STUDENT PERFORMANCE MONITORING SYSTEM

DATABASE MANAGEMENT

GROUP-4

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CONTENTS

INTRODUCTION

REQUIREMENT ANALYSIS

LOGICAL SYSTEM DESIGN

PHYSICAL SYSTEM DESIGN

CONCLUSION

CHAPTER 1

INTRODUCTION

BACKGROUND OF THE PROJECT
OBJECTIVE OF THE PROJECT
SCOPE OF THE PROJECT

Background of the organization:

Independent University, Bangladesh (IUB) is one of the leading and oldest private university in Bangladesh where academic excellence is a tradition, teaching a passion and lifelong learning a habit. It was established in 1993. It has an explicit focus on Research and Global partnerships. The IUB campus sprawling over 3 acres, has an amphitheater, the state-of-the-art laboratories, well-equipped library with online access to journals and books, above 70 classrooms, lecture galleries, auditorium, gymnasium, food court, playground, medical Center, counseling Center and an alumni office.

IUB has world-class undergraduate and graduate program accredited by professional national 7 international accreditation bodies, such as University Grants Commission of Bangladesh (UGC), Accreditation Council for Business Schools and Programs (ACBSP), USA, and Institution of Engineers, Bangladesh (IEB). IUB prepares graduates for a successful career and this is central to the design of courses and the support we provide. The programs and the courses are designed in such a way that prepare the students for a successful career. The faculty members of IUB are actively engaged in research and publish regularly in peer-reviewed journals. Along with conventional classroom based teaching, students are engaged in research relatively early in their studies. IUB has academic research collaborations with various universities including Harvard University, Stanford University, University of Colorado at Boulder, Brown University, McMaster University, University of Heidelberg. IUB also participate in various national level inter-university sports, robotics, debates and similar competitions.

Background of the project:

The Student Performance Monitoring System focuses on performance monitoring of student’s continuous assessment (tests) and examination scores in order to predict their final achievement status upon graduation.

The main theme of this project is to find the systemic problems and limitation we have in our current system in few areas and how can we improve it. The aim of our project is to design, build and deliver a developed software that we believe will help universities everywhere to promote a more productive and effective way of evaluating students. Also there need to be some functional changes in the system and department. We also analyze individual processes that take place under the current system of monitoring student performance and the concerns and problems with those process from start to finish.

Objective of the project:

We want to develop the existing software iras in such way that can be more user friendly and helpful .it will help the institution to improve the quality of education. where the students and the faculty can use the system and find information more easily .in a short passage of time they can find all the information related to student enrollment, student grades, students CGPA and also CO and PLO.it will also benefit all the departments of the institution. this development will boost the work rate of everyone. it will be more productive and effective. not only the iras but also in different aspect few things need to be changed where we worked on. Monitoring semester wise student performance report by an Instructor and also analyze how to Department head submit grades of the students instead of faculty.

Scope of the project:

Project scope is a prerequisite to guarantee the success of a project. We have to make sure that the new system can be more successful than the present one when we are modifying an existing system.

We build an interface for faculties to able to see grades of another courses of a Student. Department can also access the systems for uploading grades instead of Instructor. If for some reason the instructor cannot upload the grade, then the Department can do it. On the other hand, Department head will be able to view different activities according to the different courses and sections of the instructor like Instructor's Attendance,

Course wise Student performance etc.

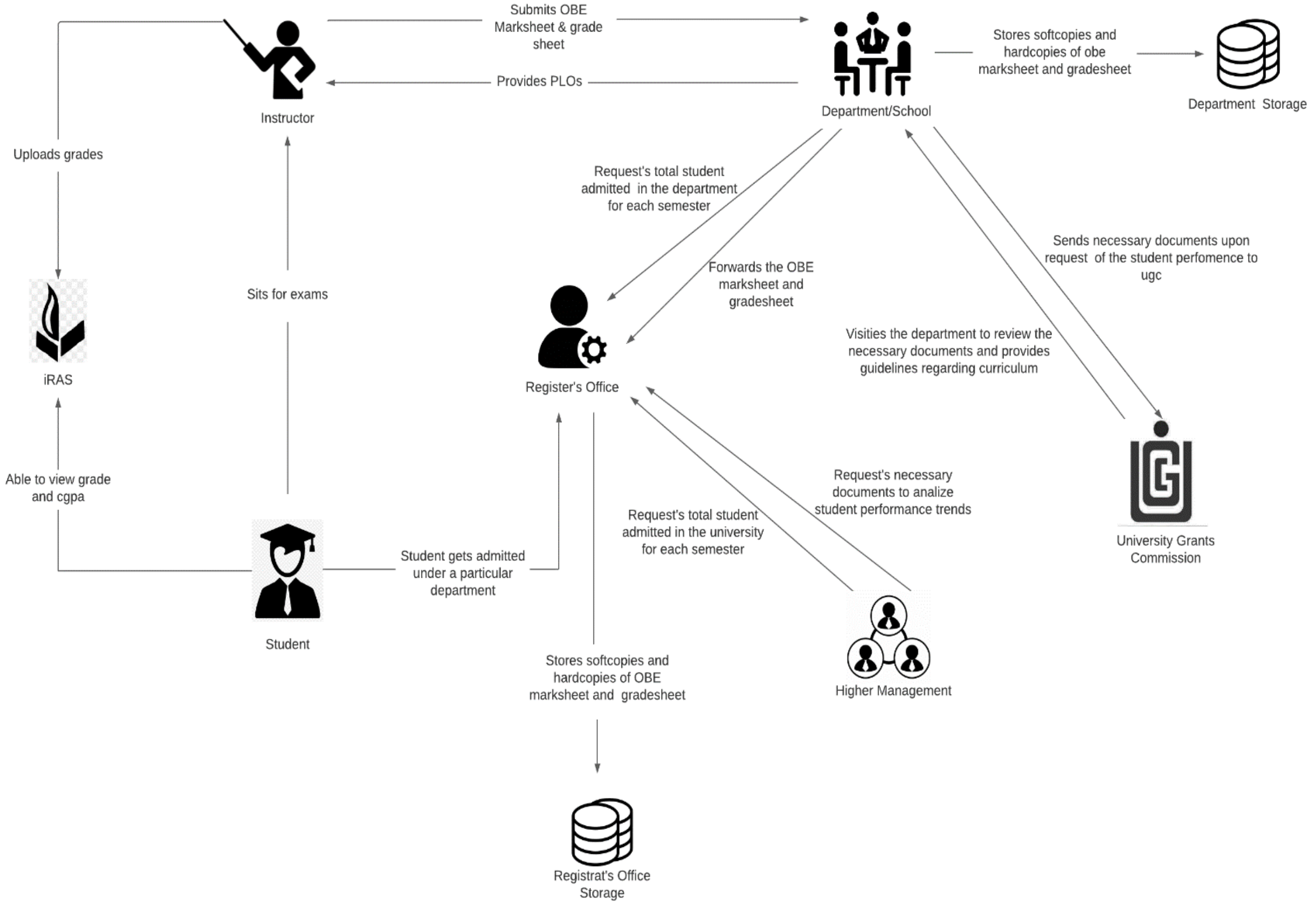
Data will also, be protected and each user will be shown only that data which is relevant to them.

CHAPTER 2

REQUIREMENT ANALYSIS

RICH PICTURE AS-IS
SIX ELEMENTS AS-IS
PROCESS DIAGRAM AS-IS
PROBLEM ANALYSIS
RICH PICTURE TO-BE
SIX ELEMENTS TO-BE
PROCESS DIAGRAM TO-BE

RICH PICTURE(AS-IS)


Submits OBE Marksheet & grade sheet
Provides PLOs
Instructor
Department/School
Stores softcopies and hardcopies of obe marksheet and gradesheet
Department Storage
Uploads grades
Request's total student admitted in the department for each semester
Sends necessary documents upon request of the student perfomence to ugc
Forwards the OBE marksheet and gradesheet
Sits for exams
iRAS
Register's Office
Visities the department to review the necessary documents and provides guidelines regarding curriculum
Able to view grade and cgpa
Request's necessary documents to analize student performance trends
Request's total student admitted in the university for each semester
Student gets admitted under a particular department
University Grants Commission
Student
Higher Management
Stores softcopies and hardcopies of OBE marksheet and gradesheet
Registrat's Office Storage

SIX ELEMENT(AS-IS)

Process	System Roles					
	Human	**Non-Comp Hardware**	**Computing Hardware**	**Software**	**Database**	**Network & Commination**
Student sits for exam	**Instructors** 1) Prepare question according to the mapped COs. 2) Give a particular time and date for the exam 3) Prepare SODs and invigilators **Students** 1) Attempt the examination	**Stationery** 1) Pen and paper for writing. 2) Compass, ruler and other stationery for drawing diagrams **Chairs and Table** 1) For using during exam. **Classroom** 1) A space for conducting the exams **Stapler** 1) For attaching all the extra paper, rough work and answers	**Computer/ Laptop** 1) Some courses require a computer for coding or open book exam. **Calculators** 1) Some exams require the use of calculators **Printers & photocopy machine** 1) Instructors use it for printing question papers	**Microsoft Word** 1) Typing the question and generating a printable pdf. **Operating System** 1) Any OS may be used. e.g. Windows, MacOS. **Adobe Acrobat Reader** 1) For viewing the question paper in pdf format	**Microsoft Excel** 1) Used for storing exam marks and calculating final grade	**Internet** 1) Used by students during open book exam

Process	**System Roles**					
	Human	**Non-Comp Hardware**	**Computing Hardware**	**Software**	**Database**	**Network & Commination**
Student are able to view grades, cgpa and download transcript	**Student** 1) Students have to login to iras by entering the student id and password 2) Select a specific semester 3) View grades for specific semester 4) Click on the transcript button to download a copy of transcript	**Paper** 1) Used for printing and keeping a hardcopy of transcript	**Computer/ Smart Phone** 1) Used for accessing iras. **Printer** 1) For printing the transcript	**iRAS** 1) Provides user interface for view grades and download transcript. **Browser** 1) Any browser an be used to access iras. e.g. edge, chrome, Firefox **Adobe Acrobat Reader** 1) For viewing the transcript which is in pdf format. **Operating System** 1) Any OS may be used. e.g. Windows, MacOS.	**iRAS database server** 1) iras database server is used for storing and receiving student grade information in iras	**Internet** 1) Internet is required for accessing iras

Process	System Roles					
	Human	Non-Comp Hardware	Computing Hardware	Software	Database	Network & Commination
Instructors uploads grades to iras	**Instructors** 1) Instructors types in user id and password for logging into the system 2) The instructor clicks to the submit grade section and is taken into the grade submission page 3) The instructor selects grade for each of the student 4) Clicks on the submit button to submit the grades		**Computer/ Smart Phone** 1) Used for accessing iras and submitting the grade	**iRAS** 1) Provides user interface for submitting the grades **Browser** 1) Any browser an be used to access iras. e.g. edge, chrome, firefox **Operating System** 1) Any OS may be used. e.g. Windows, MacOS	**iRAS database server** 1) iras database server stores all the grades	**Internet** 1) Internet is required for accessing iras and submitting the grades

Process	System Roles					
	Human	Non-Comp Hardware	Computing Hardware	Software	Database	Network & Commination
Instructors produce OBE marksheet and grades sheet and submits it to the department	**Instructors** 1) Instructor takes quizzes and exam 2)Checks the exam script 3) Records the mark for each exam in an excel sheet 4) Calculates the final grades and 5) Calculate total marks received for each CO 6) Declare if a student has achieved a specific CO 7) Declare if a student has received a PLO for a related CO 8) Make a verdict and analysis of how many students were able to receive a certain CO and PLO 9) Sends the final version of OBE marksheet to	**Paper** 1) Used for storing hardcopies of OBE marksheet	**Computer** 1) Computer is used for making softcopies of OBE marksheets **Printer** 1) To print the hardcopies of the OBE marksheet and grade sheet	**Microsoft Excel** 1) Used by instructors to calculate the PLO and CO achievement	**Department Storage** 1) A hardcopy of OBE marksheet and grade sheet is stored in the department storage **Register's Office Storage** 1) A hardcopy of OBE marksheet and grade sheet is stored in the register's office storage	**Internet** 1) Online platform such as- google sheets may be used for producing OBE marksheet

	department office **Department** 1) Receives a copy of the OBE marksheet and grade sheet from the instructors 2) Stores a copy of the OBE marksheet and grade sheet in department storage 3) Sends a copy of the OBE marksheet to the register's office **Register's Office** 1) Receives the OBE marksheet from department 2) Store the OBE marksheet in register's office storage					

Process	**System Roles**					
	Human	**Non-Comp Hardware**	**Computing Hardware**	**Software**	**Database**	**Network & Commination**
Map Course Outcomes (COs) to Program Learning Outcomes (PLOs)	**UGC** 1) Provides guide line to the department about the curriculum **Department** 1) Comes with the PLOs 2) Sends the PLOs to the instructor **Instructor** 1) List the course content and course outcome 2) Maps the course content to the COs 3)Maps the PLOs 4)Prepares question paper according to the COs	**Pen and Paper** 1) Used for brainstorming and rough works	**Computer/Smart devices** 1) Course coordinators use computers to make softcopies of course outcomes (COs) **Printers** 1) Used for print hardcopies of course outcomes (COs)	**Microsoft Word** 1) Course coordinators use MS word for making course outline and course assessment report with COs mapping to the PLOs		**Internet** 1) Internet is used to communicate with ugc and other stakeholders to discuss topics related mapping COs and PLOs

Process	System Roles					
	Human	Non-Comp Hardware	Computing Hardware	Software	Database	Network & Commination
Student gets admitted under a particular department	**Student** 1) Fills up the admission form for taking admission under a particular department 2) Receive an email regarding successful admission form submission **Register’s Office** 1) Receives the admission form 2) Analyze the admission 3) Check if the student fulfills all the requirements for getting admitted 4) If the student fulfills all the requirements then admit the student under the requested department. 6) Generate a student id number 5) Sends the total number of	**Paper** 1) Register’s office keeps a hardcopy of student information. e.g. student blood group, emergence contact number, address	**Computer** 1) Used for accessing iras and filling admission form **Printers** 1) For printing hardcopies of student information	**iRAS** 1) Provides user interface for filling the admission form **Browser** 1) Any browser an be used to access iras. e.g. edge, chrome, Firefox **Operating System** 1) Any OS may be used. e.g. Windows, MacOS.	**iRAS database server** 1) iras database server is used for storing all the admission information.	**Internet** 1) Internet is required for accessing the online admission form.

	students enrolled in a semester under a particular department to the department. 6) Send the total number of students enrolled in the university to the higher management. **Department** 1) Request total student enrolled in the department 2) Receive information about total student enrolled in department **Higher Management** 1) Request total student enrolled in the university 2) Receive information about total student enrolled in department.					

