SUMMER TRAINING PROJECT REPORT

On

ELECTIVE MANAGER

submitted in partial fulfillment of the requirements for the award of the degree

of

Bachelor of Technology

in

Computer Science and Enginerring

For summer training

Conducted at

National Institute of Technology Hamirpur

*from **21st May 2016 – 16th July 2016**.*

By

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ACKNOLEDGEMENT

*I take immense pleasure in thanking **National Institute of Technology, Hamirpur** for providing us the great chance for learning and development. Therefore, I consider ourselves very lucky being a part of this project.*

I consider ourselves privileged to express gratitude and respect towards all those who guided me through this project. It is with hearty gratitude that Iacknowledge their contributions to our project.

*I would like to express our sincere gratitude and heartfelt thanks to **"Dr. Naveen Chauhan, Assistant Professor Computer Science and Engineering Department of NIT Hamirpur"** for his unflinching support and guidance, valuable suggestions and expert advice. His words of wisdom and expertise in subject matter were of immense help throughout the duration of this project.He has been a true mentor and without his support and guidance, the completion of this project would not have been possible.*

*I also take the opportunity to thank **"Mr. Jagdish Verma, Scientific Officer, NIT Hamirpur"** and all the faculty of **Department of Computer Science and Engineering, NIT Hamirpur** for helping us by providing necessary knowledge base and resources.*

I perceive this opportunity as a big milestone in our career development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement. Hope to continue cooperation with all of you in the future.

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ABSTRACT

The Elective Manager is uesd for the allotment of elective subjects. Undergraduate as well as postgraduate students have to study open elective and PG elective subjects respectively as a part of their curriculum . These elective subjects are published by the departments and are allotted to students based on their priority of published subjects and CGPA.

The project is developed to automate the process of manual allotment of the electives making the process of elective allotment smoother, faster, and hassle free.

Identification of the drawbacks of the existing system leads to the designing of computerized system that will be compatible to the existing system with the system Which is more user friendly and more GUI oriented. We can improve the efficiency of the system, thus overcome the drawbacks of the existing system.

Chapter 1 *provides a brief introduction on Elective Manager.*

Chapter 2 *will help you gettin started for the project.*

Chapter 3 *describes the requirements for the system.*

Chapter 4 *analyses the existing system and provides an insight of how the proposed system is better than the existing system.*

Chapter 5 *describes the feasibility of the project. The crucial purpose of this phase is to find the need and to define the problem that has to be solved.*

Chapter 6 *In this chapter we will come to know the design specifications of the project.*

Chapter 7 *describes the testing of the system. System testing is the testing of complete and fully integrated software product.*

Chapter 8 *describes how the system is being implemented and maintained.*

Chapter 9 *includes summary.*

Chapter 1. Introduction

1.1 Overview

This project named Elective Manager, is an open source project. It will be used to allot the Elective subjects to undergradate as well as post-graduate students. These elective subjects are published by the departments and are allotted to students based on their priority of published subjects and CGPA.

The system can be adapted to a range of events from simple scale to large scale.

1.2 Scope

This Software Design Description (SDD) describes the detailed strucutre of the components of the Elective Manager and precise implementation details required to satisfy the requirements. This document also defines the implementation details of the desired behaviour given the requirements within it. The software will consist of two major functions. First to design therapies that are made up of tasks, and the second to perform the therapies.

1.3 Objective

Previously, the allotment of the elective subjects was done manually which was a very inconvenient method for the students as well as for the teachers. The allotment process was very chaotic and time consuming.

The Prime objective of this project is to automate the process of allotment thus alloting the elective subjects without chaos and in a more convenient manner to the people involved.

Chapter 2. Getting Started

2.1 Introduction

The Elective Manager is an open source project whose sole puprpose is to allot the open electives to undergraduate and poost raduate students as well. The electives will be published by the departments and students can fill maximum choices and give priority to subjects. The electives are then allotted based on their CGPA and prioority.

2.2 Purpose

The main reason to design such a system is to make the allotment process less time consuming and convenient. System will allot electives to students and students do not have to physically present there. Students can fill their choices for elective subjects from anywhere. The online website will use the internet as the sole method for user registration, to publish electives and for allotment of subjects.

2.3 Project Scope

The scope of this project is to design and develop such a system that is necessary to allot the elective subjects to the students of various departments.

Studens can fill the maximum available choices for elective and set the priority of the subjects based on their preferences. Then the system will alot the electives based on student’s priority and CGPA.

Chapter 3. Requirements

3.1 Specific Requirements

3.1.1 User Interface

Each part of the user interface intends to be as user friendly as possible. The fonts and buttons used are intended to be very fast and easy to load on web pages. The pages are kept light in space so that it won't take a long time for to page to load.

3.1.2 Functional Requirements

- Less time consuming
- Hassle free allotment
- Easy to implement and handle
- Backup data can easily be generated
- Data redundancy can be avoided to a great extent
- Very less manual work
- System should allow the users to update or delete their choices.

3.1.3 Non Functional Requirements

1. **Security:** The system back-end servers shall only be accessible to authenticated administrators.

2. **Availability:** The system should be available all the times and only restricted by the down time of the server on which the system runs.

3. **Maintainability:** A commercial database is used for maintaining the database and the application server takes care of the site.In case of a failure, a re-initialization of the program will be done

Chapter 4. System Analysis

4.1 Existing System

In th existing system, the allotment of the elective subjects is done manually which is very inconvenient for the students as well as for the teachers. The allotment process is very chaotic and time consuming and students have to physically present for the allotment process which is not possible for each and every student.

In existing system, the process of the allotment is time consuming and chaotic thus a new system is proposed.

4.2 Proposed System

The proposed system is having many advantages over the existing system. It requires less overhead and is very efficient. The proposed system deals with the allotment process efficiently because everything is done online and students can fill as many choices as possible from anywhere thus making the new proposed system more convenient and user friendly.

