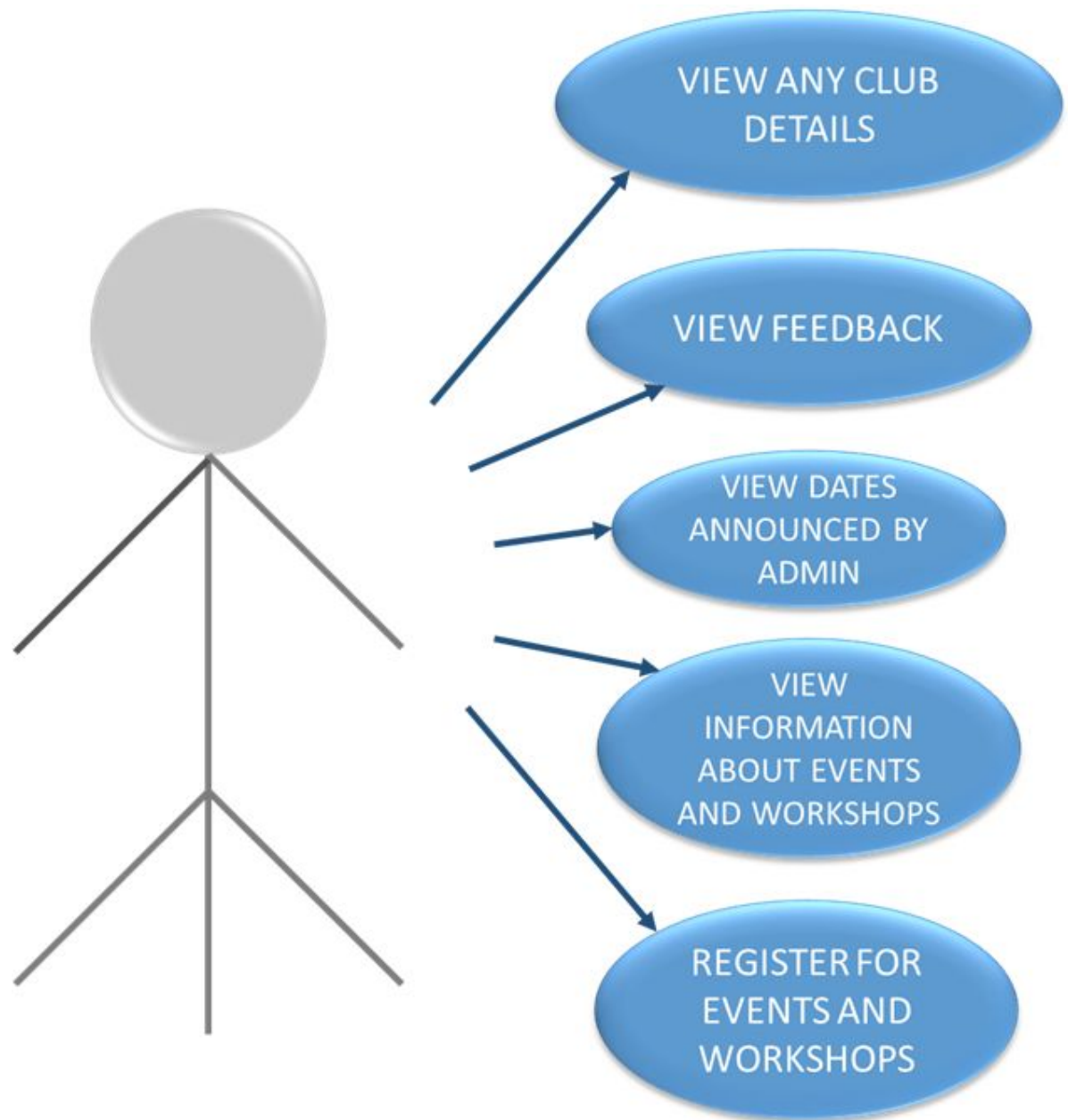


### Use Case Diagram for MEMBER





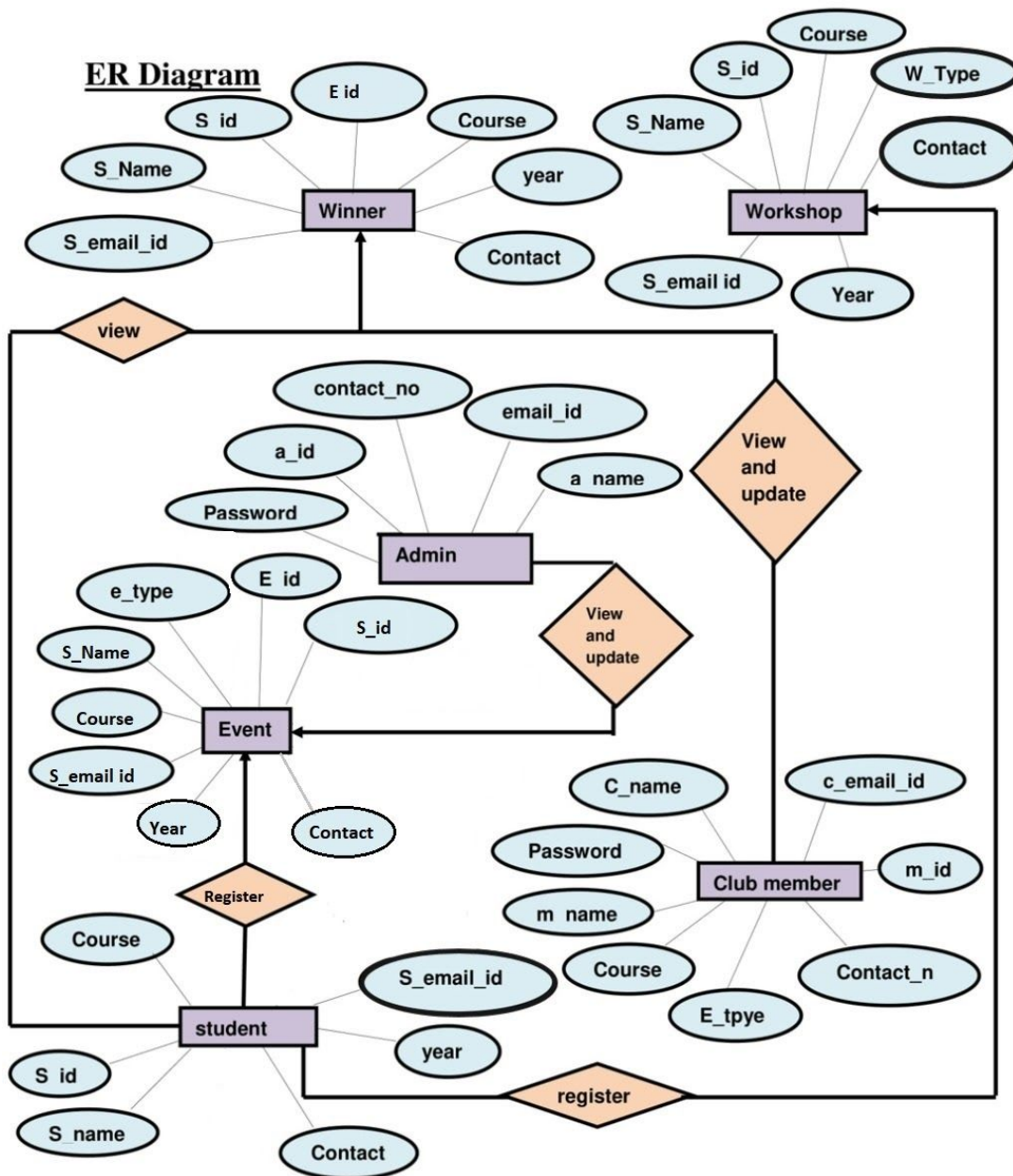
## Use Case Diagram for STUDENTS



## 5. Other Nonfunctional Requirements

### 5.1 Performance Requirements

#### 5.1.1 E-R Diagram



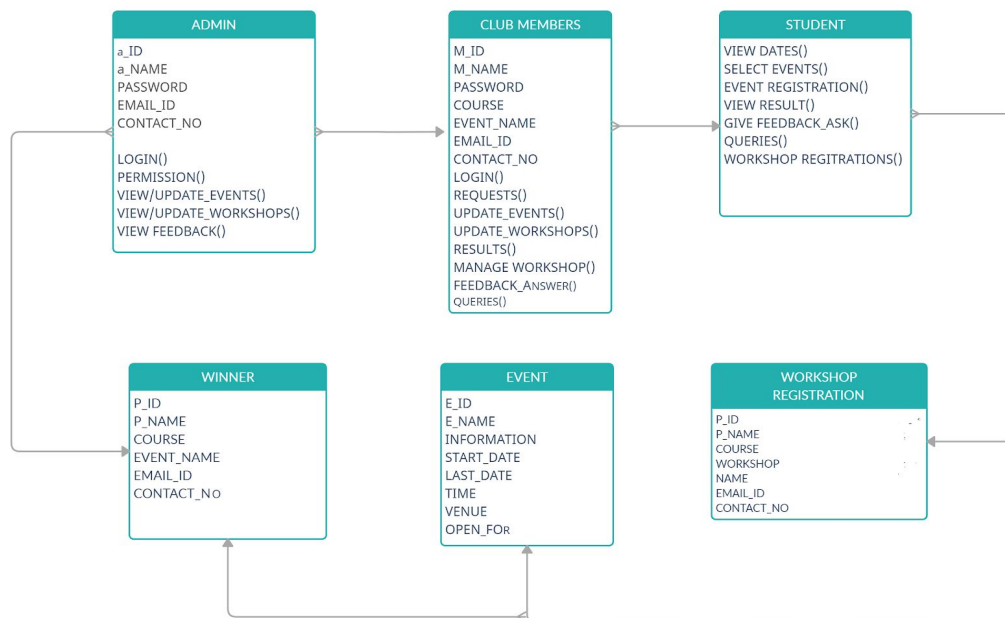
### 5.1.2 Normalization

The basic objective of normalization is to reduce redundancy which means that information is to be stored only once. Storing information several times leads to wastage of storage space and increase in the total size of the data stored.

If a database is not properly designed it can give rise to modification anomalies.

Modification anomalies arise when data is added to, changed or deleted from a database table. Similarly, in traditional databases as well as improperly designed relational databases, data redundancy can be a problem. These can be eliminated by normalizing a database.

Normalization is the process of breaking down a table into smaller tables. So that each table deals with a single theme. There are three different kinds of modifications of anomalies and formulated the first, second and third normal forms (3NF) is considered sufficient for most practical purposes. It should be considered only after a thorough analysis and complete understanding of its implications.





## 5.2 Safety Requirements

- System's Safety: The login portal of the Admin and the members, 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 , when the payment is done by students 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

## 5.3 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.

## **5.4 Software Quality Attributes**

### **5.4.1 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 a club member) then the user can only see the information which will be displayed on the homepage of the web-site.

