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# SOFTWARE REQUIREMENTS SPECIFICATION

for

LAB WEBSITE

Version 1.0

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# **1 Introduction**

## **1.1 Purpose**

The purpose of this project is to develop a lab website for Dr. Puneet Gupta sir. It is intended to provide detailed information about various topics like the updates of the research going on, the awards won by the projects. It will be used to display information about the lab head and lab members working on various topics.

## **1.2 Document Conventions**

This document uses the default LaTeX serif font, Computer Modern, throughout the entire document. Header sections use bold font. Any part of this document that is not a header of some kind uses size 14 font. Half inch margins are maintained throughout this document.

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

This project is a prototype for the lab management system and it is to be used mainly by Dr. Puneet Gupta Sir, their T.A.'s and students of IIT INDORE, though it would serve as a gateway of information about Dr. Puneet Gupta sir's research to the outside world. This project is being implemented under the guidance of Dr. Puneet Gupta Sir and their T.A.'s. This website will contain all the information about the all the lab projects with their videos and reading material so that it will be easier for the students of IIT INDORE to study from this website.

## **1.4 Project Scope**

"LAB WEBSITE" creates a space for Dr. Puneet Gupta Sir, their TAs and students, and the office staffs for maintaining research work. Student profile will contain all the personal information, past results, recent result and notifications. Official staff will only post the results and notices publicly with the permission of Dr. Puneet Gupta Sir. Dr. Puneet Gupta Sir's work will be to assign courses

to the TAs . He can move a TA from one course to another. He can post notices on the website.