Some of the advantages of new system over existing system:

- Less time consuming
- More user friendly
- More convenient
- More transparent as comapred to existing system
- Hassle free and chaos free
- Easy to maintain records

Chapter 5. Feasibility Study

5.1 Technical feasibility

Technical feasibility assesses the current resources (such as hardware and software) and technology, which are required to accomplish user requirements in the software within the allocated time and budgetThe technical feasibility in the proposed system deals with the technology used in the system. It deals with the hardware and software used in the system whether they are of latest technology or not. It happens that after a system is prepared a new technology arises and the user wants the system based on that technology. This system use Linux platform, HTML, CSS and JavaScript as front end technology and SQL server and php as backend technology. Thus online elective allotment is technically feasible.

5.2 Economical feasibility

This system doesn't required any extra hardware and it is run on college server , it is necessary to consider the benefits that can be achieved by developing the software. so Ican say that it is also economic feasible.

5.3 Operatinal feasibility

Operational feasibility assesses the extent to which the required software performs a series of steps to solve business problems and user requirements. The project has been developed in such a way that it becomes very easy even for a person with little computer knowledge to operate it. This software is very user friendly and does not require any technical person to operate .Thus the project is even operationally feasible.

Chapter 6 System Design

6.1 System Design

The system design is mainly divided into three main sections:

1. **Admin Section:** Admin Will open registration for Departmental admins (will use an authorization key for registration, it'll be a Hash). This key will be generated automatically, admin will have a separate interface to generate the key (dynamic creation of it). Admin is given the power to delete any user(student/department).

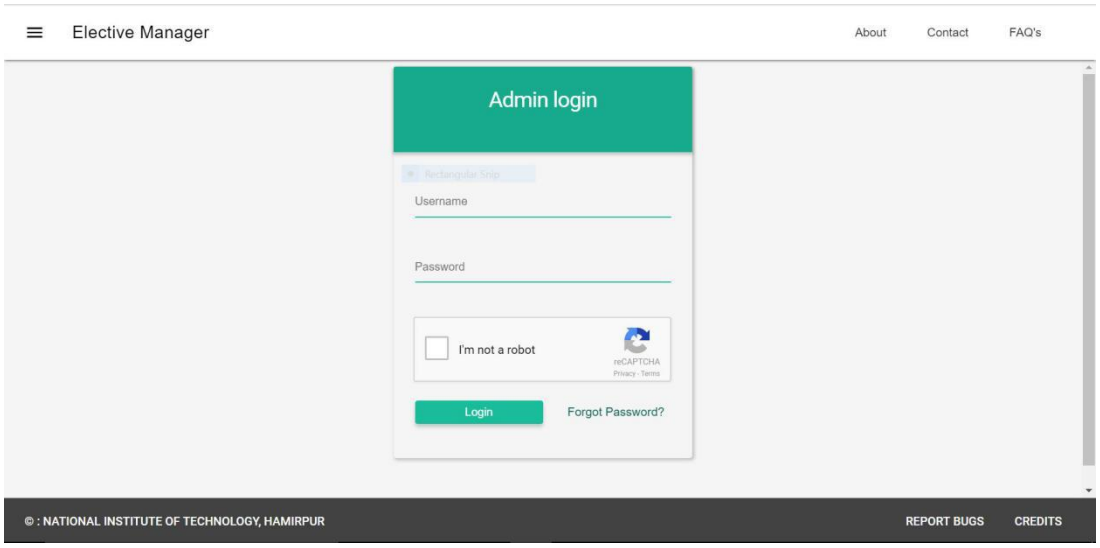

Fig 1: Admin login interface

2. **Department Section:** Department Admin will post electives. When posting electives, admin will post the following details - No. of seats, Elective code (as multiple electives), Name of professor taking the course and any additional information. The option to update elective details after posting is also given to the department admin. The department admin will get the final list of the students selected for each elective.

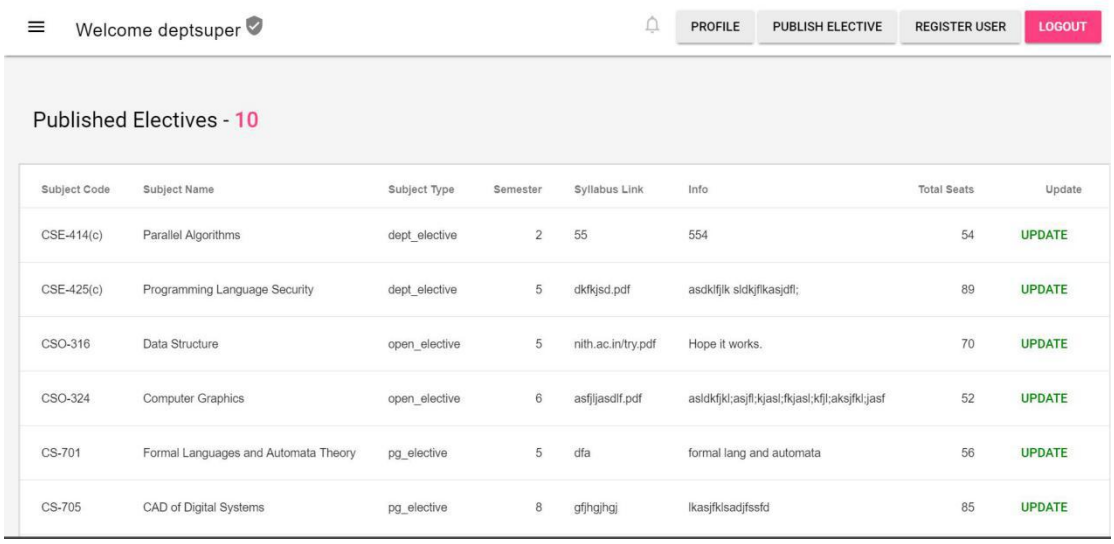

Fig 2: Department admin home page

3. Student Section: After login, the students are provided with the option to priortize published electives. Each student can see his/her status in each elective. students can also change or recover their passwords if forgotten