Process	System Roles					
	Human	**Non-Comp Hardware**	**Computing Hardware**	**Software**	**Database**	**Network & Commination**
Request for review and change of grades	**Student** 1)Request an Instructor for grade change by sending an application via email. **Instructor** 1)Receive a grade change mail from the student. 2)Check exam Papers and other assessment upon request. 3)If change needs to be made, then the instructor informs the department. 4) If not, end the process. Mail the student that his request has been denied. **Department** 1) Receives information regarding grade change of a specific student in a course.	**Pen and Paper** 1)used to note down key points or marks on the students' answer sheets.	**Computer/ Laptop** 1) Used for sending email to the instructor	**iRAS** 1)Used by the Register office for changing the grade **Operating System** 1) Any OS may be used. e.g. Windows, MacOS.	**iRAS database server** 1) Update student grade data. **Department Storage** 1)Update student grade data**.** **Register office's Storage** 1)Update student grade data.	**Internet** 1) Internet is needed to the mail a grade change request.

	2) Sends a request to the register’s office for grade change 3)Updates the OBE marksheet and grade sheet with the new grade and stores it in the department storage **Register’s office** 1)Receive a request from the department for the changing the grade of a student in a specific course. 2)Changes the grade of the particular student in the requested course. 3)Updates the register’s office storage with the new grade					

Process	System Roles					
	Human	Non-Comp Hardware	Computing Hardware	Software	Database	Network & Commination
View Records OBE Marksheets and Course Assessment Reports	**UGC** 1. Inform the university head of a deadline within which OBE Marksheets, Course Assessment Reports and other documents are needed for quality inspection to make necessary improvements to degree programs. 2. Inform the university head if an UGC personnel will visit the campus or softcopies will suffice. 3. Visit university heads and relevant schools to receive the necessary documents and reports if that is what was informed. **Department**	**Paper and Pen** 1)Used for noting/marking down key points of the report.	**Computer** 1) Used for viewing softcopies of OBE marksheet and grade sheet. 2) Used for send softcopies of OBE marksheet to the ugc officials.	**Microsoft Excel** 1) Used for viewing softcopies of marksheet **Operating System** 1) Any OS may be used. e.g. Windows, MacOS.	**Department Storage** 1) Used for retrieval of OBE marksheet and grade sheet when needed 2) Stores hardcopies and softcopies of OBE marksheet and grade sheet	**Internet** 1) Softcopies of OBE marksheet and grade sheet may be mailed to the ugc officials. 2) Online platforms such as google sheet may be use for displaying softcopies of marksheet.

	1) Request to view records of OBE Marksheets, Course Assessment Reports to analyze students' performance trends. 2) Direct Department Staff to gather necessary documents, OBE Marksheets and Assessment report for a given time-period specified by UGC. 3) Receive the necessary documents gathered by the Department 4) Evaluate the need to change/ improve the department's educational resources based on students' performance trends. 5) Send necessary documents to ugc. **Higher Management** 1) Requests the register's					

	office to send records of OBE Marksheets, Course Assessment Reports to analyze students' performance trends. **Register's Office** 1) Receive a request from higher management for sending OBE marksheet and grade sheets. 2) Sends the requested OBE marksheets and grade sheets to the register's office.					

PROCESS DIAGRAM(AS-IS)

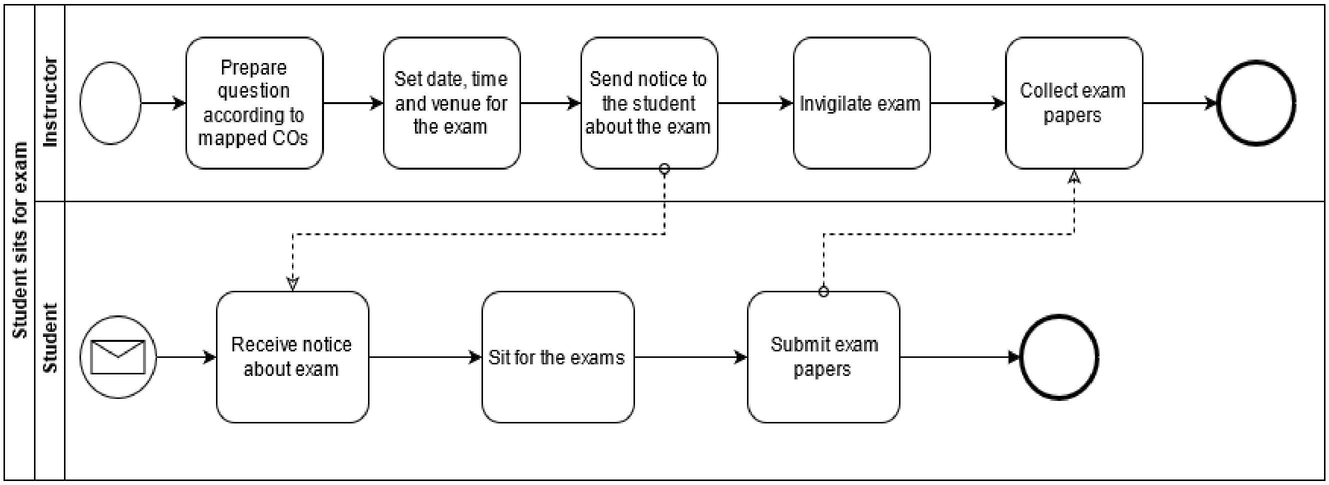

Student sits for exam
Instructor
Student
Prepare question according to mapped COs
Set date, time and venue for the exam
Send notice to the student about the exam
Invigilate exam
Collect exam papers
Receive notice about exam
Sit for the exams
Submit exam papers

FIGURE 2.1 Process Diagram for Student Sits for exam

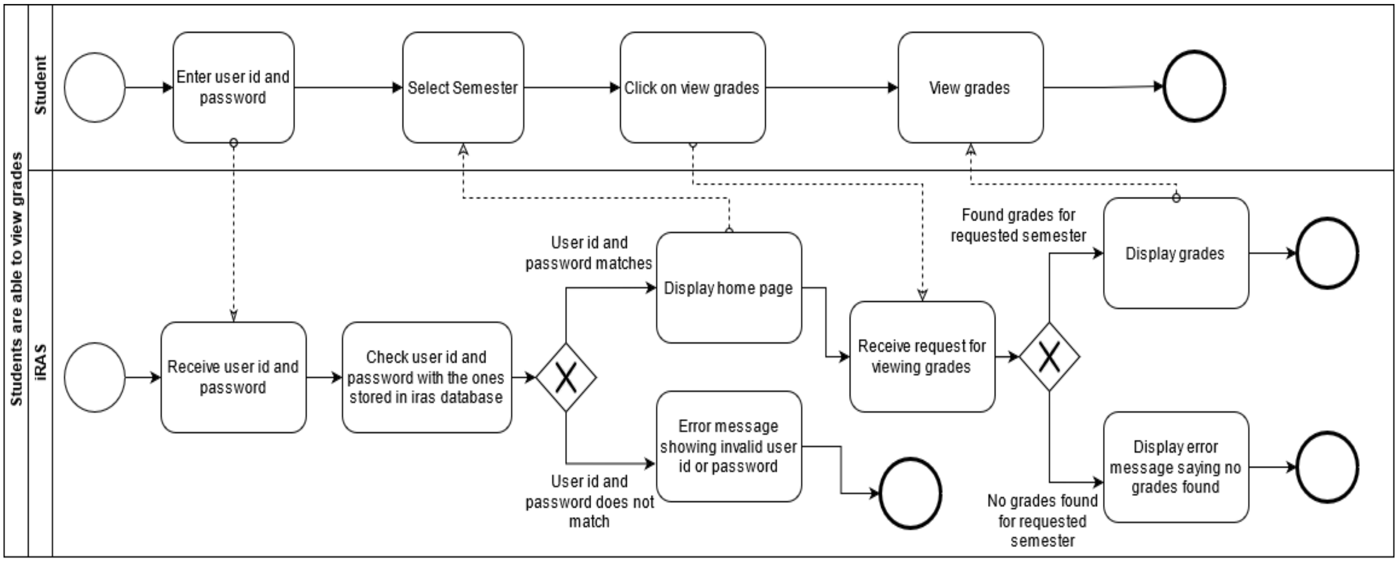

Students are able to view grades
Student
iRAS
Enter user id and password
Select Semester
Click on view grades
View grades
Receive user id and password
Check user id and password with the ones stored in iras database
User id and password matches
Display home page
User id and password does not match
Error message showing invalid user id or password
Receive request for viewing grades
Found grades for requested semester
Display grades
No grades found for requested semester
Display error message saying no grades found

FIGURE 2.2 Process Diagram for Student are able to view grades and CGPA

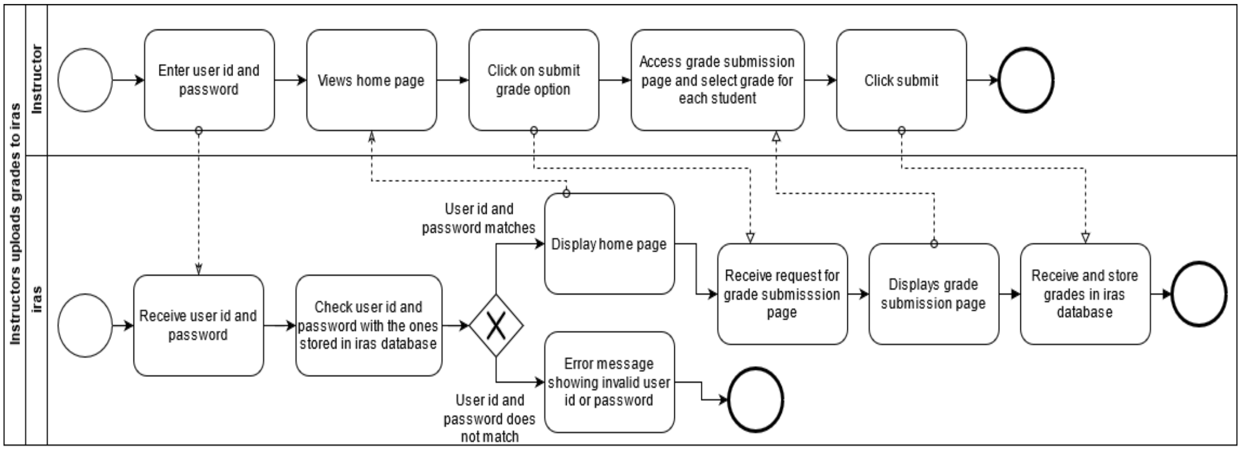

Instructors uploads grades to iras
Instructor
iras
Enter user id and password
Views home page
Click on submit grade option
Access grade submission page and select grade for each student
Click submit
Receive user id and password
Check user id and password with the ones stored in iras database
User id and password matches
Display home page
User id and password does not match
Error message showing invalid user id or password
Receive request for grade submisssion page
Displays grade submission page
Receive and store grades in iras database

FIGURE 2.3 Process Diagram for Instructor uploading grade to iras

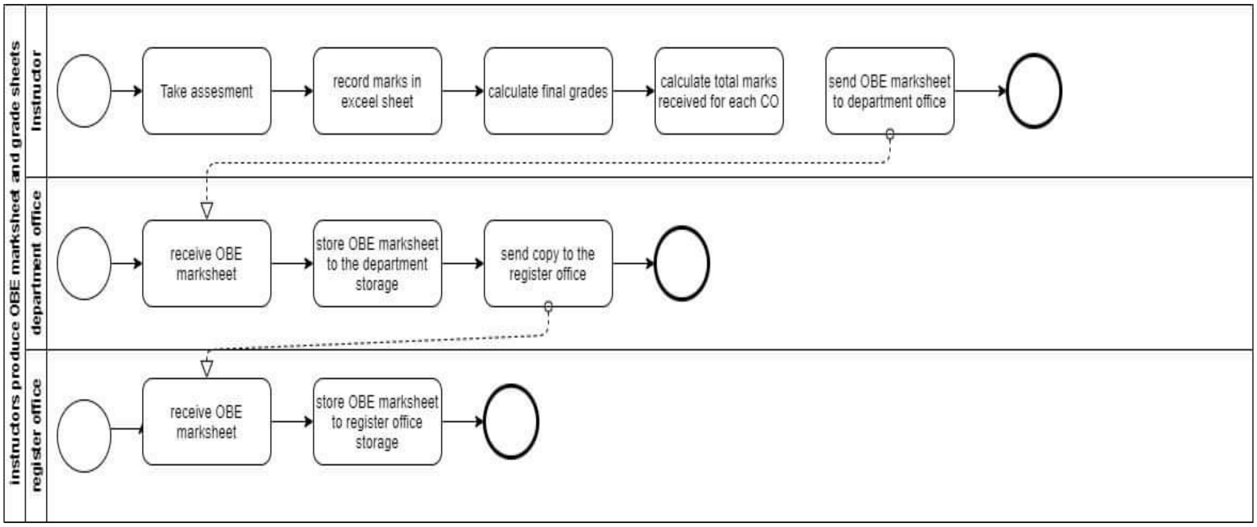

instructors produce OBE marksheet and grade sheets
Instructor
department office
register office
Take assesment
record marks in exceel sheet
calculate final grades
calculate total marks received for each CO
send OBE marksheet to department office
receive OBE marksheet
store OBE marksheet to the department storage
send copy to the register office
receive OBE marksheet
store OBE marksheet to register office storage