### **5.4.2 SECURITY**

Security is one of the crucial things of this project. Only the valid user i.e. admin and club members 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 users to upload any document from their side. They can only retrieve the information.

### **5.4.3 RELIABILITY**

The system is made should 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.

### **5.4.4 PORTABILITY**

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

### **5.4.5 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.

# SDS

## 1. Introduction

The Software Design Specification (SDS) sections provide us with the guidelines related to the structure and the contents of the SDS document.

The project “STUDENT ASSOCIATIONS AND CLUBS: A BANASTHALI PORTAL” is an automated approach to manage various events, workshops etc organized by various clubs in Banasthali Vidyapith, Tonk, Rajasthan.

The software provides us with the ease of building the database under the given constraints along with an easy interface to implement and access/modify details, schedules, results etc.

### 1.1 Purpose

1. To provide a user friendly interface for managing and viewing the activities collectively of various clubs of Banasthali Vidyapith. It is a helpful online service tool.
2. Convenience is a major advantage of this software; it will computerize the existing manual system of the clubs in Banasthali Vidyapith. The existing manual system require a lot of paper work to keep track of schedules, registration, results etc, which is very hectic as well as time consuming.
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### 1.2 Scope

1. The scope of the project is global as it is a web application and can be used by any person anytime.
2. Users can view the application and get the information regarding the events, workshops etc and can register for workshops and events at their convenience.