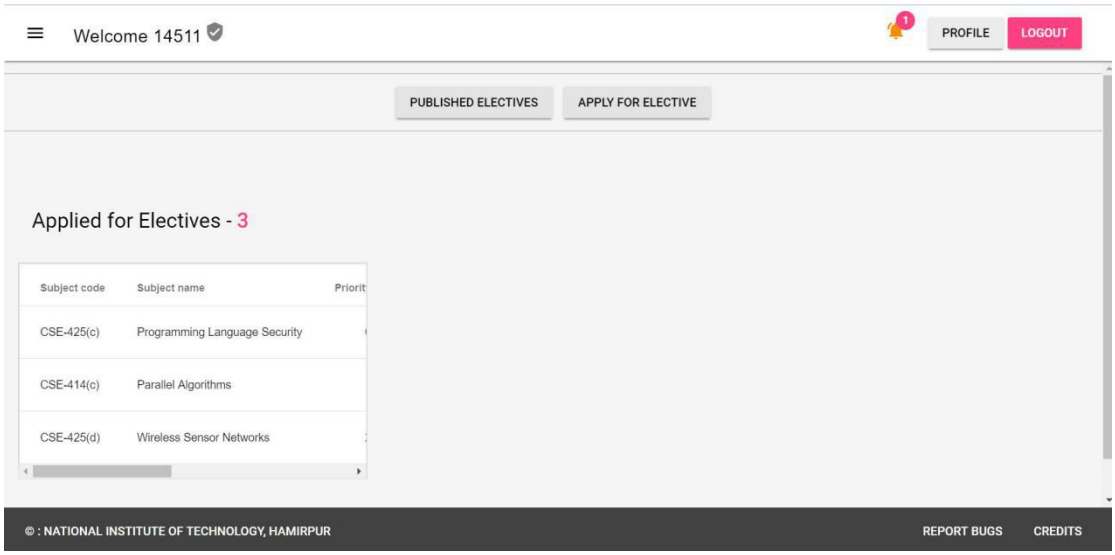

Fig 3. Student's home page

Chapter 7. System Testing

7.1 Introduction

System testing is the stage of implementation, which is aimed at ensuring that the system works accurately and efficiently before live operation commences. Testing is the process of executing the program with the intent of finding errors and missing operations and also a complete verification to determine whether the objectives are met and the user requirements are satisfied. The ultimate aim is quality assurance.

Tests are carried out and the results are compared with the expected document. In the case of erroneous results, debugging is done. Using detailed testing strategies a test plan is carried out on each module. The various tests performed are unit testing, integration testing and user acceptance testing.

7.2 Unit Testing

The software units in a system are modules and routines that are assembled and integrated to perform a specific function. Unit testing focuses first on modules, independently of one another, to locate errors. This enables, to detect errors in coding and logic that are contained within each module. This testing includes entering data and ascertaining if the value matches to the type and size supported by java. The various controls are tested to ensure that each performs its action as required.

7.3 Integration Testing

Data can be lost across any interface, one module can have an adverse effect on another, sub functions when combined, may not produce the desired major functions. Integration testing is a systematic testing to discover errors associated within the interface. The objective is to take unit tested modules and build a program structure.

Here the Server module and Client module options are integrated and tested.This testing provides the assurance that the application is well integrated functional unit with smooth transition of data.

7.4 User Acceptance Testing

User acceptance of a system is the key factor for the success of any system. The system under consideration is tested for user acceptance by constantly keeping in touch with the system users at time of developing and making changes whenever required.

Chapter 8. Implementation

8.1 Introduction

Implementation is the stage in the project where the theoretical design is turned into a working system and is giving confidence on the new system for the users that it will work efficiently and effectively. It involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the change over, an evaluation of change over methods. Apart from planning major task of preparing the implementation are education and training of users. The implementation process begins with preparing a plan for the implementation of the system. According to this plan, the activities are to be carried out, discussions made regarding the equipment and resources and the additional equipment has to be acquired to implement the new system. In network backup system no additional resources are needed.

Implementation is the final and the most important phase. The most critical stage in achieving a successful new system is giving the users confidence that the new system will work and be effective. The system can be implemented only after thorough testing is done and if it is found to be working according to the specification. This method also offers the greatest security since the old system can take over if the errors are found or inability to handle certain type of transactions while using the new system.

8.2 User training

After the system is implemented successfully, training of the user is one of the most important sub tasks of the developer. For this purpose user manuals are prepared and handled over to the user to operate the developed system. Thus the users are trained to operate the developed system.

Both the hardware and software securities are made to run the developed systems successfully in future.

In order to put new application system into use, the following activities were taken care of:

- Preparation of user and system documentation
- Conducting user training with demo and hands on
- Test run for some period to ensure smooth switching over the system.

The users are trained to use the newly developed functions. User manuals describing the procedures for using the functions listed on menu are circulated to all the users. It is confirmed that the system is implemented up to users need and expectations.

8.3 Security and Maintenance

Maintenance involves the software industry captive, typing up system resources .It means restoring something to its original condition. Maintenance follows conversion to the extend that changes are necessary to maintain satisfactory operations relative to changes in the user's environment. Maintenance often includes minor enhancements or corrections to problems that surface in the system's operation. Maintenance is also done based on fixing the problems reported, changing the interface with other software or hardware enhancing the software.

Any system developed should be secured and protected against possible hazards. Security measures are provided to prevent unauthorized access of the database at various levels. An uninterrupted power supply should be so that the power failure or voltage fluctuations will not erase the data in the files. Password protection and simple procedures to prevent the unauthorized access are provided to the users .The system allows the user to enter the system only through proper user name and password.