FIGURE 2.4 Process Diagram for Instructor produces OBE marksheet

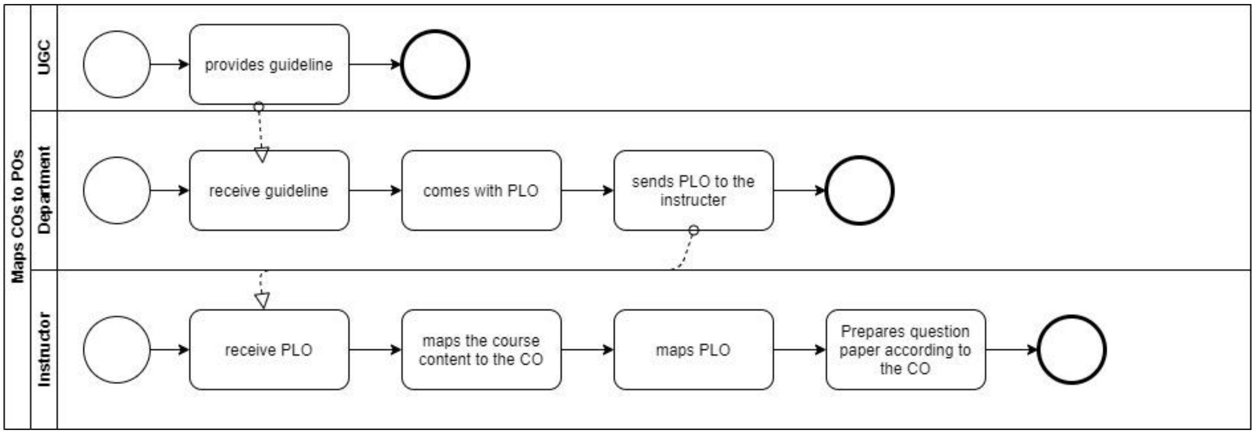


FIGURE 2.5 Process Diagram for Map COs and Pos

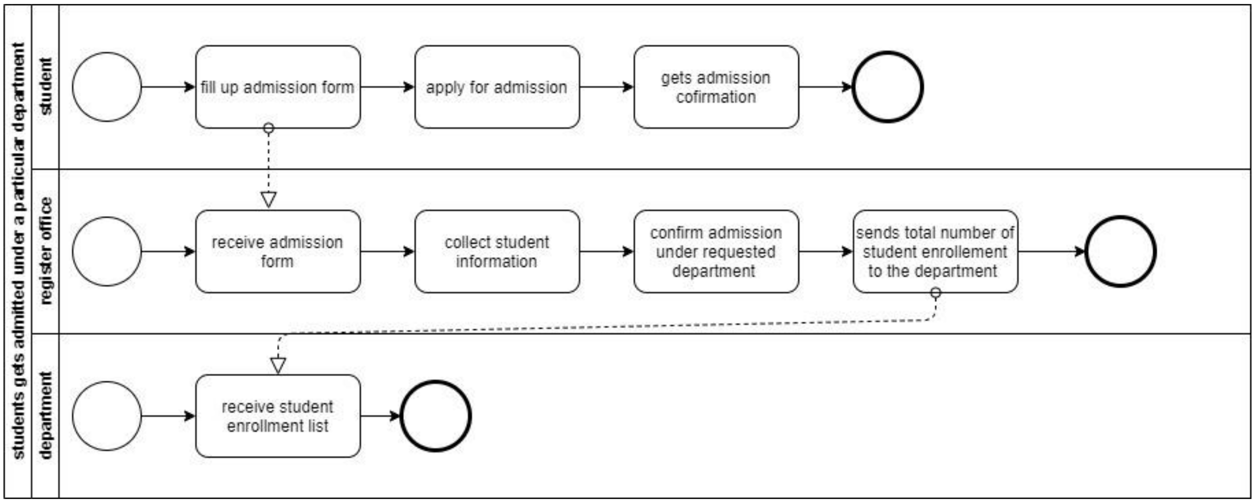

students gets admitted under a particular department
student
fill up admission form
apply for admission
gets admission cofirmation
register office
receive admission form
collect student information
confirm admission under requested department
sends total number of student enrollement to the department
department
receive student enrollment list

FIGURE 2.6 Process Diagram for Student gets admitted under particular department

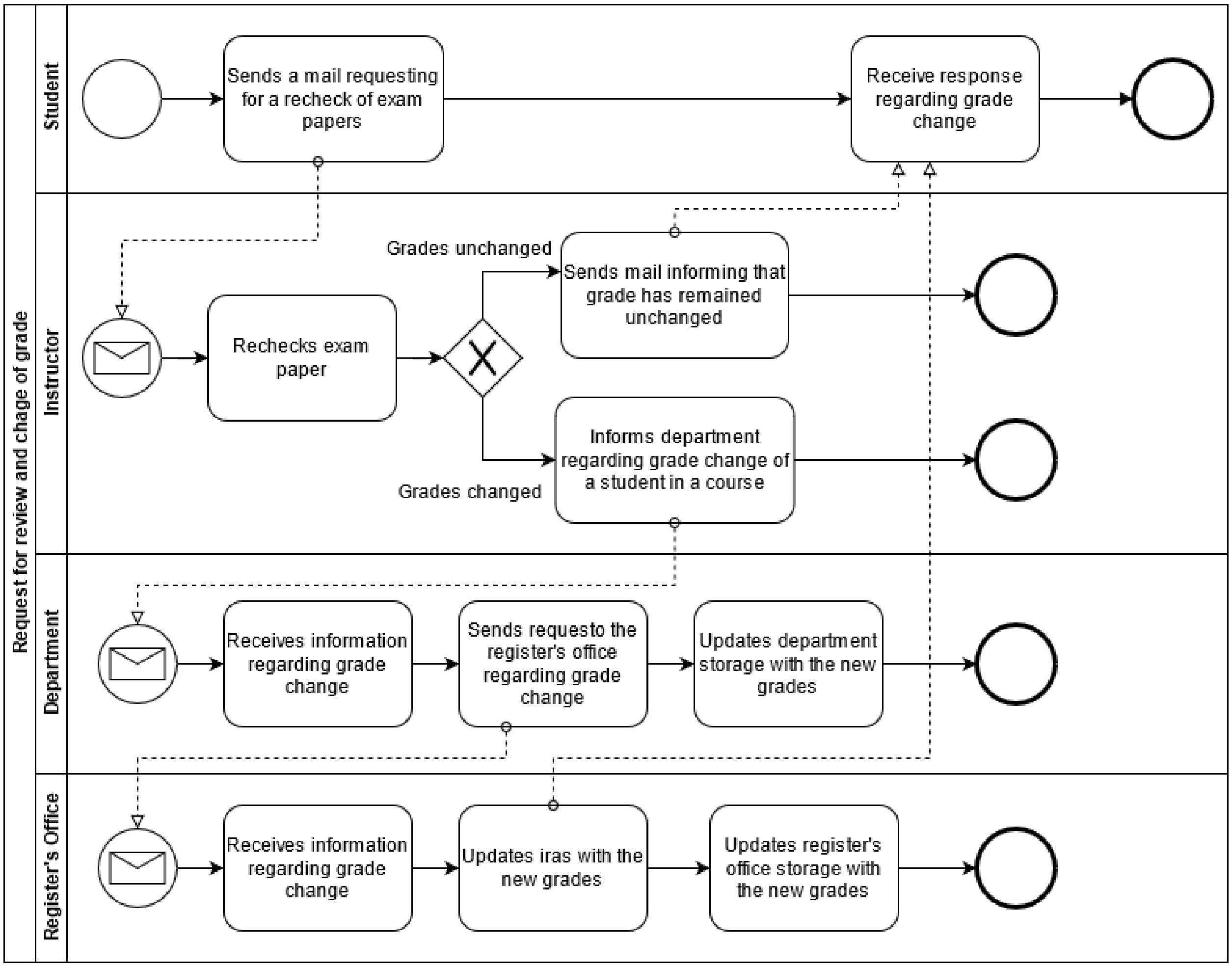

Request for review and chage of grade
Student
Instructor
Department
Register's Office
Sends a mail requesting for a recheck of exam papers
Receive response regarding grade change
Grades unchanged
Sends mail informing that grade has remained unchanged
Rechecks exam paper
Informs department regarding grade change of a student in a course
Grades changed
Receives information regarding grade change
Sends requesto the register's office regarding grade change
Updates department storage with the new grades
Receives information regarding grade change
Updates iras with the new grades
Updates register's office storage with the new grades

FIGURE 2.7 Process Diagram for request for review and change of grades

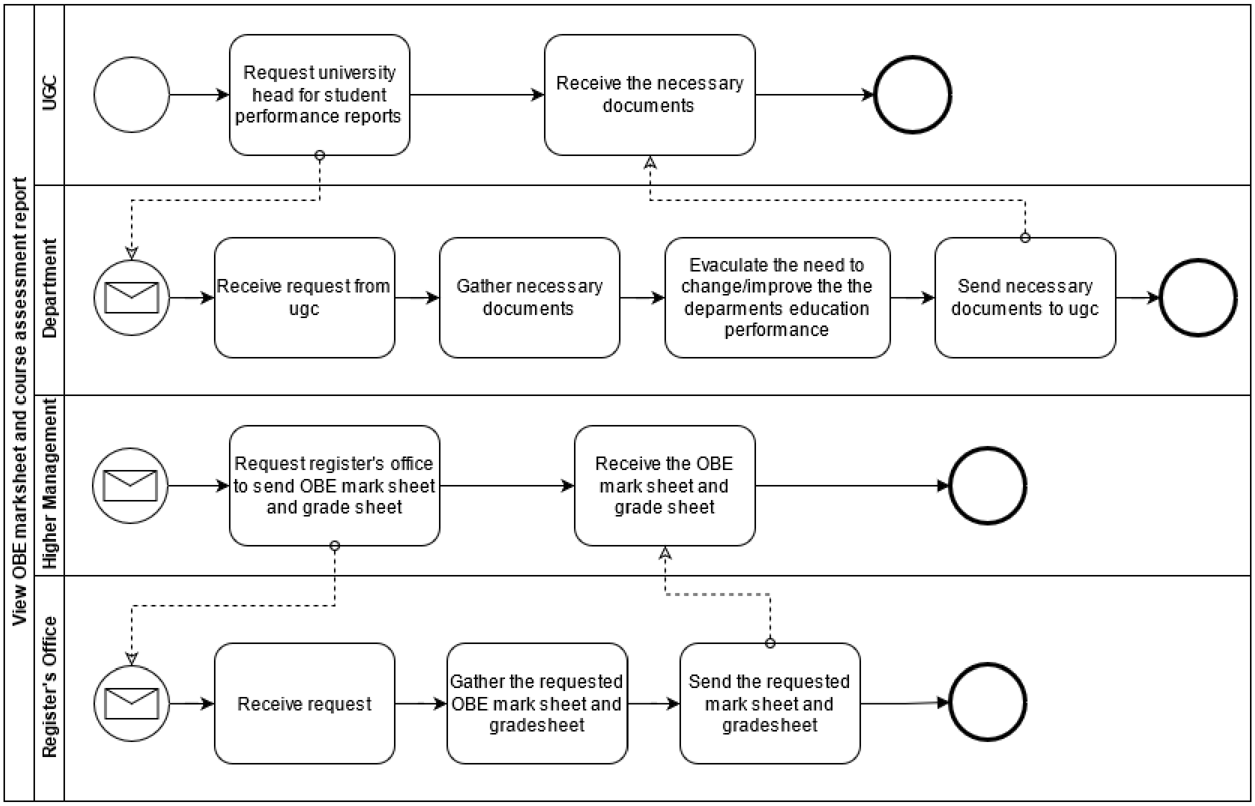

View OBE marksheet and course assessment report
UGC
Request university head for student performance reports
Receive the necessary documents
Department
Receive request from ugc
Gather necessary documents
Evaculate the need to change/improve the the deparments education performance
Send necessary documents to ugc
Higher Management
Request register's office to send OBE mark sheet and grade sheet
Receive the OBE mark sheet and grade sheet
Register's Office
Receive request
Gather the requested OBE mark sheet and gradesheet
Send the requested mark sheet and gradesheet

FIGURE 2.8 Process Diagram for view obe marksheet and course assessment report

Problem Analysis

Process Name	Stakeholders	Concern (Problems)	Analysis (reason of the problem)	Proposed Solutions
Preparing a Course Assessment	1.Instructor 2.Student	Sending hardcopy And softcopy Students examination marks And course Assessment report to the register office store the info Time consumption And delay is prime limitation. Even after storing data in the register office store, if there is any need to see the information of any student or any course performance or a particular section of high management then It is very difficult to find these.	In our existing system higher management store assessment data manually As sending hardcopy and softcopy to the register office involve multiple persons and different processes, it could easily led to confusion, loss of important student report card. It also wastes unnecessary resources such as paper and printer.	We will create a system where Higher management will no longer have to wait for the registered office for searching particular student data. If higher management wants to find student data, specific course data, or find specific section-wise student data they can enter only student ID, Course ID, or Section ID in our new system. They will be able to see student performances in the graph shows. And they can download student information.
Higher Management Viewing Individual	1.Department Head 2.Dean 3.Instructor	In our existing system higher management can't see their instructor performance digitally. Higher management see only Instructor performance send by the hardcopy of the course wise student performance report. Higher Management can't see how many quizzes	In our exacting system higher management can only see Hardcopy for an individual instructor performance, but it's difficult for measuring a performance instructor by instructor, and it's also difficult comparing with previous semester performance because its	We will create a new system where Higher Management can see their Instructor Performance department wise, section wise, and course wise. Higher Management can download instructor performance data with graphs or charts. Then they can easily compare to each