3. This system would be capable of handling extremely large chunks of data.
4. Students can also give their feedback after visiting the application in the form of suggestion, praise, comment or query.
5. The events and workshops can be added as well as updated anytime time by the members of their respective clubs.
6. It reduces time.

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#### **Definitions**

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3. H/W- Hardware
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- **HDD:** Hard Disk Drive
- **IIS:** International Information Server
- **IE:** Internet Explorer

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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 Edition Pearson Publication.
3. Bayross Ivan, SQL, PL/SQL, Third Edition, BPB publications.
4. Schildt Herbert, The Complete Reference java Third Edition ,Tata Mc-Graw-Hill.
5. IEEE STD 830-1998, IEEE Recommended Practice for Software Requirement Specifications.

## **1.5 OVERVIEW**

Section 2: Gives the Overview of Modules with their input and output.

Section 3: Specifies detailed description of application using Sequence diagram, Activity diagram, and Class diagram.

## **2. System Architecture Description**

### **2.1 Overview of Modules/Components**

#### **Admin**

I/P- Login and password

O/P- Logged in, admin can handle all the D/B activities. He/She can give permission to update events, workshops, results of different events, and view the feedback of the students regarding events.

#### **Students**

I/P- Student name, smart card ID, course, their field of interest, email id, contact no.

O/P- Students can register for workshops and events, participate in events, give their feedback and ask queries.