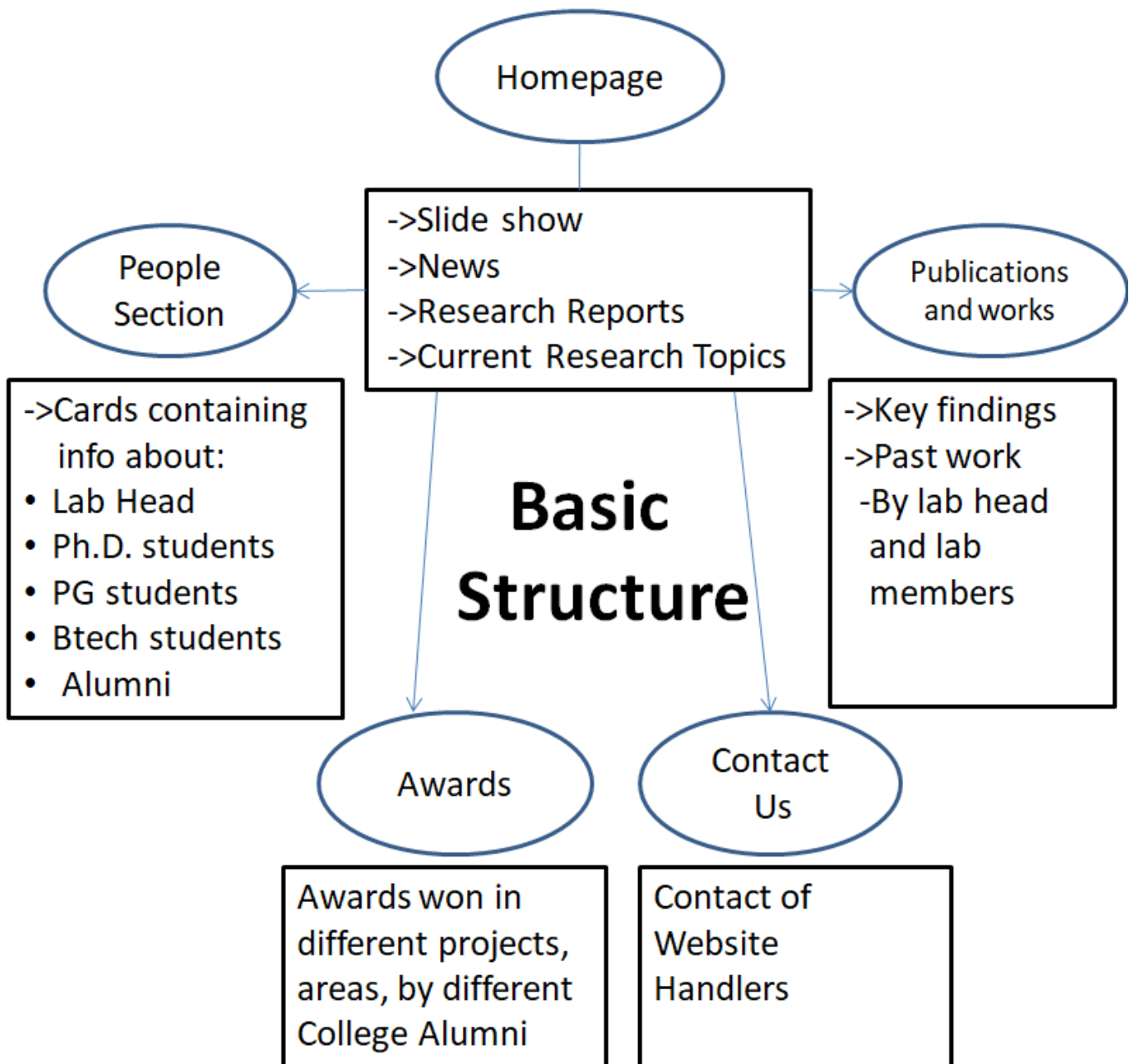


Figure 1.1:

## **2 Overall Description**

### **2.1 Product Perspective**

The Lab Website is a central hub for all the information related to Dr. Puneet Gupta's Research Lab. The website concisely lists and displays all of the information of the lab, including the members, the publications, contact details, awards received, and so on. The goal of the website is to provide all of this information in an easily accessible layout and interface.

### **2.2 User Classes and Characteristics**

Lab website has basically 4 types of users.

- Professors
  - Course Teacher
  - Teaching assistant
- Students
- Lab members
- Official Staff

## **2.3 Operating Environment**

The website will be able to be operated in any operating environment, like Mac, Windows, Linux, etc. Optimally, the website should be run on a server that has a server-oriented operating system, to maximize the operating potential of the website. Furthermore, the operating environment used must be one on which the server software to be used, is supported.

### **2.3.1 Operating system**

This system is cross platform, though we have preferred a server operating system

### **2.3.2 Server**

We will be using Node.js as our server software.

### **2.3.3 React**

To implement the project we have chosen the React framework for its simplicity and its ability in assisting creation of interactive and efficient loading websites.