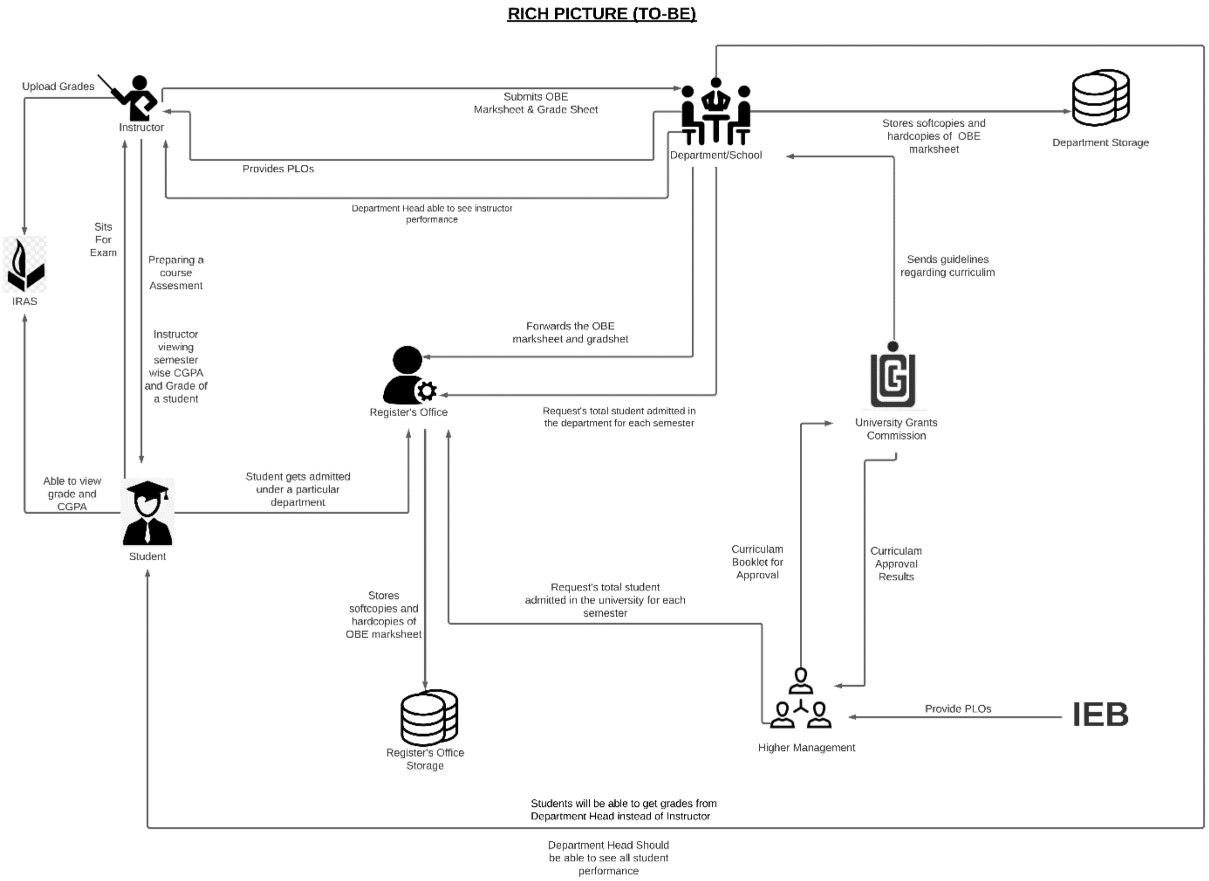
Instructor Performance		and assignment they are taken, whether he is taking regular classes, whether he is giving exam papers properly, what is the result of the student in his section, what was the result of the last semester even under that faculty and what kind of project they are maintains for specific course and prepare a projects specification based on their course	hardworking and time consumption matter. It also wastes unnecessary resources such as paper and printer.	other and also compare with previous semester result in the same course. After download data Higher Management can see their performance like how many quizzes and assignment they are taking, whether instructor attend the class regularly, also see instructor class performance and class performance feedback by the student after faculty evaluation
Instructor viewing the CGPA and change the grade	1.Instructor 2.Student	In our existing system without the Higher Management, the faculty cannot see any student's CGPA and grade sheet. They only know about the courses they have taken. Even once they upload the grade to the system, they cannot change it later. If a student's grade changes or applies for a change, the instructor has to help the Register Office and Department Head. And it takes the permission of the obsessed department head	Now, instructor can't see any student CGPA and grade sheet and also If a student feels that his or her grade has not been returned or correct, the student will apply along with the instructor. After Application Instructor Contact Department Head Than They Can Check the Script Again. If change is another grade then department head request	We will create a new system where Higher Management and instructor can see the student CGPA and Grade sheet using student ID in this case instructors and students should be in the same department. And also we will create a system where higher management and instructor can change the grade easily getting application from student after checking script with department head and controller of examination. After. And instructor get

		to change the grade	to Register Office for Change The Grade, It's a Long Term and Hard Process Also its Time Consumption process.	permission to resubmits the grades easily using our new system.
Higher management and Instructor viewing OBE mark sheet and grade sheet	1.Higher management (HM) 2.Instructor 3.Department 4.Dean/Vc	The current process of requesting the head of the department to view records for analysis and inspection can result in delays due to various problems in communication. Since the OBE Marks sheets course assessment reports and other necessary documents are only saved in softcopies (Without database management) and hard copies, it can get tedious and time-consuming to retrieve them when needed.	Due to being a hardcopy, when the Higher management wants to see each course, section, and department wise OBE mark sheet and course assessment then a lot of trouble to maintain this kind of documents, and it is also very difficult to analyze by looking at the hard copy so that the data is likely to be wrong and lost and when these data are compared with any previous data it becomes more difficult. It also wastes unnecessary resources such as paper and printer.	We will create a new system where Higher Management and instructor can see the OBE Mark Sheet, Course Assessment using their ID (Only those to whom Higher management will give permission will be able to see) The system that we will build be there the mark sheet and course assessments will be according to the section, course, and department, and they can download them as needed.

Students will be able to get grades from Department instead of Instructor	1. Department 2. Instructor 3. Student	We don't have the option to grade someone else instead of the Instructor in our system. If for some reason an instructor cannot give a grade If there is an instructor leave or something tragic happens then there is no option to continue the semester and submit a grade, unless the department manages it.	If necessary, if an instructor is on leave, then the whole matter has to be handled by the department Instead, another instructor has to be appointed and he has to explain the whole process again, it's difficult to manage in a short period of a semester.	We will create a new system where the Department Head can see the performance of the students and give them a grade for Emergency Situations. Based on their PLO & co achievement and OBE mark sheet in the Previous semester
Higher Management & Instructor Uploading & Viewing PLOs/CO	Higher Management (HM) Department	In our existing system Higher Management (HM), Department Head, Dean/VC and instructor see only hardcopy PLOs and Co achievement, but its time consuming when they want to check it manually. There are many students in one section and every course has many sections and each department has many students, so a lot of student information is not possible to check manually. In this case, there is a possibility to lose data.	The current system does not support Viewing PLOs and CO achievement. Due to which no one Instructor, Higher Management cannot see the POL & Co Achievement and student performance	We will create a new system where Where instructors can upload Plo & Co reports, all of the higher management and instructors can see and download the data. They will be able to view this data using input Student id to the system and see Plo & co achievement of any specific student, course-wise, and section-wise.

Student viewing PLO & CO	1.Student	In our existing system Student cannot see our PLOs and Co achievement. They cannot even see the hardcopy.	It is important for every student to see their Plo and co-Achievement, what course they are doing, it is important to know what did they achieved and what issues need to be improved. But it is not seen in our existing system now.	We will create a new system where Students will be able to see and download the file and they will be able to view their Plo & Co achievement and compare with the other Course.
UGC approves curriculum based on PLO and CO	1. Higher Management (HM) 2. UGC	HM needs to send the curriculum booklet manually. HM needs to send the updated Curriculum to the Department every time.	It will take time for the UGC to receive the Curriculum booklet and process the information. It is a hassle to send manually every time the curriculum is updated	We can transfer the curriculum in our new system by which it could be accessed easily by the members and it also could be edited real time by the HM and updated instantly whenever changes are required by the UGC.

RICH PICTURE (TO-BE)



SIX ELEMENT (TO-BE)

Process System Process	Human	Non-comb Hardware	Computing Hardware	Software	Database	Network and Communication
Preparing Course Assessment of Instructor	**Instructor:** 1)Log in to a “New **System”.** 2) Instructor will be shown the courses they have/had for every semester under “Semester” Tab. 3)Select course (section and thereof). 4)Create (quiz/ exam/ project) 5)For each student, each student’s score for each question. 6) Upload the Assessment report for the students. Student: 1)Login to the “New System”. 2)Goes to desired course. 3)Click on “Course Assessment’	**Google Forms:** 1)Used for recording a student’s remote response to the questions.	**Computer**: 1)Used for accessing the “New System”. **Printer:** 1)Printout the softcopy of Assessment report.	**New System Faculty frontend:** 1)Provides user interface for the faculty to enter student assessment data	**Google Classroom:** 1)Import assessment data from google forms(or classroom, depending on their API), manually or automatically	**Internet:** 1)New System is a fully online web application: all preparing and requests thereof are sent through the internet. **Email:** 1)Email is the primary method of notifying the students about major assessment

	4) Download it.					
Instructor Able to see the result of another courses of a Student	**Instructor**: 1.Login to **New System.** 2. Search that specific student's id. 3. See the grades of other courses for intended semester but only his/her(Instructor) Department. **Register Office:** 1.Access **New System.** 2.View Students grades of other courses if and when it’s necessary	**Pen and Paper:** Note down the grade if needed.	**Computer/Phone:** 1.Used for accessing **New System.** 2.Used Computer to make softcopies. **Printer**: Printout the softcopies.	**New System Instructor frontend: 1.** Provides the online user interface for viewing grades.	**Networking devices (Router, Switch Bridge, Hub):** Used by Instructor and students to access the Internet. **Database Server**: Instructor receive the student information in **New System.**	**Internet:** All related data searched through internet.
Students will be able to get grades from Department instead	**Department**: 1.Collect the student’s OBE mark sheet & grade sheet. 2.Log in to **New System.** 3.Click on “Performance	**Calculator**: Marks are calculated with a calculator.	**Computer:** Used for accessing IRAS. **Printer:** Printout the softcopy of the mark sheet.	**Excel sheet:** Marks-sheet can be created using Excel sheet, Google sheet **Email Software:** Used for communication	**New System RDBMS:** 1. This Database management used to store and maintain student grades’ information	**Internet and Gmail:** The marks sheet can be taken through emails or any other internet messaging platforms.

	Monitoring" tab. 4.Search Student I'd to upload his/her grade. 3.Select a particular course & section according to the Department. 4. Submit the grade next to the student's name based on their PLO & co achievement and OBE mark sheet			between Department head and Instructor.		
UGC approves curriculum based on PLO and CO	**Higher management:** 1)Log in to **New System**. 2)Requests for Program approval to UGC based on Plo & CO. **UGC:** 1)Receive the request from Higher Management. 2)Feedback the higher management.	**Paper:** 1)Use to print book of curriculum. 2)Use for signature.	**Printer:** 1)Use for print. **Computer**: 1)Save the file.	**Microsoft Word:** 1)Use for save book. **Excel sheet:** Necessary data store.	**Gmail:** Using for mail send. **Web Server:** 1)Update information. **Microsoft Excel Database:** Instructor excess CO's form.	**Internet:** Using send mail UGC and update and upload new Version
Department Head able to	**Department Head** :	**Paper:** Instructor send the	**Computer/Phone:**	**Excel sheet:**	**New System server:**	**Internet:**

see all instructor Performance	1.Login to **New System**. 2.Click on "Performance Monitoring" tab. 3.Select course and section, according to Department.	hardcopy of the semester wise student performance report to the	1.Used for accessing **New System**. 2.Create softcopies of record of all assessment date. **Printer:** 2.If needed Printout the softcopies.	Record necessary assessment data in Excel sheet. **Department frontend:** Update activity of Instructor. **Printing Software:** Used for printing Software doc. **PDF Viewer:** To view the transcript in PDF-form.	Store update activity. **Department Storage:** Record of instructor assessment.	Need to connect **New System.**
Higher Management and Instructor viewing OBE mark sheets and grade sheet	**Department Head/ Dean/ VC/ Board of Trustees:** 1)Log into New System Department Head dashboard. 2)View department Assessment report . 3)View Course Assessment Reports & OBE Mark sheets, searchable by year, according to the Department & Course.	**Pen and paper:** **1**. May be used for high-level notetaking.	**Cloud Server:** 1. Receive and process incoming requests Computer/ mobile: 1. View reports & mark sheet, grade sheet.	**New System Instructor frontend:** **1**. Provide user interface for online Instructor navigation. 2. Show specific reports on request. 3. Sort report data in customizable ways (by PLO, by CO, by semester, by course, by time)	**System RDBMS:** **1**. For a specific course and student(s) , retrieve PLO/ CO achievement data from RDBMS and tabulate them. 2. From tabulated data, derive outcome analysis and verdict	**Internet:** 1. New System is a fully online web application: all packets and requests thereof are sent through the internet.

	4)View individual student reports. **Instructor:** 1)Log into New System Instructor dashboard. 2)Using ID & Password. 3)Click on “Performance Monitoring” tab. 4)View Course Assessment Reports & OBE Mark sheets according to the Department, Course & Section. 5)Download them if they want or need.			**Excel sheet**: Record necessary report in Excel sheet.		
Instructor viewing CGPA and change the grade	**Student:** 1.Log into **New System** Student Dashboard 2. Goes to desired course 2.Click on “Request Grade Change” 3.Fills form e.g. with	**Pen and paper:** 1. May be used for high-level notetaking. 2. Hard copies of student test papers used for review	**Computer/Phone:** 1.Used for viewing and making changes to grades	**New System Student frontend**: 1. Provide user interface making grade change requests 2.Show “Request Grade Change” interface	**New System RDBMS**: 1. Changed grade data are stored here	**Internet:** 1. This **New Systemis** a fully online web application: all packets and requests therefore are sent through the internet.

	reason for grade change 4.Submits the grade change request **Instructor:** 1.Logs into Instructor dashboard 2.Reviews grade change request 3.Check exam Papers and other assessment upon request. 4.If change needs to be made, then the instructor changes the grade and inform or Submit the grade to the Department. 5.If not, end the process. Mail the student that his request has been denied. **Department** 1.Receives information regarding grade change of a specific student in a course. 2. Updates the OBE mark sheet and grade sheet with the			3.Provide field to input reason for grade 4.Show submit button interface **New System Instructor frontend:** 1.Provide user interface for instructor to make grade changes 2.Show requested grade change details 3.Show approve or disapprove button 4.If approved, provide field for new grade input		

	new grade and stores it in the department storage. 3.Inform to the Register’s office for changing the grade. **Register’s Office:** 1)Receive a request from the department for updating new grade of a student in a specific course. 3)Updates the register’s office storage with the new grade					
Student viewing PLO & CO	**Student:** **1.**Log into **New System** Student Dashboard 2. Click on “Performance Monitoring” tab 3. Select course and time period 4. Click on “Plo & CO's report” 5. View OBE mark sheet in browser.	**Pen & Paper:** Note down the grade if needed. **Calculator:** Marks are calculated with a calculator.	**Computer/Phone:** 1.Used for accessing **New System.** **Printer**: 1.If needed Printout the softcopies	**System Student frontend:** 1.Provide user interface for online Student navigation 2. Show specific reports 3. Sort report data in customizable ways (by PLO, by CO, by semester, by course, by time)	**New System RDBMS**: 1. A Database Management Service is used to store, maintain, edit and receive the list of COs and PLOs of each student, student’s grade information and transcript.	**Internet:** All related data searched through internet.