## **Club Member**

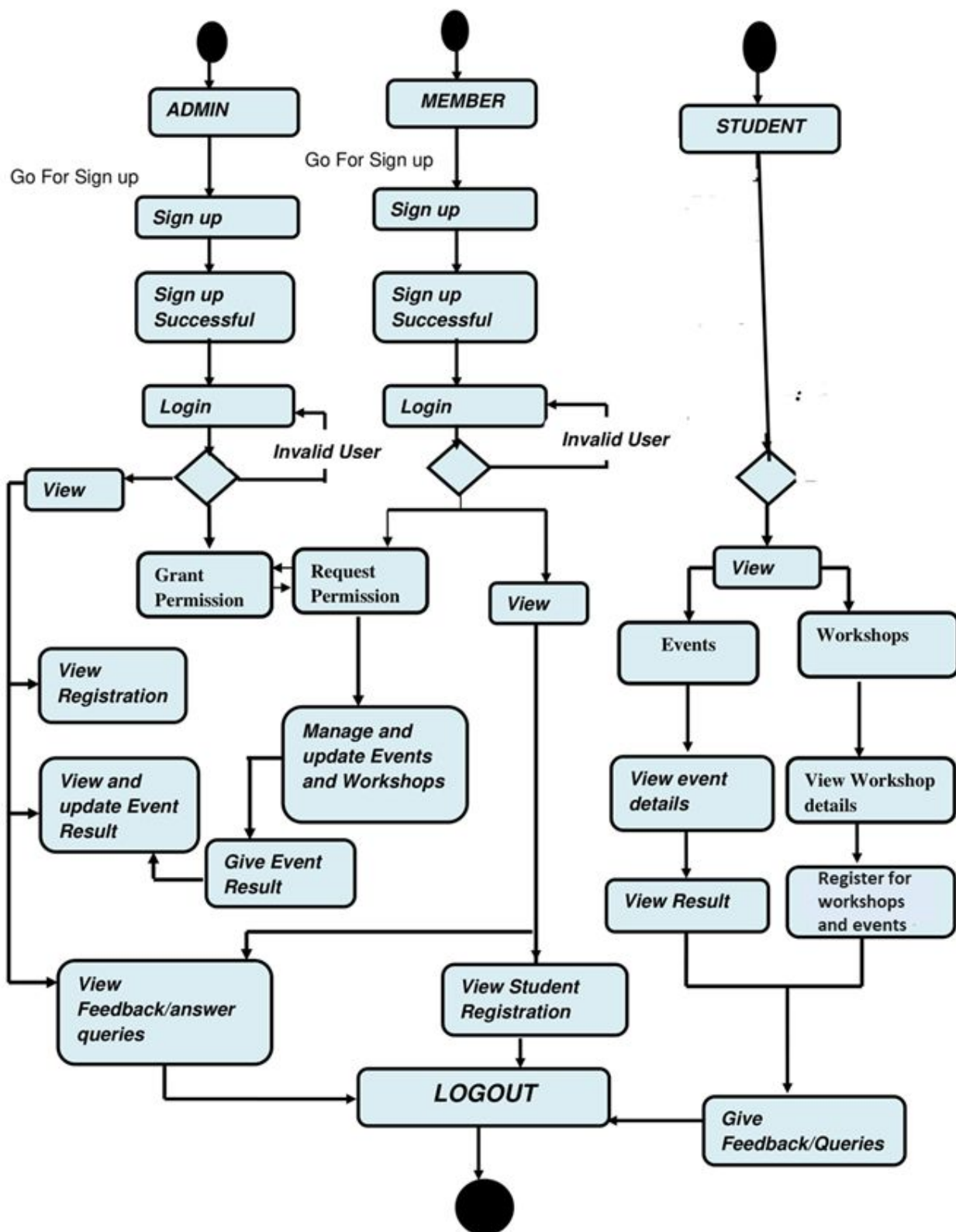
I/p- Login and password

O/p- Logged in, Club Members can handle D/B for workshop registration with prior permission of the admin, answer queries and view feedback.

## **2.2 Structure and Relationships**

### **2.2.1 Activity Diagram**

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. Detailed description of components

#### 3.1 Component template description

##### A) Admin

Type	Admin, a module located in the root directory.
Purpose	Provide functions for administrative users of the site
Function	Allows admin users to add, edit, remove users. Also allows admin users to schedule people into certain clubs and set up those clubs. Also give permission to update events, workshops, results of different events, and view the feedback of the students regarding events.
Subordinates	Setup clubs, manage club members. Each of these functions will have sub functions to perform their actions
Dependencies	This component will depend on the club members, enrolled students and add/delete/edit users functionalities.
Interfaces	<p>The user will be presented with the option of either updating clubs information or club member information. If they select club information, they will be taken to a form to either create a club or to enroll club members.</p> <p>For enrolling new club members they will select the club, then add each student to a javascript list. This list will then be submitted and update the club roster.</p> <p>For adding a new club, they will enter the club details to a form, including who all teachers are guiding it from a drop down list and submit.</p> <p>To add a user, they will have to fill out a short form of information based on which type of user they are adding and click submit. To delete, just select the type of user, then the user's name and delete. To edit is much similar to adding, they will select a user and then edit the details in the form and submit.</p>

Resources	This will require simply the database and a connection to the database.
Processing	<p>The database will handle the sql commands for updating the notices and events/workshops information and user information.</p> <p>The webpage will handle the input from the user and send the commands.</p>
Data	The important data will be all the events/workshops information, and the user information entered into the forms.