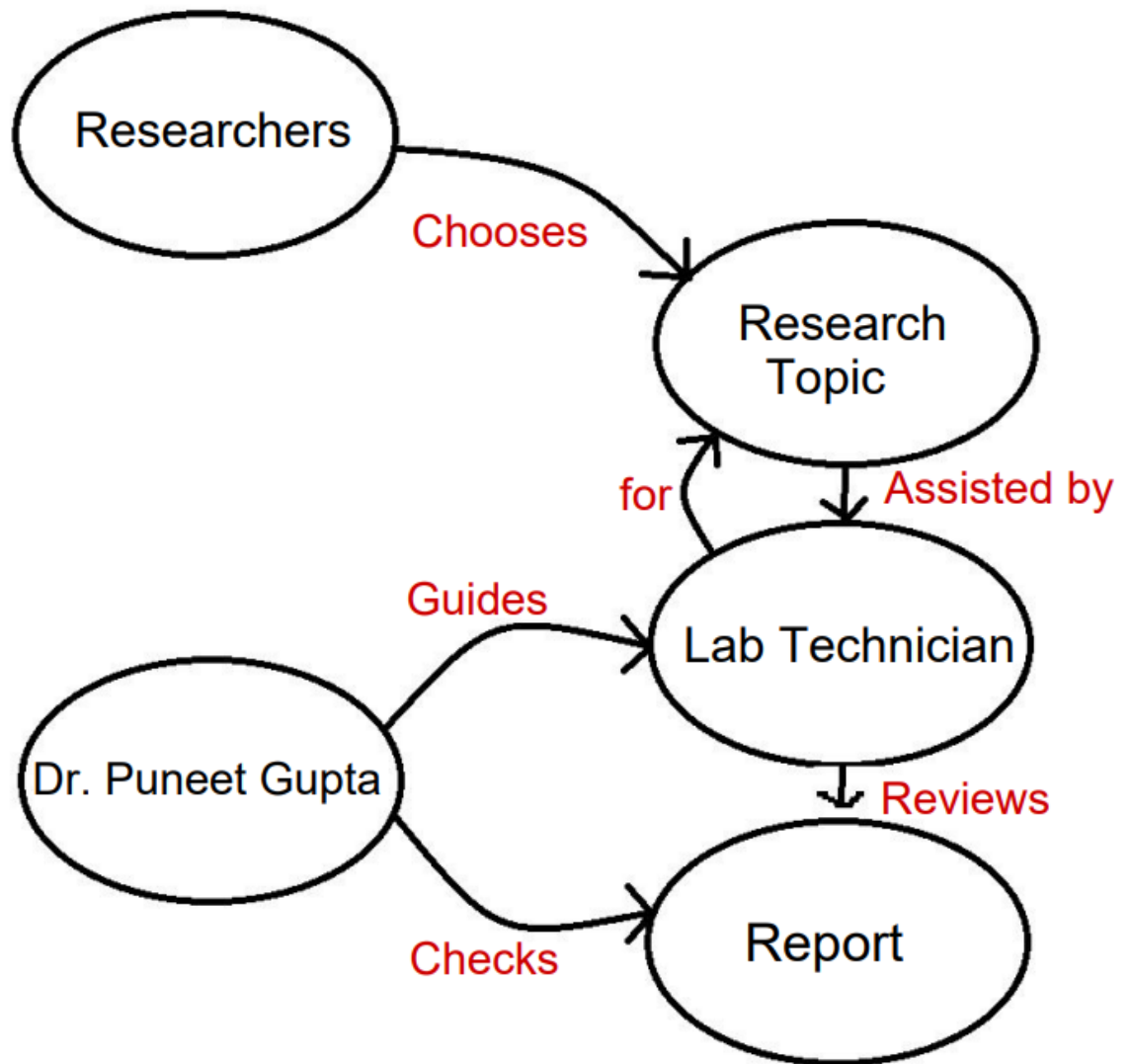


Figure 2.1: Entire work-flow

## 2.4 UML Diagrams

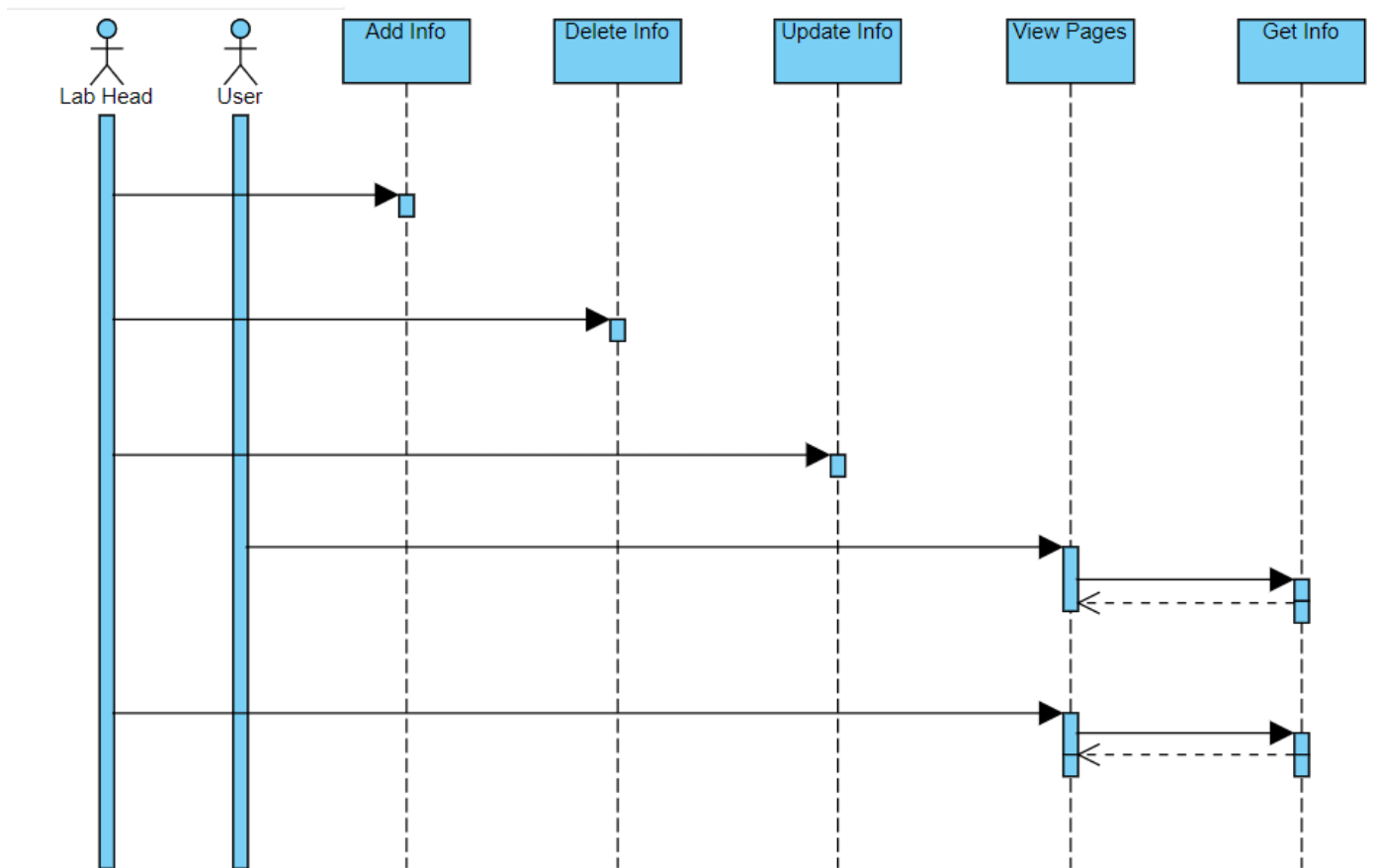


Figure 2.2: Sequence Diagram



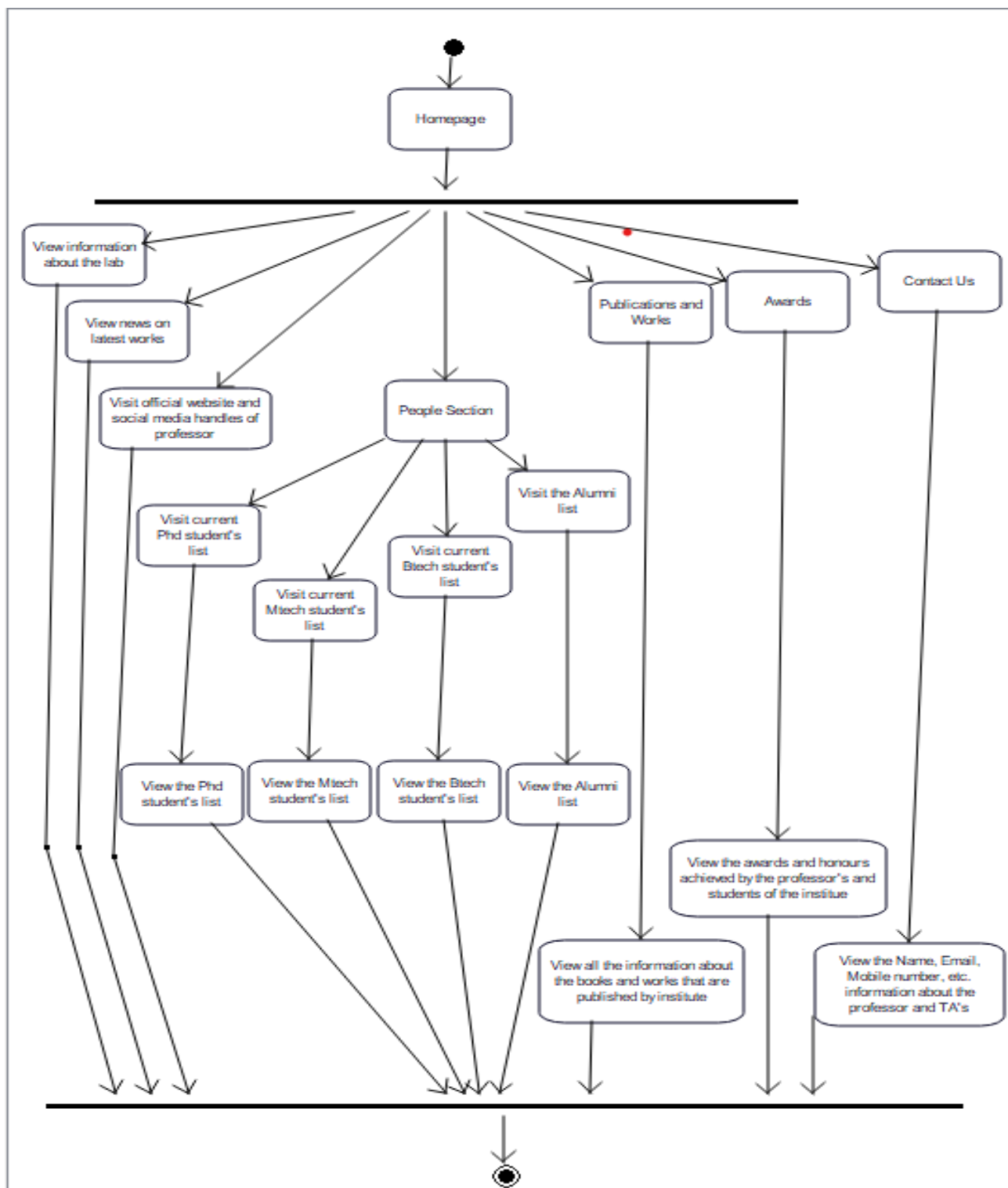


Figure 2.3: User's Perspective Activity Diagram

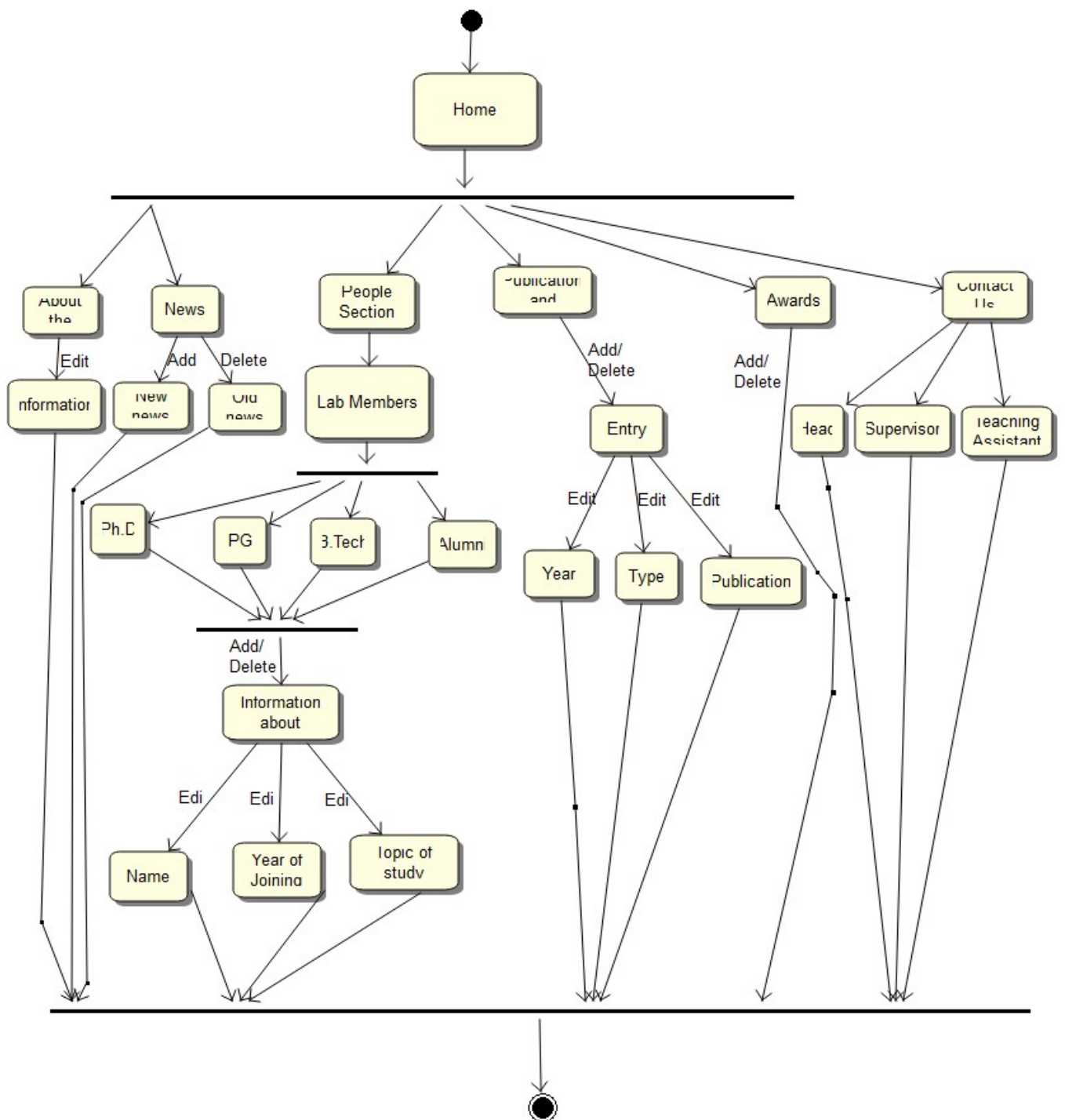


Figure 2.4: Lab Head Perspective Activity Diagram

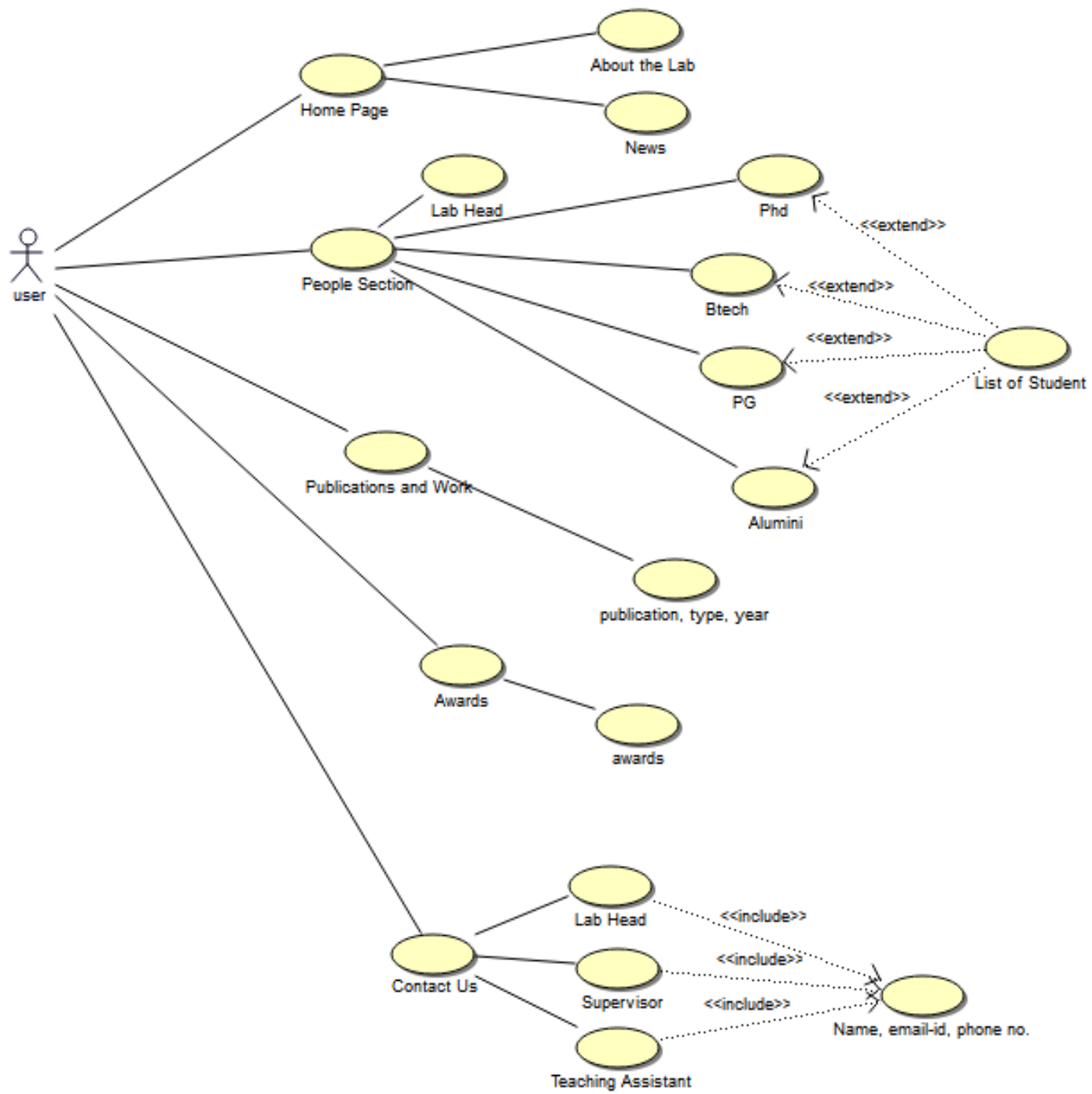


Figure 2.5: Use Case Diagram

### 3 Functional Requirements

The functional requirements that have been conveyed to us by the users are that it should be a dynamic website that has the following content:

1. There should be a landing page that will show a slideshow containing lab images, achievements, etc.