	7. Obtain information about their performance for the selected semester. 8. Download report in PDF form					

PROCESS DIAGRAM (TO-BE)

process diagram (To be)

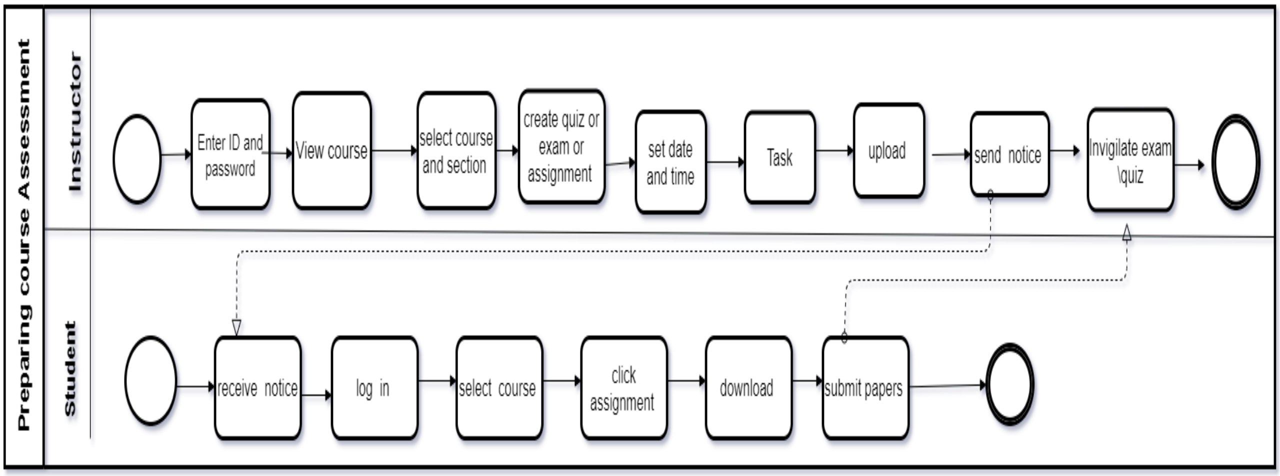


FIGURE 2.1: Process Diagram for preparing course assessment

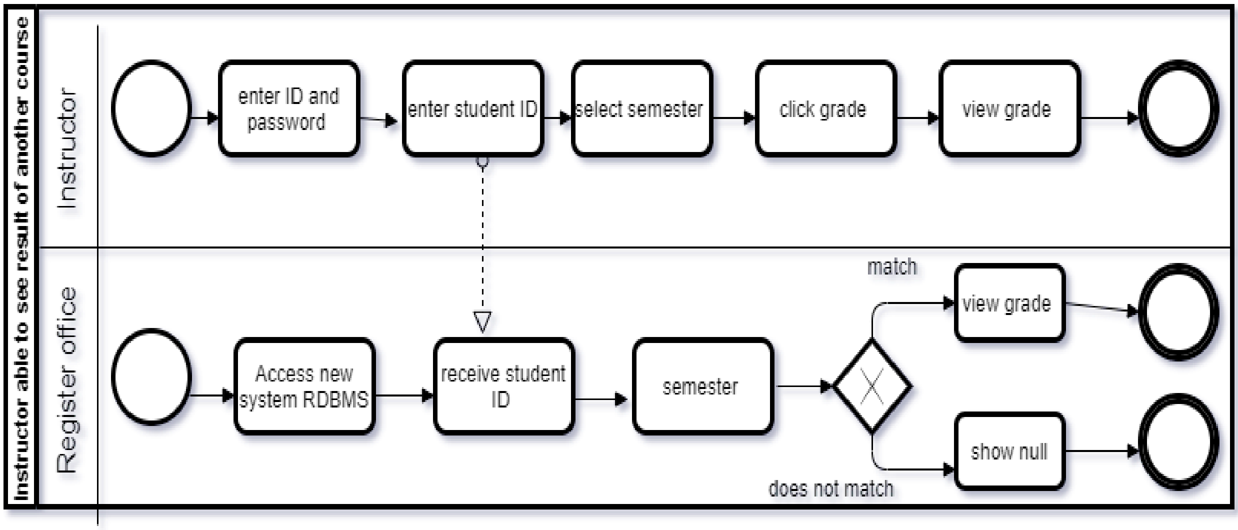


FIGURE 2.2: Process diagram for instructor able to see any course result

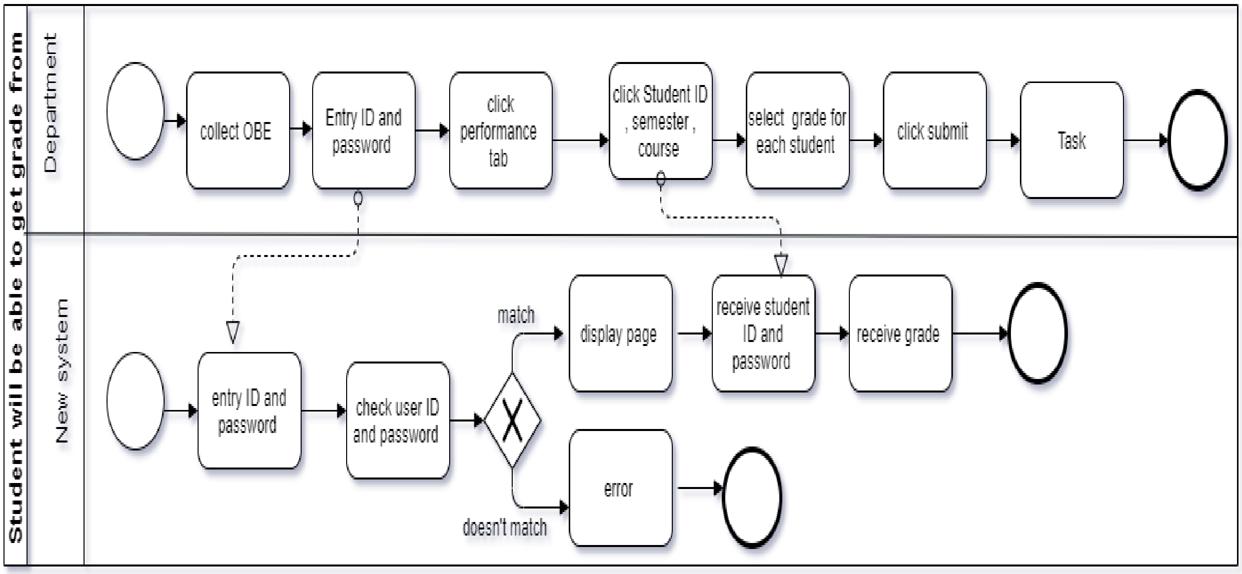

Student will be able to get grade from
Department
collect OBE
Entry ID and password
click performance tab
click Student ID , semester , course
select grade for each student
click submit
Task
New system
entry ID and password
check user ID and password
match
doesn't match
display page
receive student ID and password
receive grade
error

FIGURE 2.3: Student will be able to get grade form

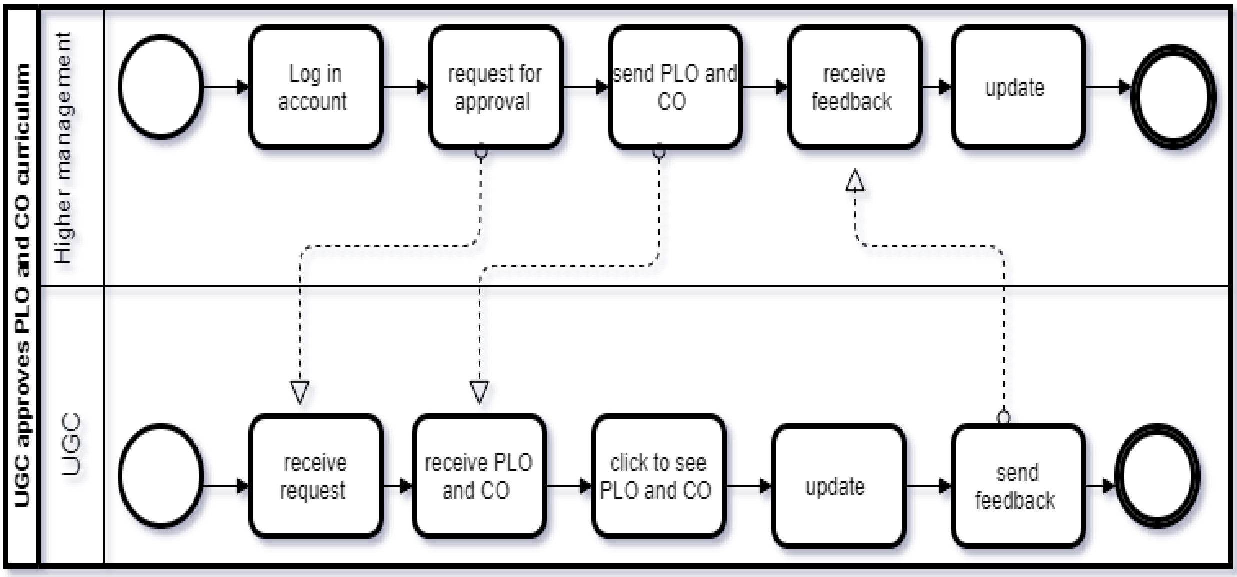


FIGURE 2.4: UGC approves PLO and CO Curriculum

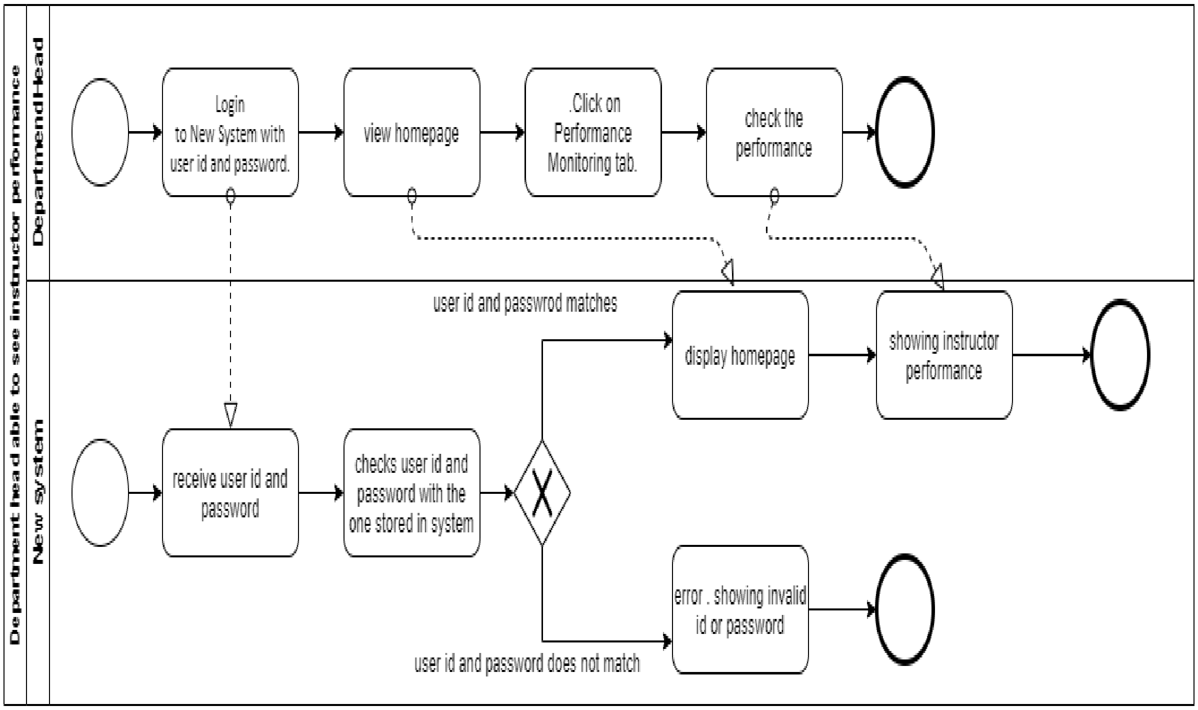

Department head able to see instructor performance
DepartmendHead
New system
Login to New System with user id and password.
view homepage
.Click on Performance Monitoring tab.
check the performance
user id and passwrod matches
display homepage
showing instructor performance
receive user id and password
checks user id and password with the one stored in system
error . showing invalid id or password
user id and password does not match

FIGURE 2.5 : Department head able to see instructor performance

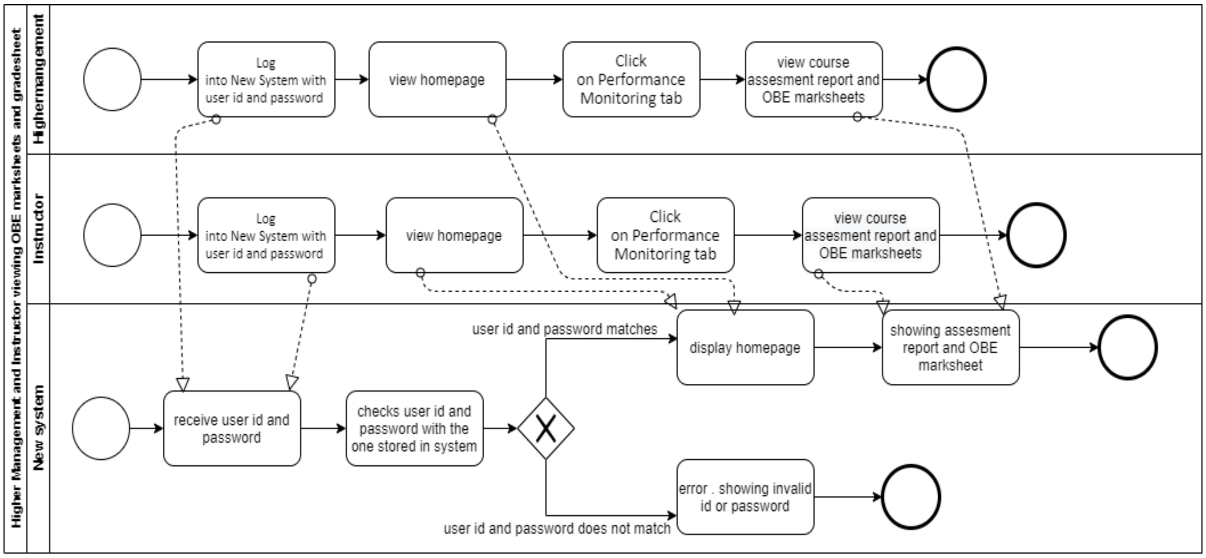

Higher Management and Instructor viewing OBE marksheets and gradesheet
Highermangement
Instructor
New system
Log into New System with user id and password
view homepage
Click on Performance Monitoring tab
view course assesment report and OBE marksheets
Log into New System with user id and password
view homepage
Click on Performance Monitoring tab
view course assesment report and OBE marksheets
user id and password matches
display homepage
showing assesment report and OBE marksheet
receive user id and password
checks user id and password with the one stored in system
error . showing invalid id or password
user id and password does not match