## **B) CLUB MEMBERS**

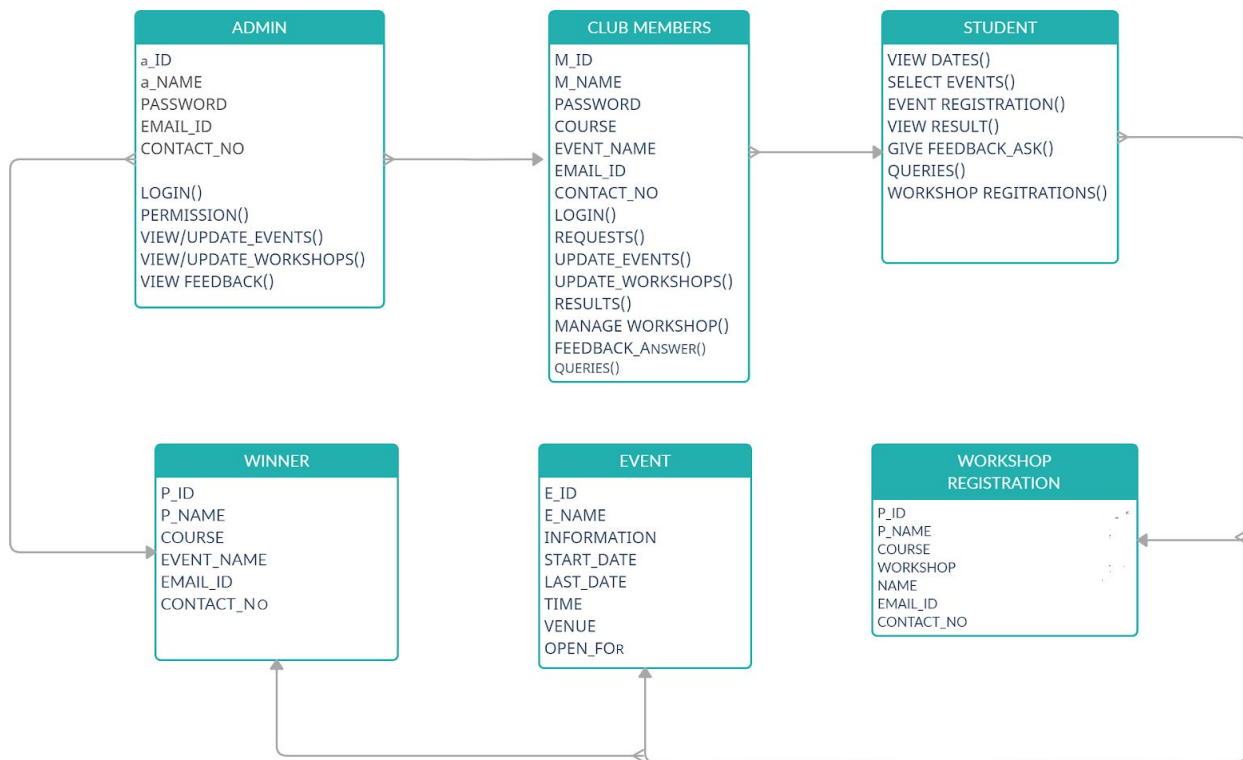
Identification	Club Members located in root directory
Type	Component (series of files)
Purpose	Provide functions for club members for using of the site
Function	Allows club members to login ,logout from the site and can request admin to give permission to update events, workshops, results of different events, and view the feedback of the students.
Subordinates	The events, workshops ,feedbacks, results of events modules are all subordinates
Dependencies	This component will depend on the subordinate modules, and will require that the club members can log in .

Interfaces	<p>The user will be presented with the option of either updating clubs information or user information. If they select club information, they will be taken to a form to either event or workshops.</p> <p>To set an event, the member will fill out a form of information about the event and attach any external files needed. This will include which event, a description and a date.</p> <p>To set a workshop, the member will fill out a form of information about the workshop and attach any external files needed. This will include which type of workshop, a description and a due date, with the amount details.</p> <p>To enter results of events, the member will select a class, results and then be able to enter results for each event in the class.</p> <p>To enter queries, the member will select a query and then be able to enter answers for queries for each query .</p> <p>Also can see the feedback for events, workshops and club related activities.</p>
Resources	<p>A complete description of all resources (hardware or software) external to the component but required to carry out its functions. Some examples are CPU execution time, memory (primary, secondary, or archival), buffers, I/O channels, plotters, printers, math libraries, hardware registers, interrupt structures, and system services.</p>
Processing	<p>The full description of the functions presented in the Function subsection. Pseudocode can be used to document algorithms, equations, and logic. The database will handle the sql commands for updating clubs information and recording feedback, queries . The webpage will handle the input from the user and send the commands..</p>
Data	<p>For the data internal to the component, describes the representation method, initial values, use, semantics, and format. This information will probably be recorded in the data dictionary.</p>