Chapter 9 Summary

The expanded functionality of today's software requires an appropriate approach towards software development. The project is open source project. It will be used to allot the Elective subjects to undergradate as well as post-graduate students. These elective subjects are published by the departments and are allotted to students based on their priority of published subjects and CGPA.

The project, is developed using php and MySQL and is based on the requirement specification of the user and the analysis of the existing system, with flexibility for future enhancement.

Chapter 10. Screenshots

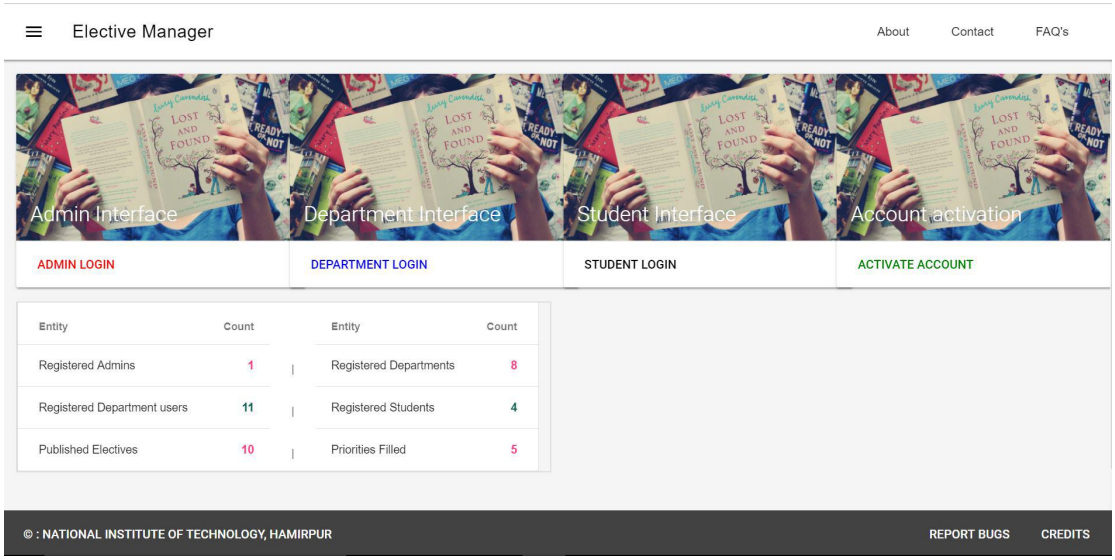