FIGURE 2.6 : Higher Management and Instructor viewing OBE marksheets and grade sheet

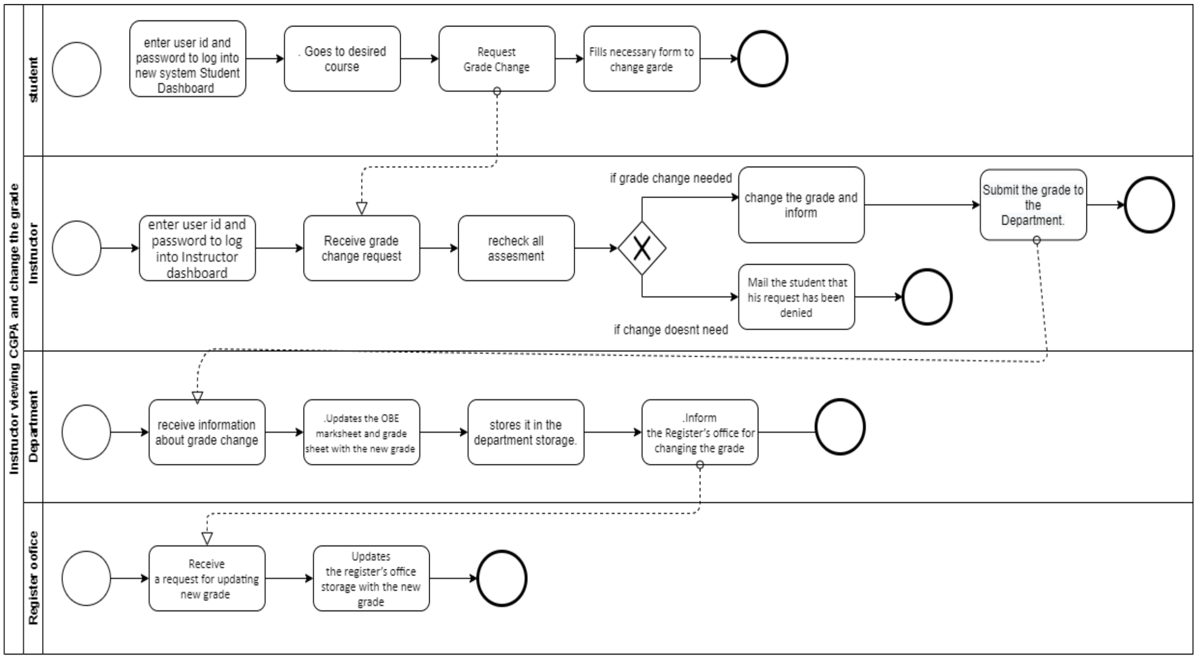

Instructor viewing CGPA and change the grade
student
enter user id and password to log into new system Student Dashboard
Goes to desired course
Request Grade Change
Fills necessary form to change garde
Instructor
enter user id and password to log into Instructor dashboard
Receive grade change request
recheck all assesment
if grade change needed
change the grade and inform
Submit the grade to the Department.
Mail the student that his request has been denied
if change doesnt need
Department
receive information about grade change
.Updates the OBE marksheet and grade sheet with the new grade
stores it in the department storage.
.Inform the Register's office for changing the grade
Register oofice
Receive a request for updating new grade
Updates the register's office storage with the new grade

FIGURE 2.7 : Instructor viewing CGPA and change the grade

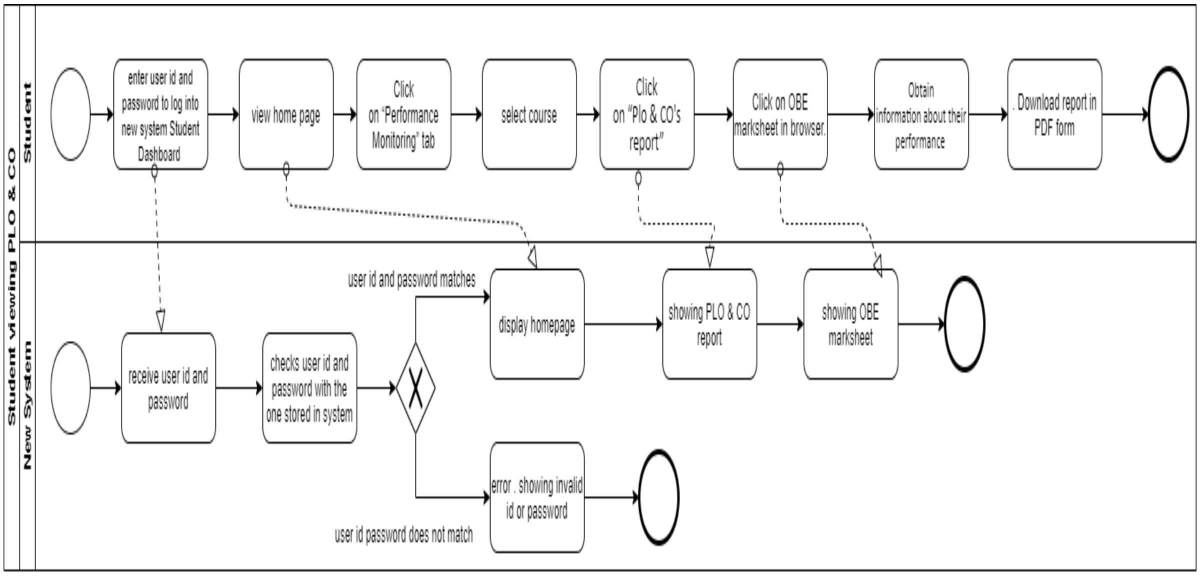

Student viewing PLO & CO
Student
enter user id and password to log into new system Student Dashboard
view home page
Click on "Performance Monitoring" tab
select course
Click on "Plo & CO's report"
Click on OBE marksheet in browser.
Obtain information about their performance
Download report in PDF form
New System
receive user id and password
checks user id and password with the one stored in system
user id and password matches
display homepage
showing PLO & CO report
showing OBE marksheet
error . showing invalid id or password
user id password does not match

FIGURE 2.8 : Student viewing PLO and CO

CHAPTER 3

LOGICAL SYSTEM DESIGN

BUSINESS RULE

ENTITY RELATIONSHIP DIAGRAM

ENTITY RELATIONSHIP DIAGRAM TO RELATIONAL SCHEMA
NORMALIZATION

DATA DICTONARY

BUSINESS RULE

1) A student may register under one or more programs. A program many have multiple students.

2) A department may have multiple programs. A program must be exactly under one department.

3) A school may have multiple departments. A department must be exactly under one school.

4) A department may have multiple instructors. An instructor must be exactly under one department.

5) A department must have exactly one head.

6) A school must have exactly one dean.

7) A program may have multiple PLOs. A PLO many be under multiple programs.

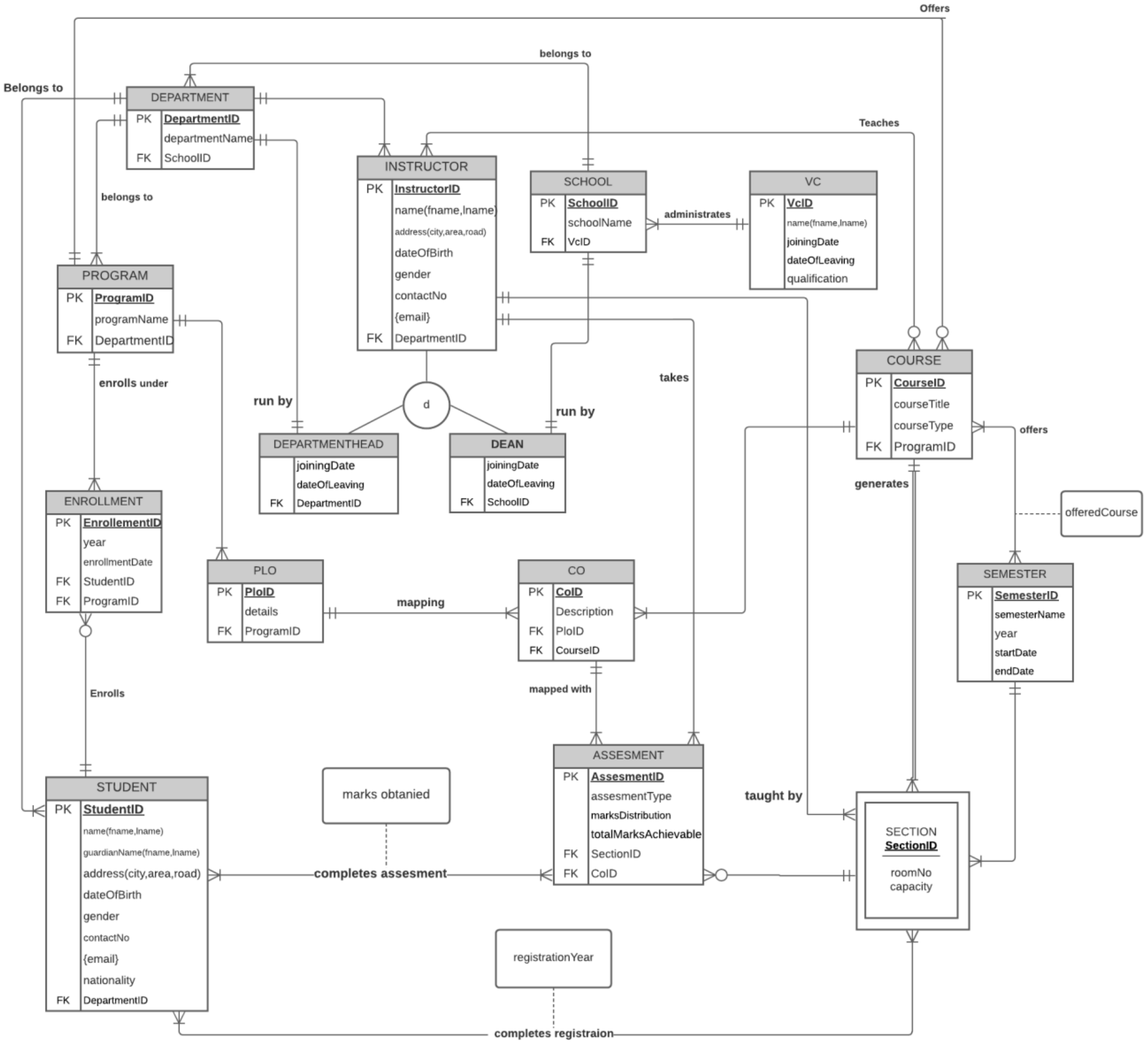
8) An instructor may teach multiple courses. A course must have exactly one instructor.

9) A course may have multiple sections. A section must be under exactly one course.

10) A student may tale multiple assessments. A particular assessment must be taken exactly by one student.

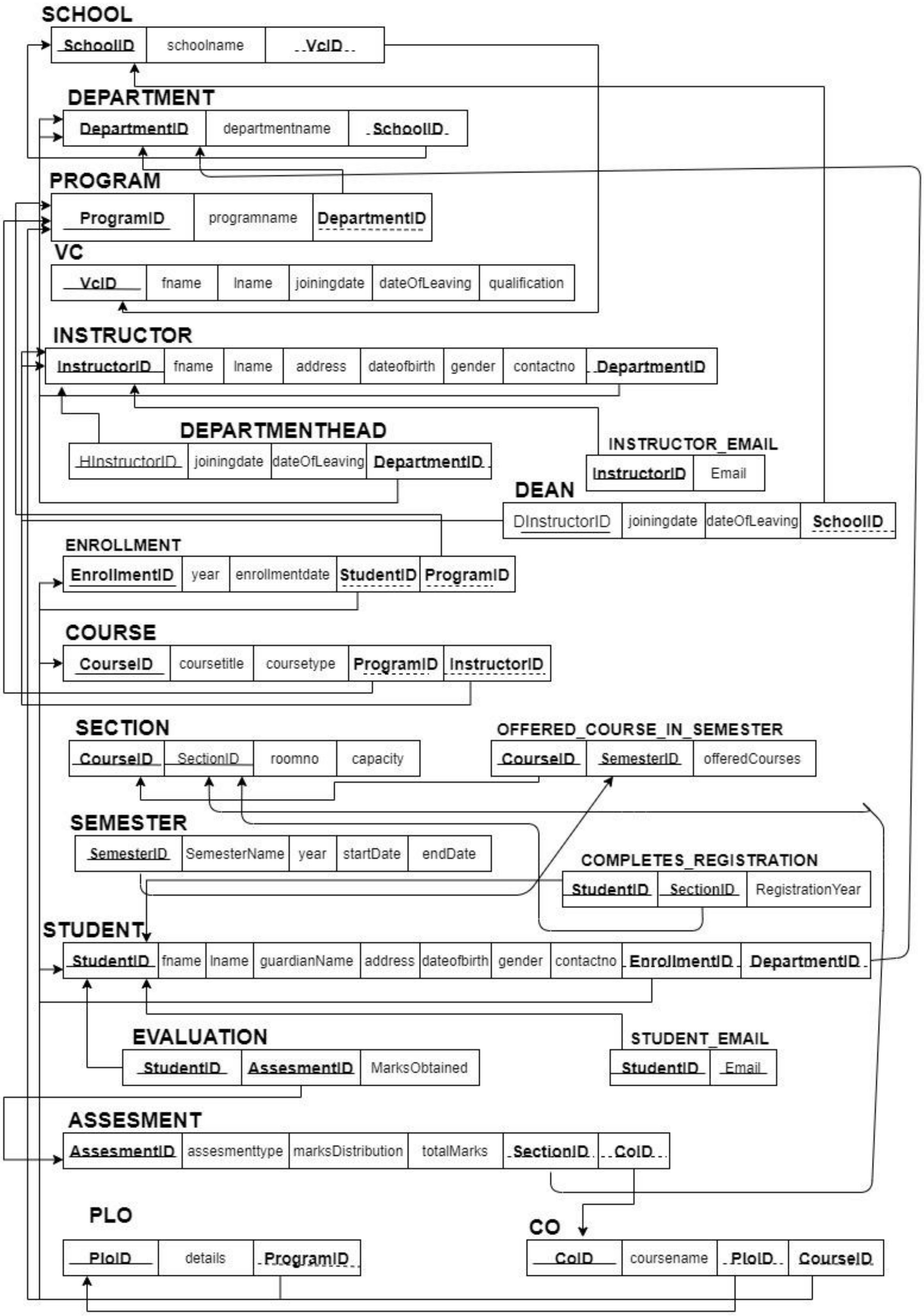
11) A section may have multiple assessments. An assessment must have one exact section.