### C) Students

Type	Students, located in the root directory
Purpose	Provide functions for students users using the site
Function	Allows students to view and register for various events and workshops conducted by the clubs and associations of the University registered on the website, along with providing feedback, posting queries and registering for workshops.
Subordinates	Event and Workshop announcements posted by the registered clubs, feedback, Queries, Workshop Registration
Dependencies	This component will depend on the subordinate modules and will only require the student details when a student user wants to register for a workshop and events.
Interfaces	<p>The students can view the events, workshops, give feedback, ask questions and register for workshops and events .</p> <p>To view events and workshops, the students will select a certain club on the homepage and it will direct them to the respective club's portal. From there they can select what they want to view since it will have sub-portals like events, workshops, queries /feedback.</p> <p>To register for workshops, ask queries and give feedback, students will follow the same above procedure.</p>
Resources	This will require simply the database and a connection to the database.
Processing	The full description of the functions presented in the Function subsection.

### 3.2 Class Diagram



### 3.3 Sequence Diagram

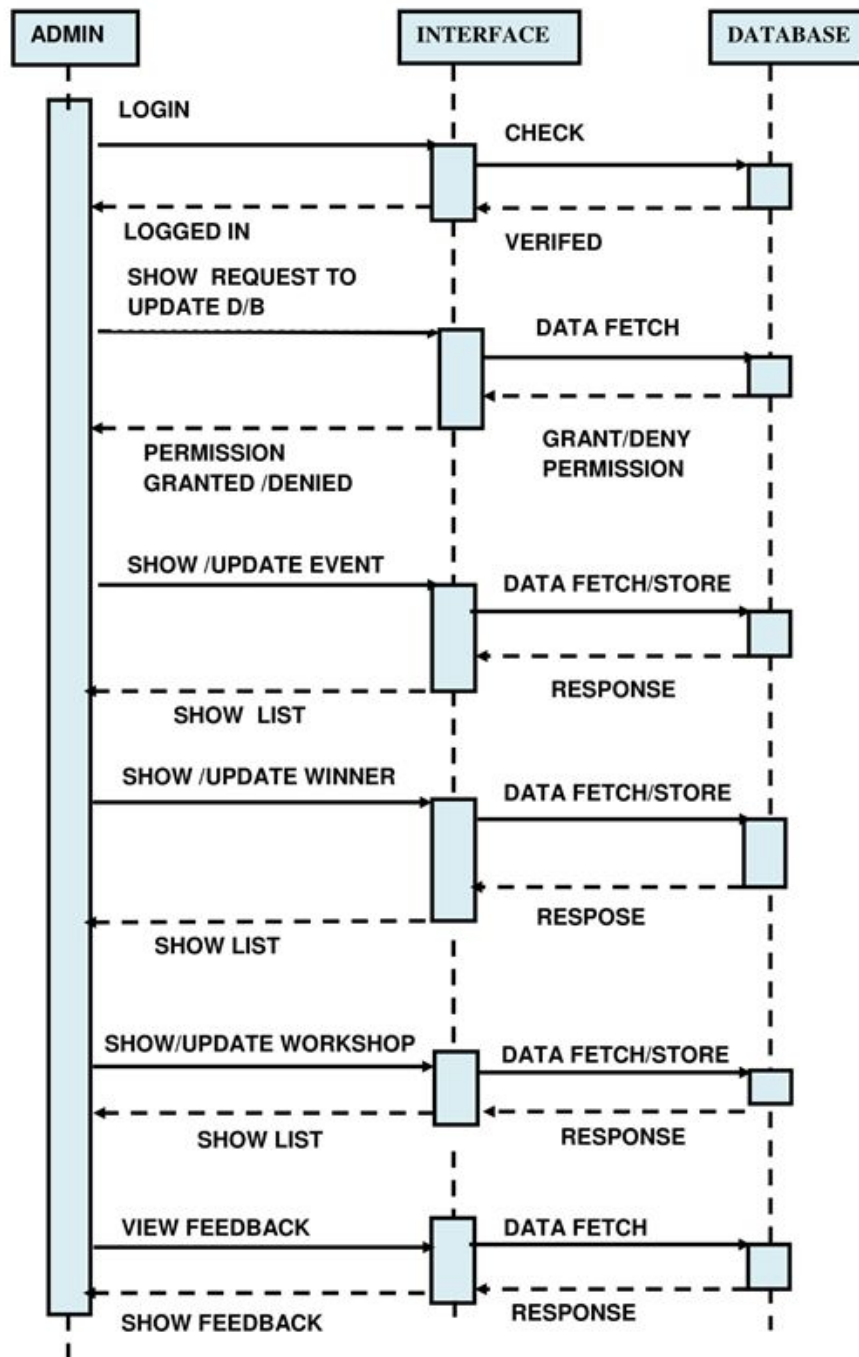
A sequence diagram is an interaction diagram that shows how processes operate with one another and in what order. It is a construct of message sequence charts. A sequence diagram shows object interaction arranged in a time system.