Fig 4. Home page

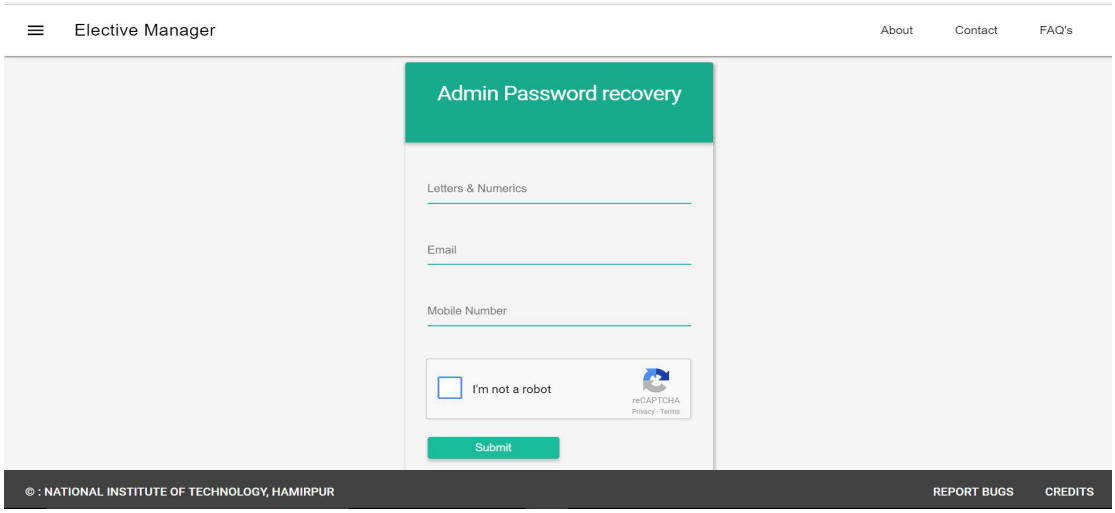

Fig 5. Admin password Recovery

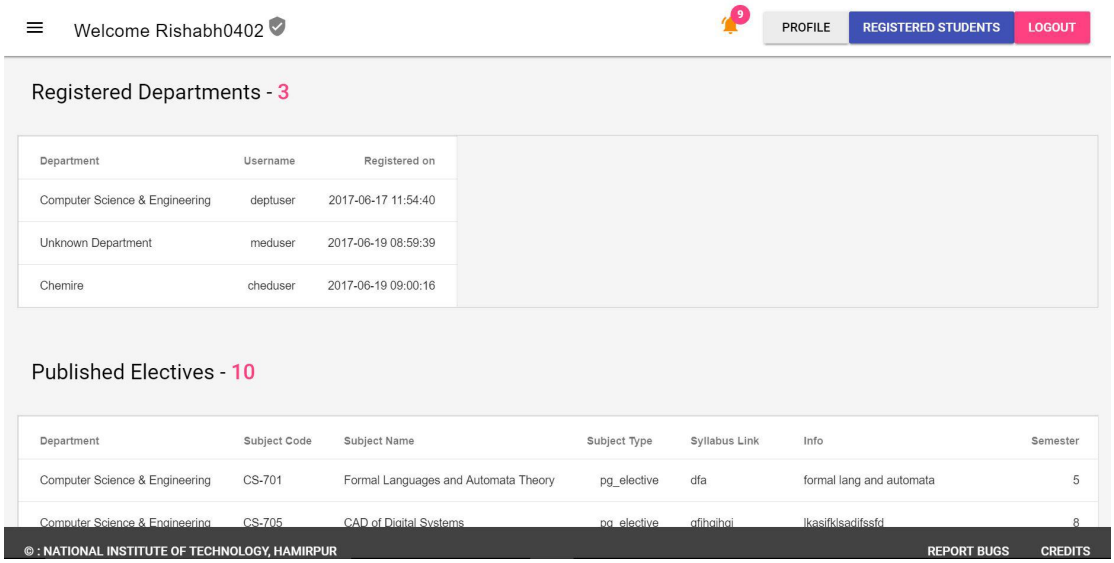

Fig 6. Admin profile page

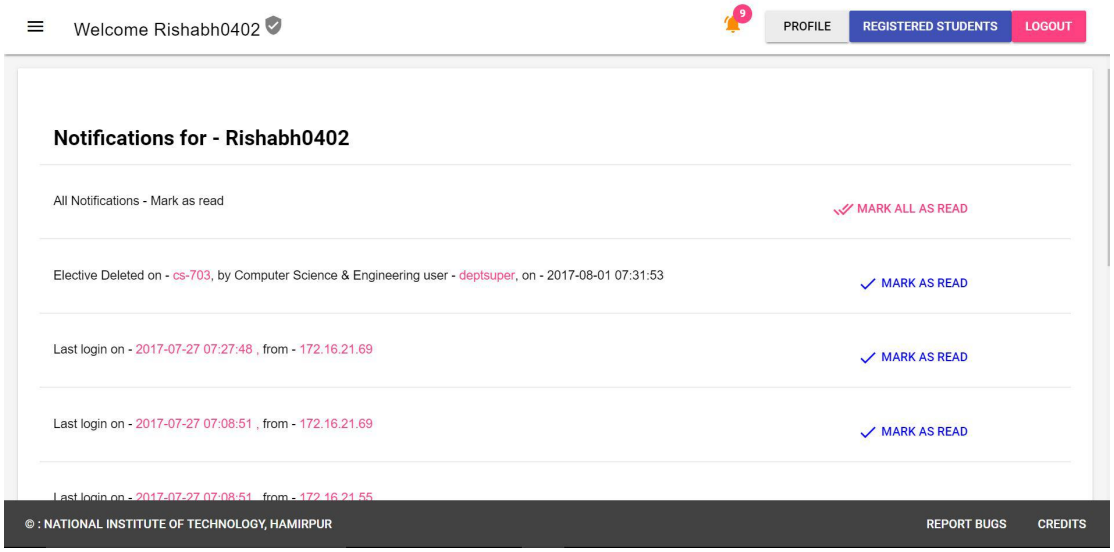

Fig 7. Admin notification panel

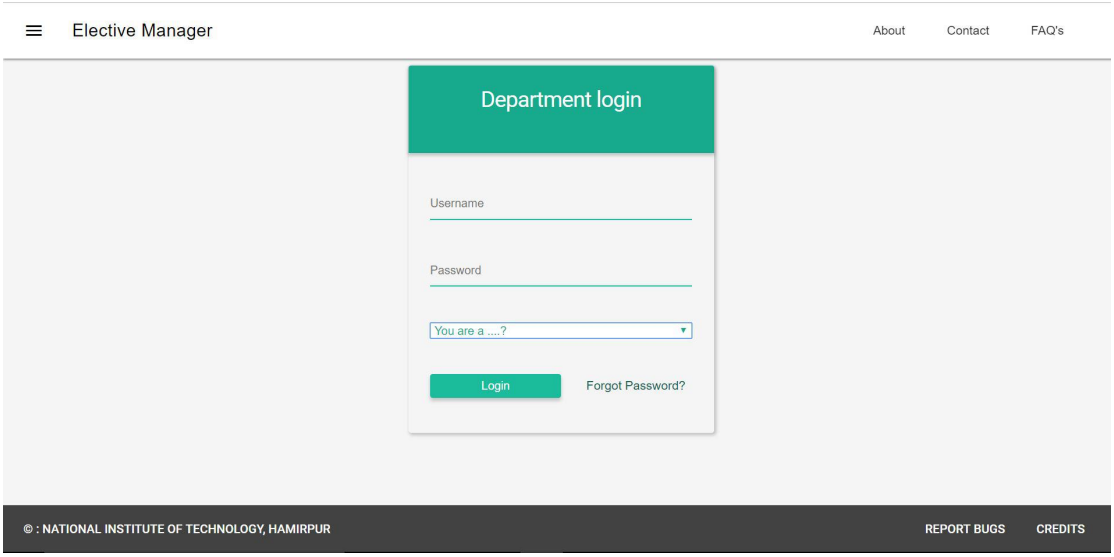

Fig 8. Department login page

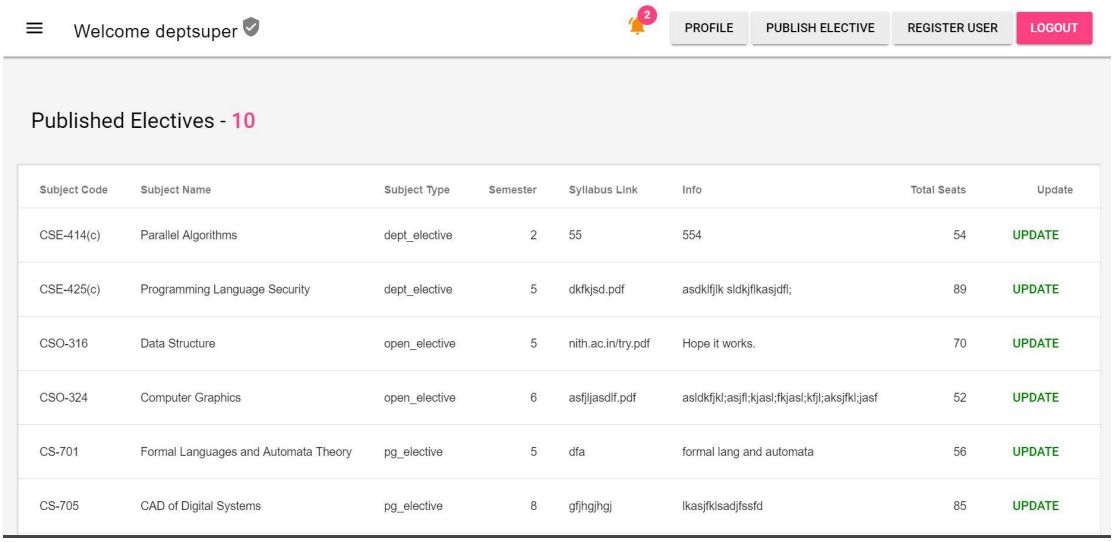