ENTITY RELATIONSHIP DIAGRAM



ENTITY RELATIONSHIP DIAGRAM

ENTITY RELATIONSHIP DIAGRAM TO RELATIONAL SCHEMA


SCHOOL
SchoolID | schoolname | VcID
DEPARTMENT
DepartmentID | departmentname | SchoolID
PROGRAM
ProgramID | programname | DepartmentID
VC
VcID | fname | lname | joiningdate | dateOfLeaving | qualification
INSTRUCTOR
InstructorID | fname | lname | address | dateofbirth | gender | contactno | DepartmentID
DEPARTMENTHEAD
HInstructorID | joiningdate | dateOfLeaving | DepartmentID
INSTRUCTOR_EMAIL
InstructorID | Email
DEAN
DInstructorID | joiningdate | dateOfLeaving | SchoolID
ENROLLMENT
EnrollmentID | year | enrollmentdate | StudentID | ProgramID
COURSE
CourseID | coursetitle | coursetype | ProgramID | InstructorID
SECTION
CourseID | SectionID | roomno | capacity
OFFERED_COURSE_IN_SEMESTER
CourseID | SemesterID | offeredCourses
SEMESTER
SemesterID | SemesterName | year | startDate | endDate
COMPLETES_REGISTRATION
StudentID | SectionID | RegistrationYear
STUDENT
StudentID | fname | lname | guardianName | address | dateofbirth | gender | contactno | EnrollmentID | DepartmentID
EVALUATION
StudentID | AssesmentID | MarksObtained
STUDENT_EMAIL
StudentID | Email
ASSESMENT
AssesmentID | assesmenttype | marksDistribution | totalMarks | SectionID | CoID
PLO
PloID | details | ProgramID
CO
CoID | coursename | PloID | CourseID

RELATION SCHEMA DIAGRAM

NORMALIZATION

School	SchoolID	s1	Enrollment	enrollemntID	n1
				year	n2
	School name	s2		Enrollment date	n3
	VCID	v1		studentID	t1
				ProgramID	p1
VC	vcID	v1	student	studentID	t1
	Fname	v2		fname	t2
	Iname	v3		iname	t3
	Joining datew	v4		City	t4
	Leaving date	v5		Road	t5
	Qualification	v6		Area	t6
Department	departmentID	d1		Date of birth	t7
	Departmentname	d2		Gender	t8
				Contact no	t9
	schoolID	S1		Nationality	t10
program	programID	p1		enrollmentID	n1
	Program name	p2		departmentID	d1
	departmentID	d1	Assessment	Assessment ID	a1
Instructor	InstructorID	i1		Assessment type	a2
	fname	i2		Marks distribution	a3
	Iname	i3		sectionNO	e1
	City	i4		studentID	t1
	Area	i5		COID	o1
	Road	i6		PLOID	l1
	Date of birth	i7		Student complete assessment	a4
	Gender	i8		Student marks obtained	a5
	Contact no (gmail)	i9	Course	courseID	c1
	DepartmentID	d1		Course title	c2
Department Head	departrmentheadID	h1		Course type	c3
	qualification	h2		programID	p1
	Joining date	h3		InstructorID	i1
	Date of leaving	h4		semesterID	r1
Dean	deanID	x1	Section	sectionNO	e1
	Annual salary	x2		courseID	c1
	Joining date	x3		Room no	e2
	Date of leaving	x4		capacity	e3
				Start time	e4
				End time	e5

PLO	PLOID	l1	Semester	SemesterID	r1
	Details	l2		year	r2
	programID	p1		Start date	r3
CO	COID	o1		End date	r4
	Course name	o2			
	PLOID	l1			

s1->	s 2, v1
v1->	v2,v3,v4,v5,v6
d1->	d2,s1
p1->	p2,d1
i1->	i2,i3,i4,i5,i6,i7,i8,i9,d1
i1,h1->	h2,h3,h4
i1,x1->	x2,x3,x4
n1->	n2,n3,t1,p1
t1->	t2,t3,t4,t5,t6,t7,t8,t9,t10,n1,d1
a1->	a2,a2,a3,a4,a4,e1,t1,o1,l1
c1->	c2,c3,p1,i1,r1
e1->	e2,e3,e4,c1
l1->	l2,p1
o1->	o2,l1
r1->	r2,r3,r4

SchoolID->	School name, VCID
vcID ->	Fname,iname, Joining date, Leaving date, Qualification
departmentID ->	Department name, schoolID
ProgramID->	Program name , departmentID
Instructor ID->	Fname, iname, city, area, road, date of birth, gender , contact no (gmail), departmentID
Instructor Deartment HeadID->	Qualification , joining date , date of leaving
Instructor DeanID->	Annual salary, joining date ,date of leaving
enrollmentID->	Year, enrollment date, studentID, programID
studentID->	Fname,iname,city,road,area,date of birth,gender , contact no(gmail),nationality , enrollmentID, departmentID
Assessment >	Assessment type, marks distribution, sectionNO,, studentID, COID ,PLOID, student complete assessment , student marks distribution
courseID->	Course title, course type, programID, intructorID, semesterID
sectionNO->	courseID, room no, capacity , start time
PLOID->	Details, programID
CO->	Course name , PLOID
SemesterID->	Year, start time, end date

1NF

If a relation that has a primary key and in which there are no repeating groups will be 1nf.

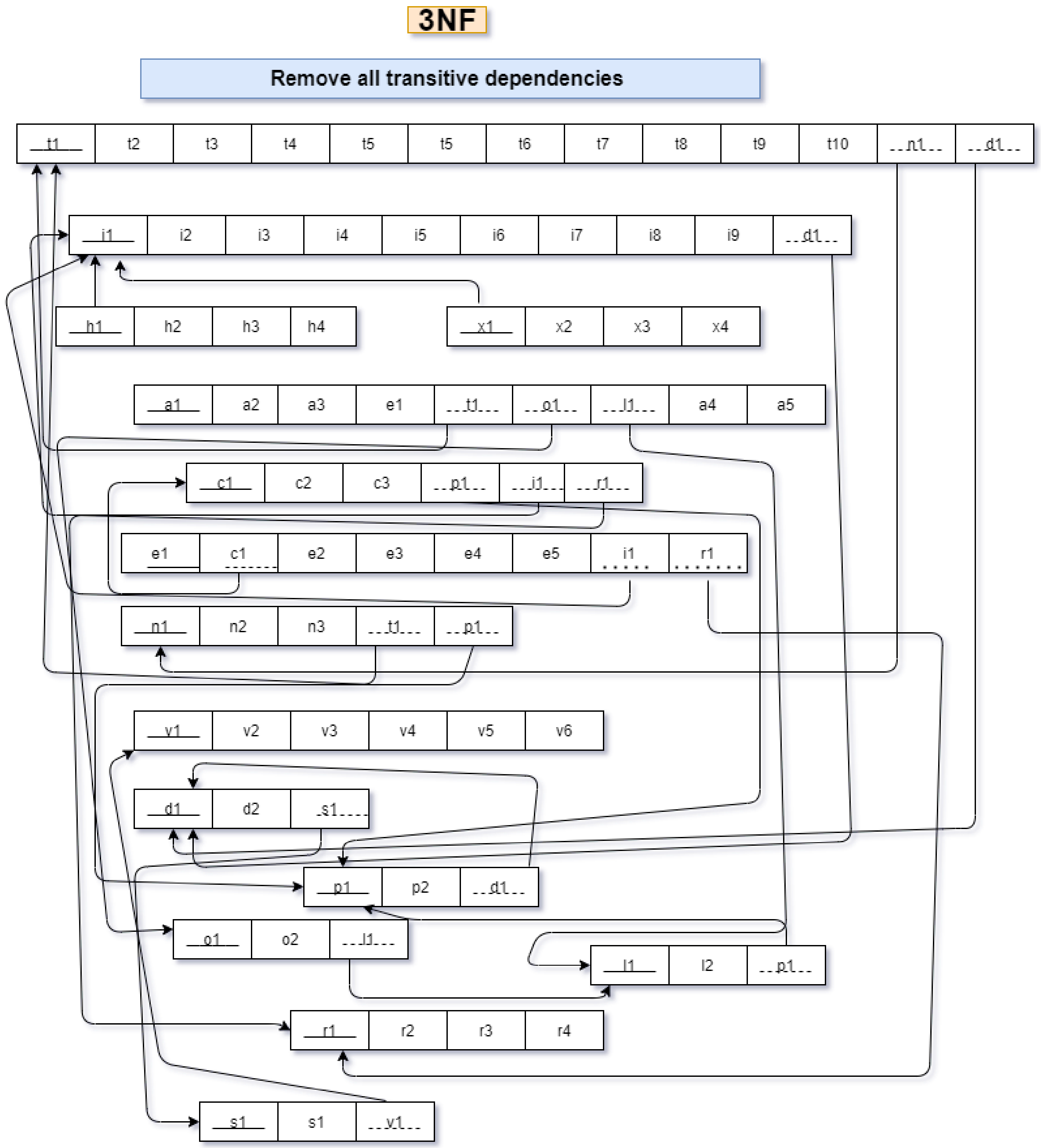
But our functional dependency table and relation have repeating groups and a primary key has not defined so the relation not will be 1nf.

2NF

If a relation in first normal form in which every non key attribute is fully functionally dependent on the primary key and a functional dependency in which one or more non key attributes are functionally dependent on part of the primary key that's time relation will be 2NF.

But our relation not fully dependent on primary key and functional dependency have not any non-key attributes are not functionally dependent on primary key. This relation not also 1NF. So the relation not will be 2NF.

3NF



Each non
key attribute that is a determinant a relation and create a new relation.
That attribute becomes the primary key
of the new relation.

BCNF

Relation which does not have multiple overlapping candidate keys and every determinant is a candidate key is said to be in BCNF.

Each and every functional dependency relation have candidate key and s1, v1, d1, p1, i1, x1, n1, t1, a1, c1, e1, l1, o1, r1 are candidate key identify non key attribute. This relation has not multiple overlapping and no non-key attribute can identify primary key. So all relation in a BCNF.

DATA DICTIONARY

VC_T

Name	DataType	Size	**Remark**
nvcid	Number	7	This is the Primary Key for VC. Example: “19*****”
cname	Text		This is the name of vc Example: “md khan”
djoiningDate	DateTime		This contains the date when vc took charge of his role. Example : “01.01.2016”
dleavingDate	DateTime		This contains the date when vc discharged from his role. Example : “01.01.2020”
cqualification	Text		This contains the qualification of vc Example “ PHD , BSC”

School_T

Name	DataType	Size	**Remark**
cschoolid	Text	5	This is the Primary Key of School Example: “SETS”
Cschoolname	Text		This is the name of the School. Example: “School of Engineering, Technology and Science”
nvcid	Number		This is the foreign key from the VC table. Example: “19*****. “

Department_T

Name	DataType	Size	**Remark**
cdepartmentid	Text		This is the Primary Key of the Department. Example: “EEE”
cdepartmentname	Text		This is the name of the Department. Example: “Computer Science and Engineering”
cschoolid	Text		This is the Foreign Key of the table School. Example: “SETS”

Student_T

Name	DataType	Size	**Remark**
nstudentid	Number		This is the Primary Key for the Student. Example: “1800001”
cname	Text		This is the name of the Student. Example: “Muhammad Akib”
cguardianname	Text		This is the name of the guardian. Example: “Muhammad karim”
caddress	Text		This is the address of the Student. Example: “House 270, Road 6, Block C, Bashundhara, Dhaka, Bangladesh
ddateofbirth	Datetime	“dd/mm/yy”	This the Date of Birth of the Student. Example: “01-01-2000”
cgender	Text		This is the gender of the Student. Example: “M”
ncontactno	Number		This is the phone number of the Student. Example: “0191211141”
cemail	Text		This is the email address of the Faculty. Example: “mahady@iub.edu.bd”

cnationality	Text		This contains nationality of the student Example: “Bangladeshi”
cdepartmentid	Text		This is the Foreign Key from the Department table. Example: “CSE

Instructor_T

Name	DataType	Size	**Remark**
ninstructorid	Number		This is the Primary Key for Faculty. Example: “1501001“
cname	Text		This is the first name of the instructor. Example : “ Abdur Rahim”
caddress	Text		This is the address of the instructor. Example: “House 1, Road 1, Sector 1, Uttara, Dhaka, Bangladesh
ddateofbirth	DateTime	DD-MM-YYYY	This the Date of Birth of the instructor. Example: “01-01-1993”
cgender	Text		This is the gender of the instructor . Example: “F”
ncontactno	Number		This is the phone number of the instructor. Example: “01910101010”
cemail	Text		This is the email address of the **instructor**. Example: “rakib@iub.edu.bd”
cdepartmendid	Text		This is the Foreign Key from the Department table. Example: “CSE”

Departmenthead_T

Name	DataType	Size	**Remark**
djoiningdate	DateTime		This contains the date when a department head took charge of his role Example : “01.01.16”
dleavingdate	DateTime		This contains the date when a department head discharged from his role Example : “01.01.2020”
cdepartmentid	Text		This is the Foreign Key from the Department table. Example: “CSE

Dean_T

Name	DataType	Size	**Remark**
djoiningdate	DateTime		This contains the date when a dean took charge of his role Example : “01.01.2016”
dleavingdate	DateTime		**This contains the date when a dean discharged from his role** Example : “01.01.2020”
cschoolid	Text		This is the Foreign Key from the school table. Example: “SETS”

PLO_T

Name	DataType	Size	Remark
cploid	Text	5	This is the primary key for Program Learning Outcome. Example: “PLO1”
cdetails	Text		This is the details of the Program Learning Outcome. Example: “An ability to select and apply the knowledge, techniques, skills, and modern tools of the computer science and engineering discipline”
cporgramid	Text		This is the foreign key from Program table Example: ”B.Sc”.