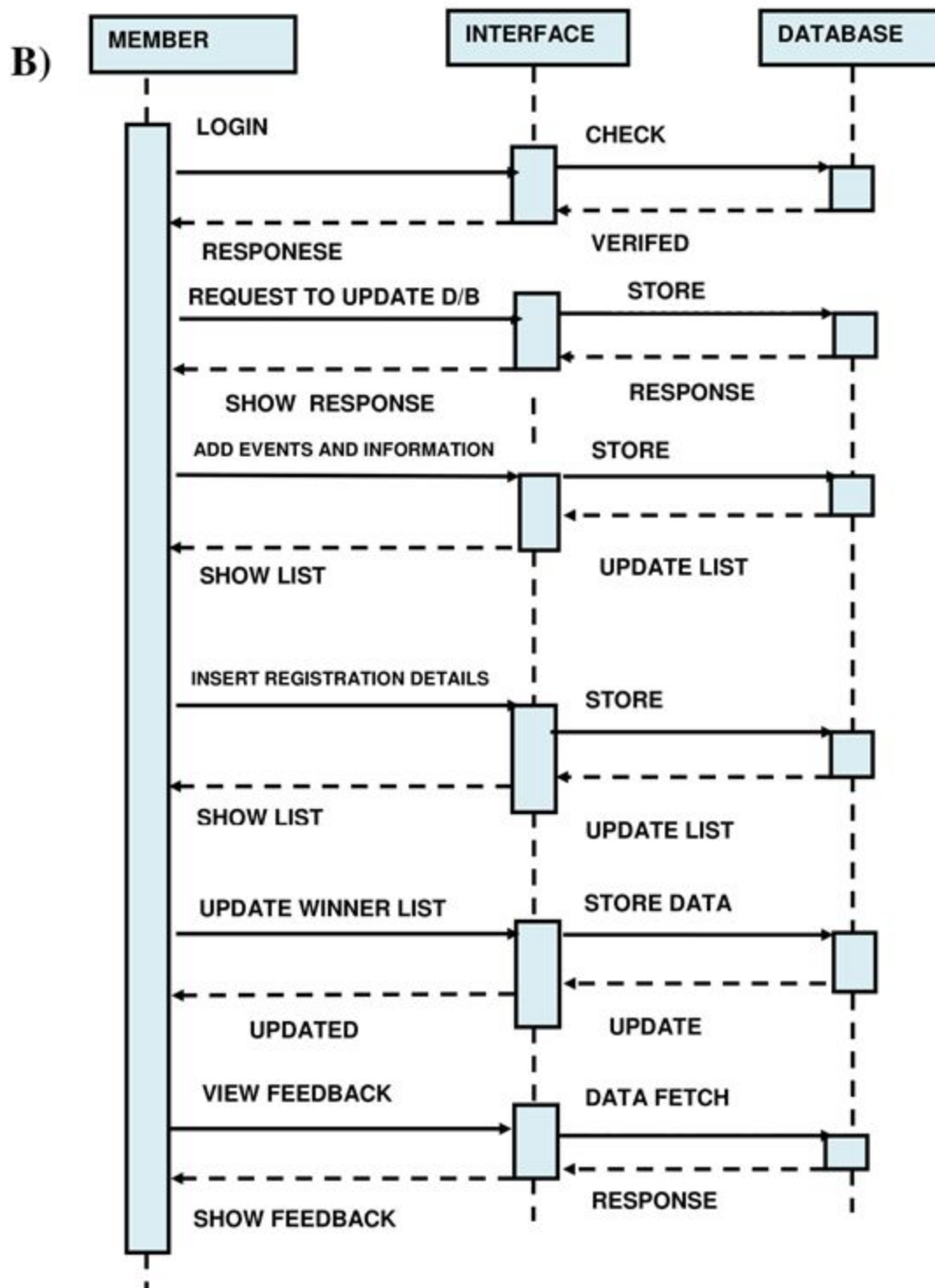
#### A) Sequence Diagram for Admin

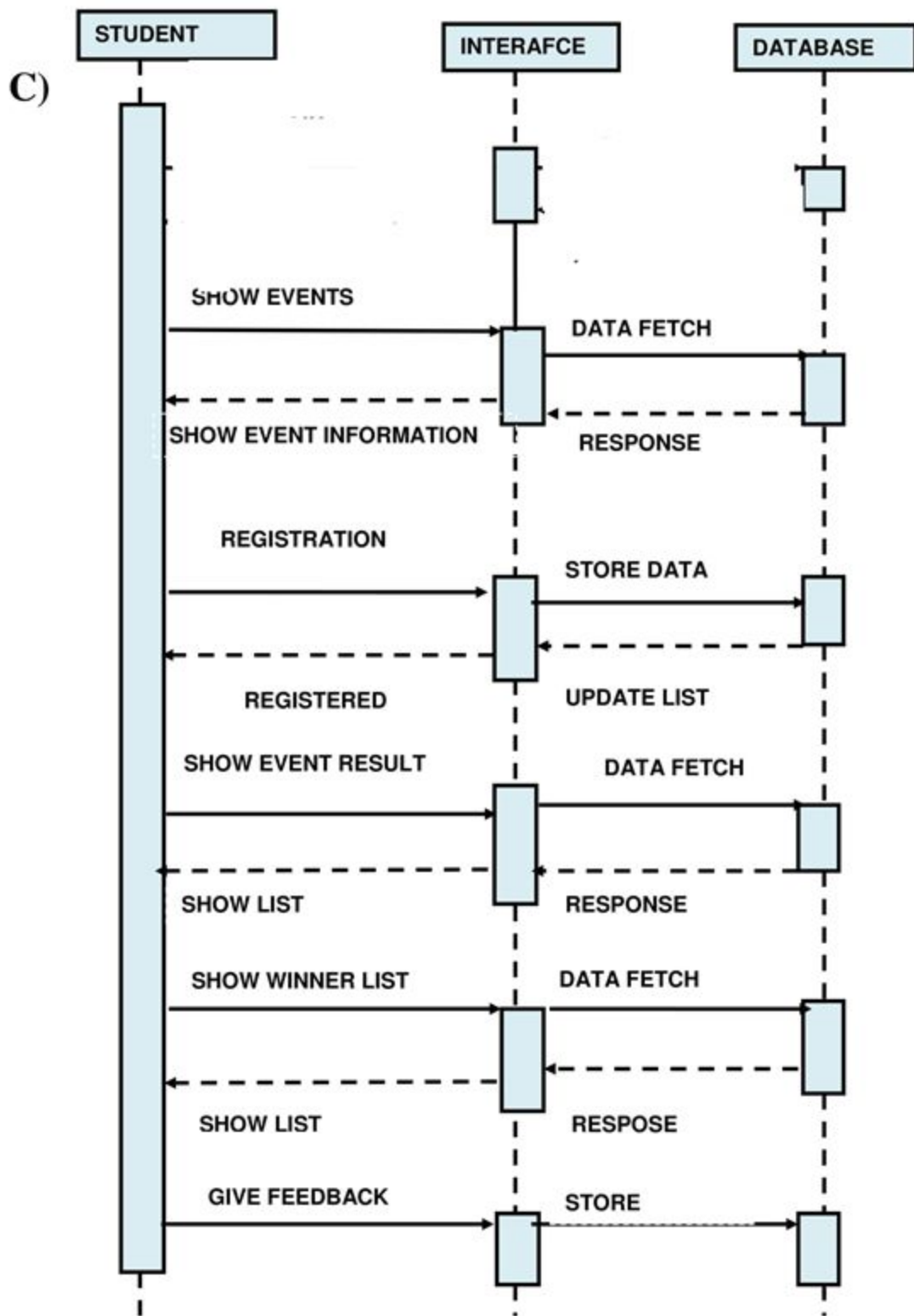
#### B) Sequence Diagram for Club Member

#### C) Sequence Diagram for Students

A)









#### **4.0 Reuse and relationships to other products**

This project is not doing any enhancement work for existing Softwares but we via this project have developed a complete new approach of doing enhancement to the existing concept of a Student association and club portal, which performs various actions. In addition to that, the project completely focusses over developing a model based on Java Servlet and performs all its functions remotely keeping in mind the extensive cost expenditures at scale. So, the enhancement in this project offers an approach to build a Portal with minimal usage of *On-Board* hardware and connects various platform technologies like Java Servlet, HTML and Bootstrap to a distributed processing unit system .

#### **5.0 Design Decisions And Trade offs**

We are trying to keep the system simple. The idea is to have a lot of functionality, but not at the expense of having a usable system. We are focusing our efforts around creating a system that does the important functions, well. This project is coded in HTML, CSS and Java. Java is used for creating java servlet pages and HTML, CSS is used for the front end of the pages.

Bootstrap is a potent front-end framework used to create modern websites and web apps. It's open-source and free to use, yet features numerous **HTML** and CSS templates for UI interface elements such as buttons and forms.