Fig 9. Department superuser profile

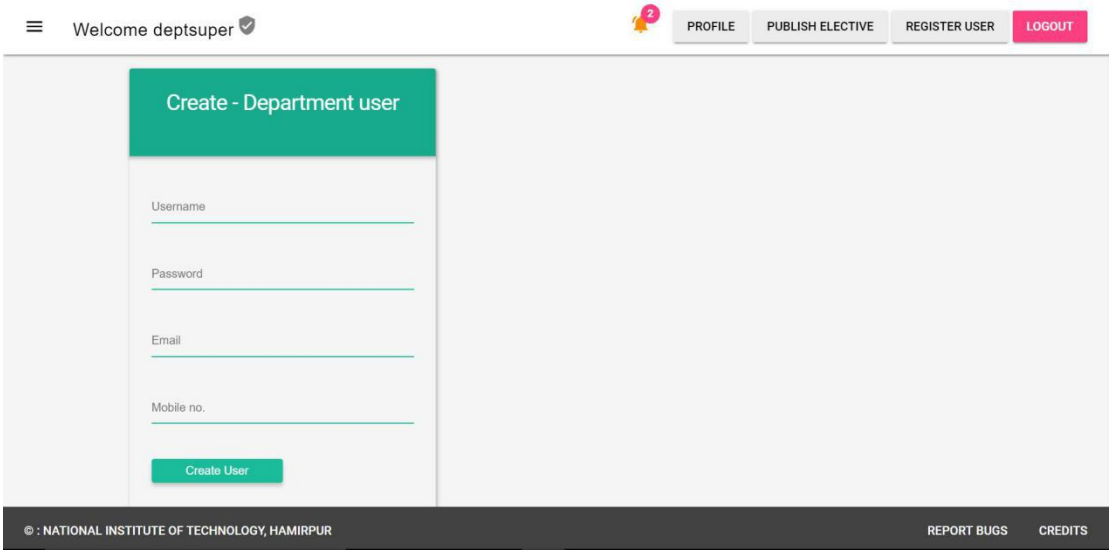

Fig 10. Creating department user

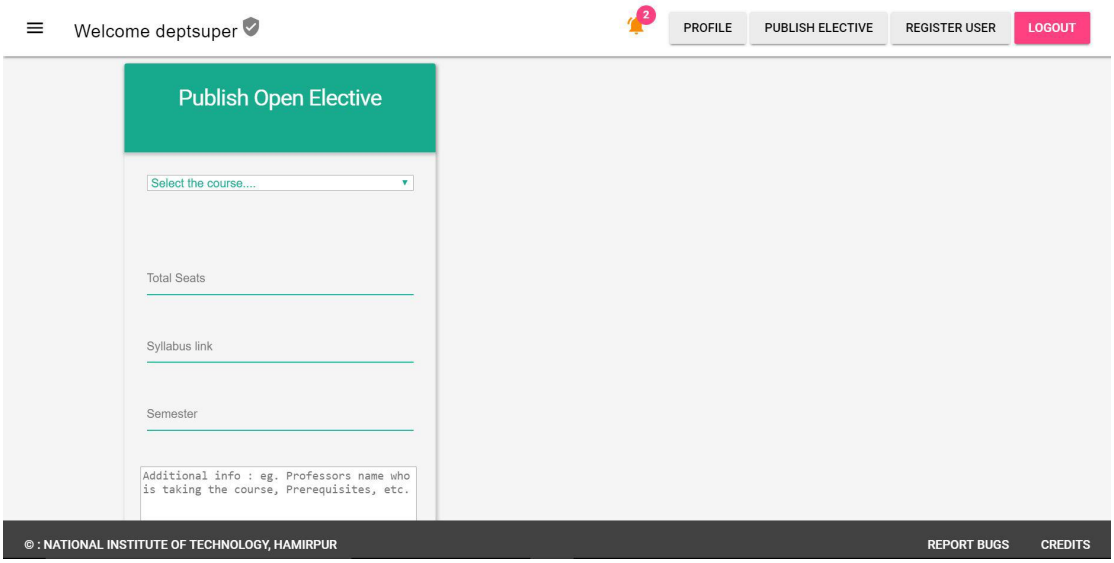

Fig 11. Publish open elective

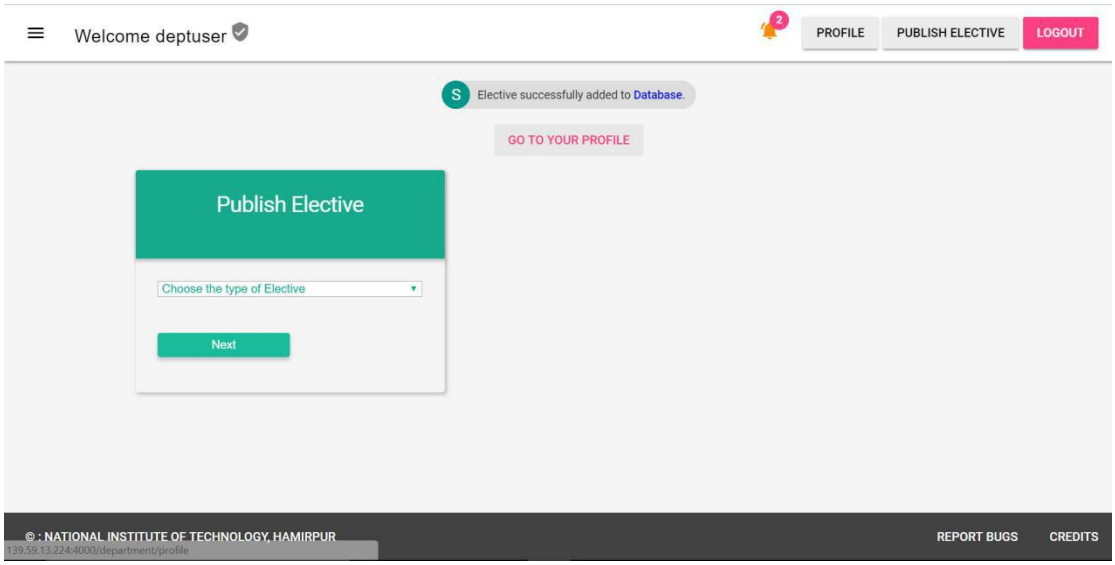

Fig 12. Open elective published

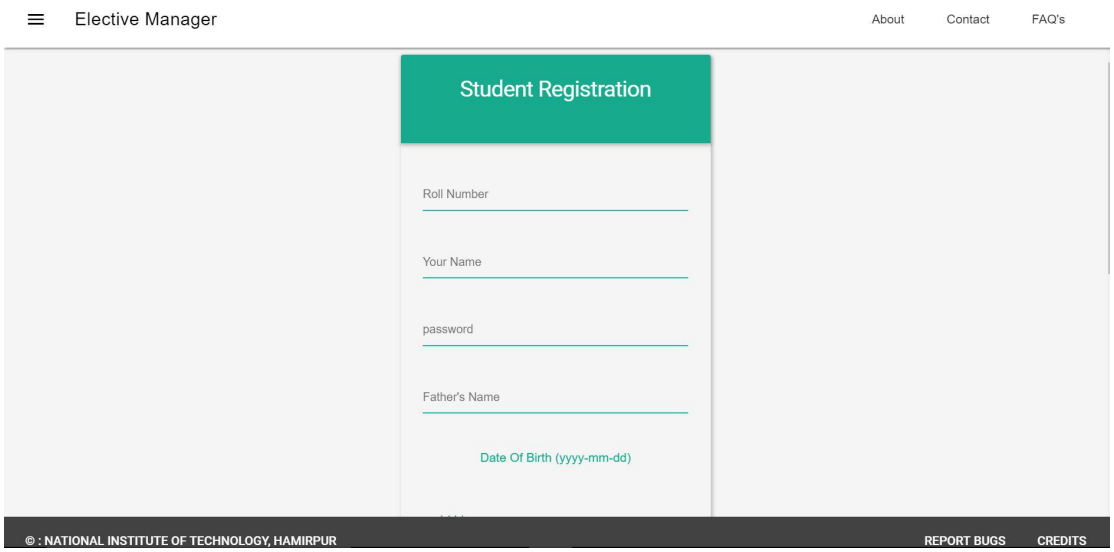