2. There should be different tabs for different sections of the website.
3. The following areas must be present.
  - Homepage containing the landing page. It must contain the slide show, about the lab, news regarding the lab, and research going on.
  - A 'people' section where information about the lab head and the lab members should be displayed. There should be segmentation of lab members on the basis of respective position like for Ph.D., for PG, for B. Tech Students, and for Alumni.
  - For each lab member, their information such as their picture and other details such as their Google scholar and LinkedIn profiles, email addresses, their current research area, awards and achievements, must be present..
  - Publications and works: There should be a separate section that contains the publications and work done by the lab head and the lab members. The results part must include all the past works done by the lab head and the works done by the lab members.
  - Awards section that will contain awards for the research team.
  - Contact Us section that will contain contacts of different members responsible for different section of research.

## 4 External Interface Requirements

### 4.1 User Interfaces

- **Front-end software:** React, Bootstrap
- **Back-end software:** Node.js

### 4.2 Hardware Interfaces

- Windows
- A browser supporting HTML and Javascript

### 4.3 Software Interfaces

Following software will be used to

Software used	Description
Operating System	This system is cross platform though we have preferred a server operating system.
Server	We will be using Node.js for our server software.
Database	We will be using MySQL as our database software.
React	To implement the project we have chosen the react framework for its simplicity and its ability in assisting creation of interactive and efficient loading websites.

### 4.4 Communication Interfaces

This project would support all modern browsers. Due to the limitations of the modern frameworks used, very old browsers may not render in the most optimal quality. An admin system may be implemented if so desired by the user, for updating information.

# **5 Non-functional Requirements**

## **5.1 Performance**

Our desired website should load fast. Images should not take too much time to load.

## **5.2 Scalability**

If we are hosting the website on some service then we should ensure that we can upgrade to higher tier plan that can provide us with greater resources, in case our website gets more views.

## **5.3 Availability**

It will be best if the website functions 24\*7\*365 so that it attracts the attention of researchers across the world.

## **5.4 Usability**

The buttons should be of proper size and the dimensions of image displayed should be appropriate.

## **5.5 Maintainability**

The website code should be such that it can be easily modified to correct faults, improve performance or other attributes.