Fig 13. Student registration page

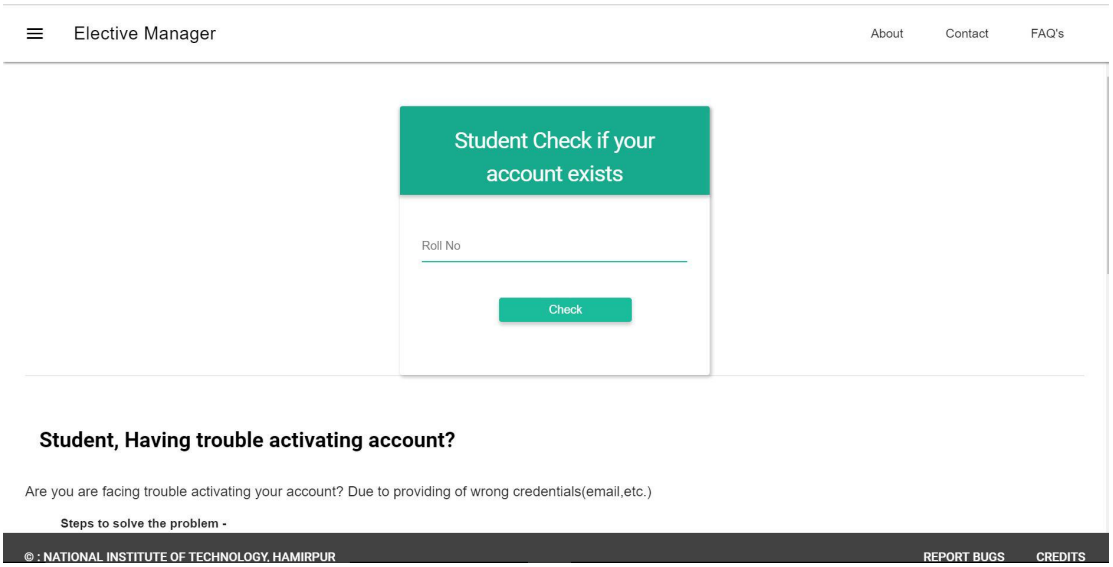

Fig 14 Student's account activation

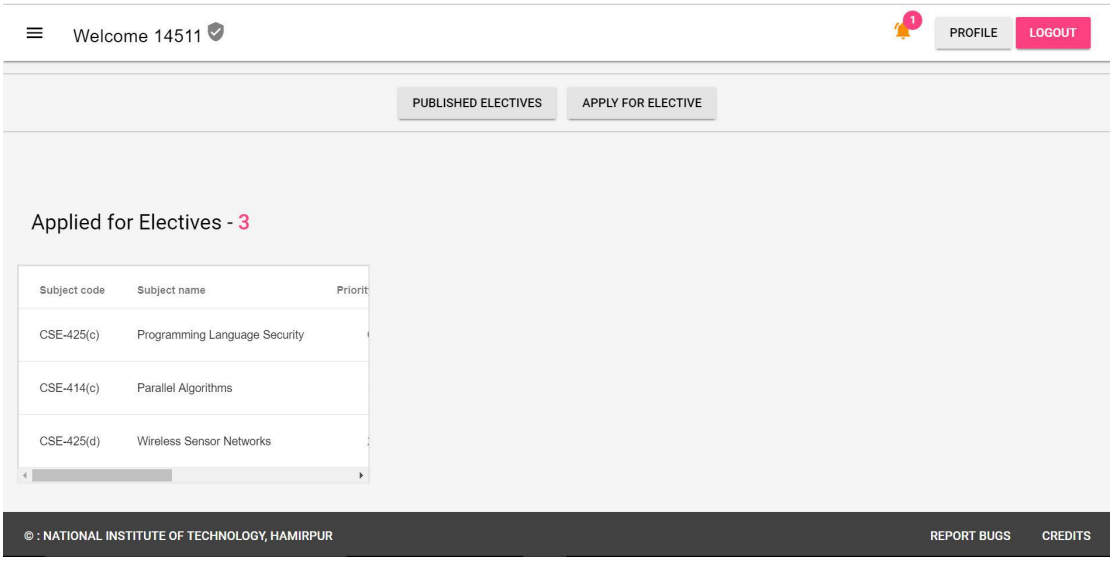

Fig 15. student's profile page

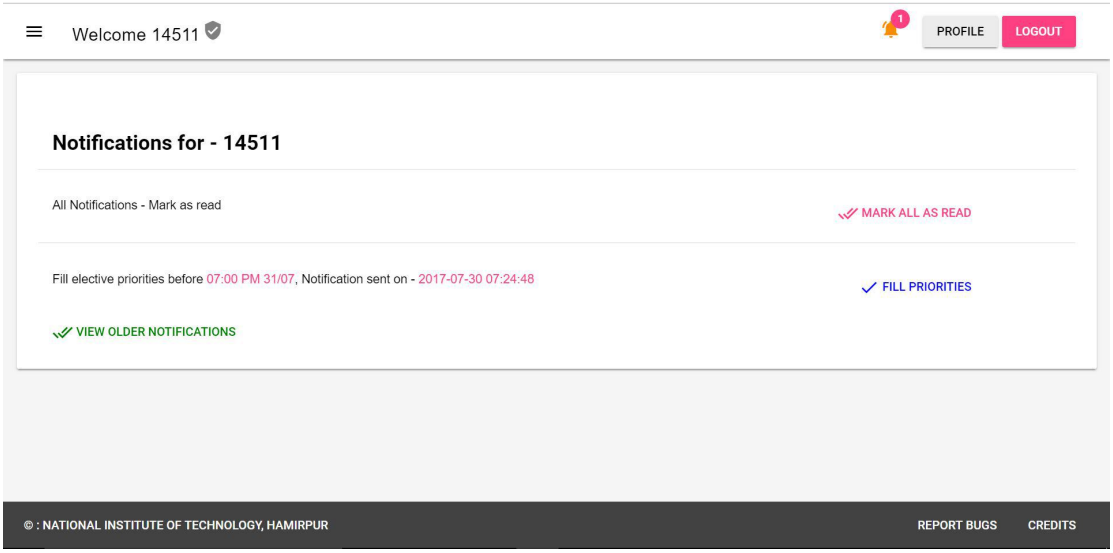

Fig 16. student's Notification panel

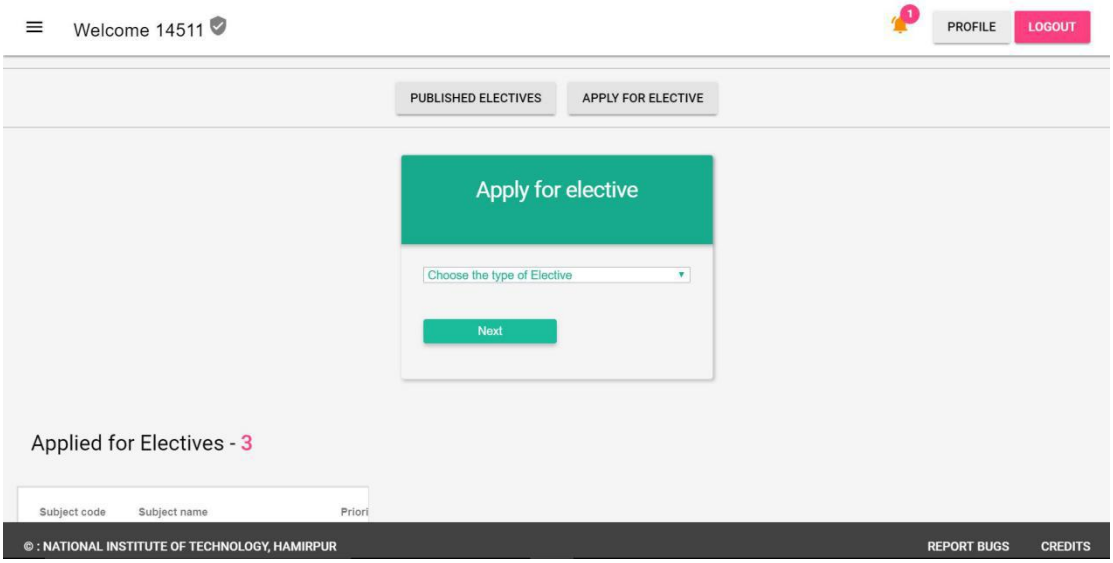

Fig 17. Applyuing for electives