CO_T

Name	DataType	Size	**Remark**
ccoid	Text		This is the Primary Key for Course Outcome. Example: “CO1”
cdescription	Text		This is the description of the course
cploid	Text		This is the foreign key from the Program Learning Outcome table. Example: “PLO1”

Enrollement_T

Name	DataType	Size	**Remark**
nenrollmentid	Number		This is the Primary Key for Enrollment Example : “ 1”
dyear	Datetime		This is the year of Enrollment Example: “2017”
denrollmntdate	DateTime	DD-MM-YYYY	This contains the date of the enrollment. Example : 30/01/2021
nstudentid	Number		This is the Foreign key from the Student Table. Example: “1800001”
cprogramid	Text		This is the Foreign Key from Program table Example: ”B.Sc”.

Program_T

Name	DataType	Size	**Remark**
cprogramid	Text		This is the Primary Key for program. Example : “BSC”
cprogramname	Text		This is the name of the program . Example : “Bachelor of Science”
cdepartmentid	Text		This is the Foreign Key from the Department table. Example: “CSE”

Course_T

Name	DataType	Size	Remark
ccourseid	Text		This is the Primary Key for the Course. Example: “CSE203”
ccoursetitle	Text		This is the name of the Course. Example: ”Data Structure”
ccoursetype	Text		This is the type of the Course. Example: “Core”
cprogramid	Text		This is the Foreign Key from Program table Example: ”B.Sc”.

Section_T

Name	DataType	Size	Remark
nsectionid	Number		This is the Primary Key for Section Example :”2"
croomno	Text		This is the room number . Example : “B7107”
ncapacity	Number		This contains the total capacity of a room Example : “50”

Assesment_T

Name	DataType	Size	Remark
nassesmentid	Number		This is the Primary Key for assessment . Example : “1”
cassesmenttype	Text		This is the type of assessment . Example : “Assignment ,Viva”

cmarksdistribution	Text		This contains the marks distribution
Ctotalmarksachievable	Text		This contains how much mark a student can achieve in total . Example : “100”
nsectionid	Number		This is the foreign key from section table Example” 1001”
ccoid	Text		This is the foreign key from the Program Learning Outcome table. Example: “CO1”

Semester_T

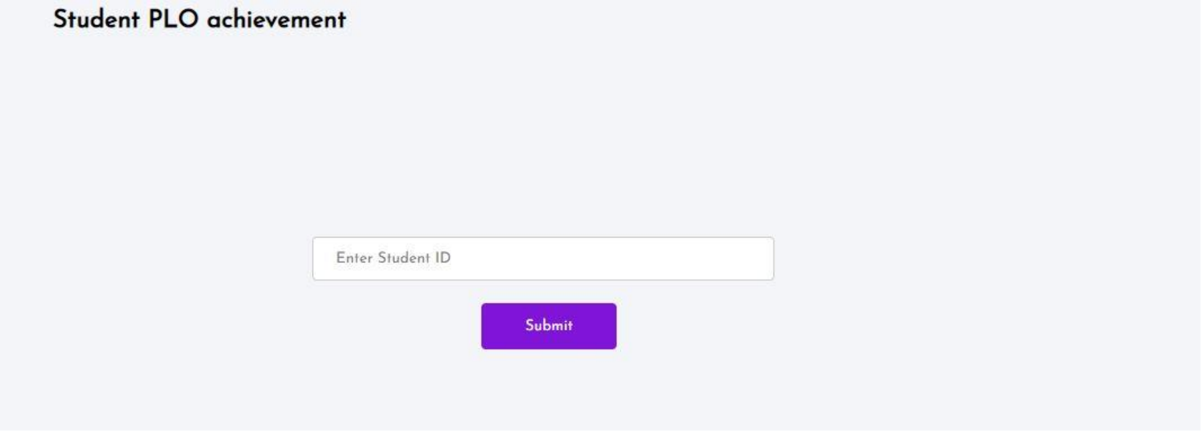
Name	**DataType**	**Size**	**Remark**
nsemesterid	Number		This is the Primary Key for semester Example:1
csemesterName	Text		This is the name of the semester Example: “Fall”
dyear	DateTime		This contains the year of that semester . Example :” 2021”
dstartdate	DateTime		This is the starting date of the semester . Example : “15.02.21”
denddate	DateTime		This is the ending date of the semester . Example : “10.05.21”

CHAPTER 4

PHYSICAL SYSTEM DESIGN

INPUT FORMS
OUTPUT GRAPHS

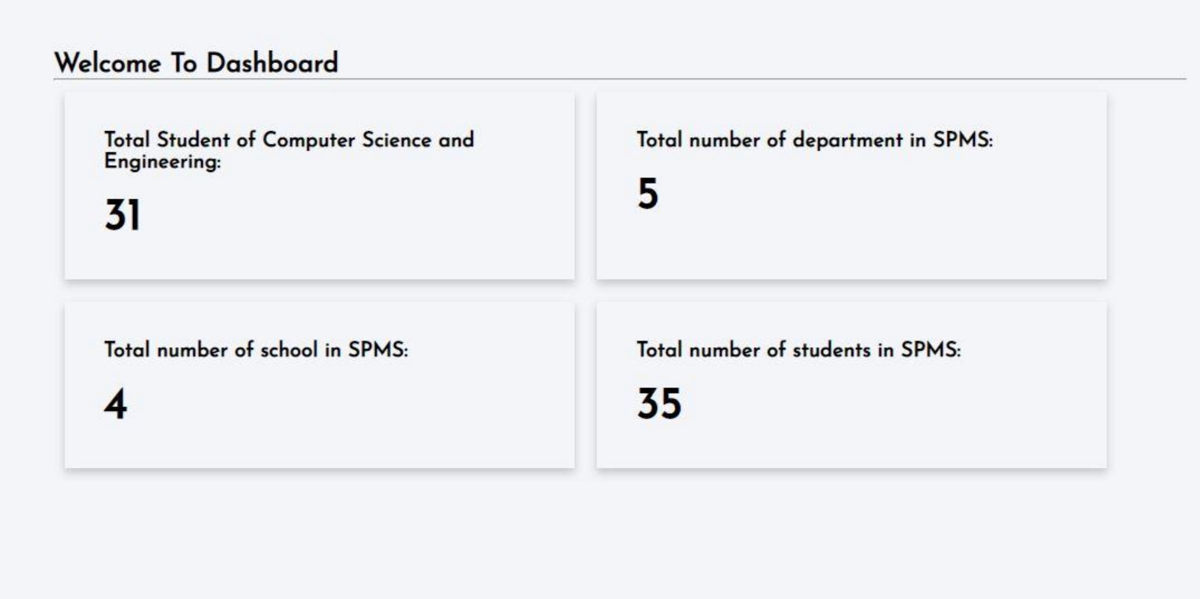
INPUT FORMS



Student PLO achievement

```
<form name="register" action="table.php" method="post">
      <input type="text" name="first"   placeholder="Enter Student ID"/>
      <input type="submit" name="submit" value="Submit" />
</form>
```

OUTPUT TABLES & GRAPHS



Welcome To Dashboard

Total Student of Computer Science and Engineering:

31

Total number of department in SPMS:

5

Total number of school in SPMS:

4

Total number of students in SPMS:

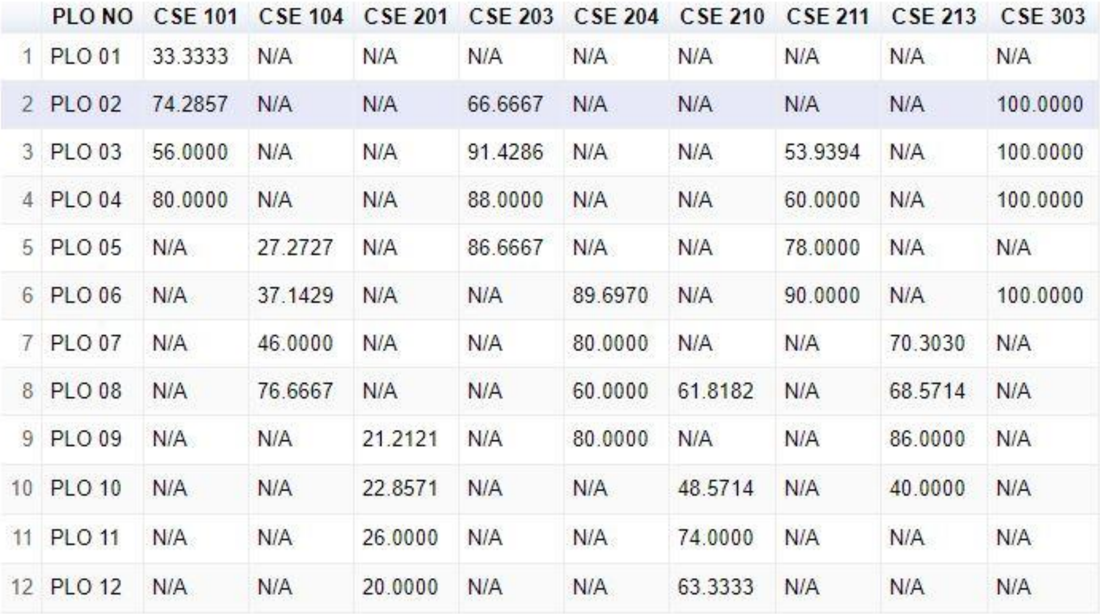
35

Dashboard

```
<?php
$con = mysqli_connect("localhost", "root", "", "spms");
$sql = '
  SELECT
    COUNT(student.StudentID) AS total
  FROM student
  INNER JOIN
    department ON department.DepartmentID = student.DepartmentID
  INNER JOIN
    school ON school.SchoolID = department.SchoolID
  WHERE school.SchoolName = "School of Computer Science and Engineering"';
$fire = mysqli_query($con, $sql);

$result = mysqli_fetch_assoc($fire);
echo $result['total'];
?>
```

```
 <?php
 $con = mysqli_connect("localhost", "root", "", "spms");
 $sql = '
   SELECT
    COUNT(department.DepartmentID) AS total
   FROM department
   WHERE 1';
 $fire = mysqli_query($con, $sql);

 $result = mysqli_fetch_assoc($fire);
 echo $result['total'];
 ?>
<?php
 $con = mysqli_connect("localhost", "root", "", "spms");
 $sql = '
   SELECT
    COUNT(school.SchoolID) AS total
   FROM school
   WHERE 1';
 $fire = mysqli_query($con, $sql);

 $result = mysqli_fetch_assoc($fire);
 echo $result['total'];
 ?>
 <?php
 $con = mysqli_connect("localhost", "root", "", "spms");
 $sql = '
   SELECT
    COUNT(student.StudentID) AS total
   FROM student
   WHERE 1';
 $fire = mysqli_query($con, $sql);
```

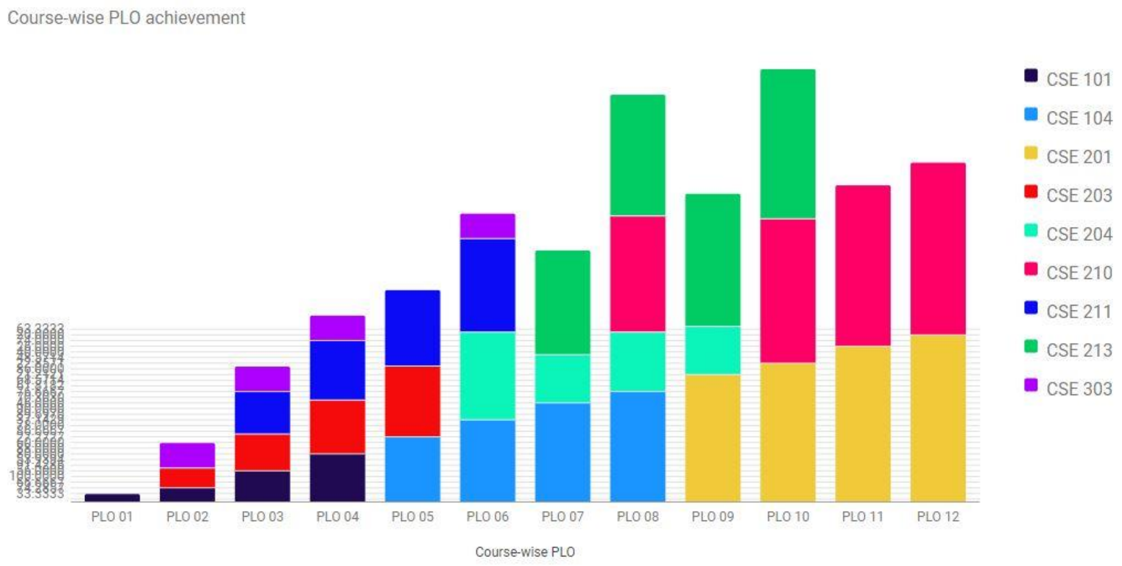
```
$result = mysqli_fetch_assoc($fire);

echo $result['total'];

?>
```



	PLO NO	CSE 101	CSE 104	CSE 201	CSE 203	CSE 204	CSE 210	CSE 211	CSE 213	CSE 303
1	PLO 01	33.3333	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	PLO 02	74.2857	N/A	N/A	66.6667	N/A	N/A	N/A	N/A	100.0000
3	PLO 03	56.0000	N/A	N/A	91.4286	N/A	N/A	53.9394	N/A	100.0000
4	PLO 04	80.0000	N/A	N/A	88.0000	N/A	N/A	60.0000	N/A	100.0000
5	PLO 05	N/A	27.2727	N/A	86.6667	N/A	N/A	78.0000	N/A	N/A
6	PLO 06	N/A	37.1429	N/A	N/A	89.6970	N/A	90.0000	N/A	100.0000
7	PLO 07	N/A	46.0000	N/A	N/A	80.0000	N/A	N/A	70.3030	N/A
8	PLO 08	N/A	76.6667	N/A	N/A	60.0000	61.8182	N/A	68.5714	N/A
9	PLO 09	N/A	N/A	21.2121	N/A	80.0000	N/A	N/A	86.0000	N/A
10	PLO 10	N/A	N/A	22.8571	N/A	N/A	48.5714	N/A	40.0000	N/A
11	PLO 11	N/A	N/A	26.0000	N/A	N/A	74.0000	N/A	N/A	N/A
12	PLO 12	N/A	N/A	20.0000	N/A	N/A	63.3333	N/A	N/A	N/A

Course Wise PLO Achievement

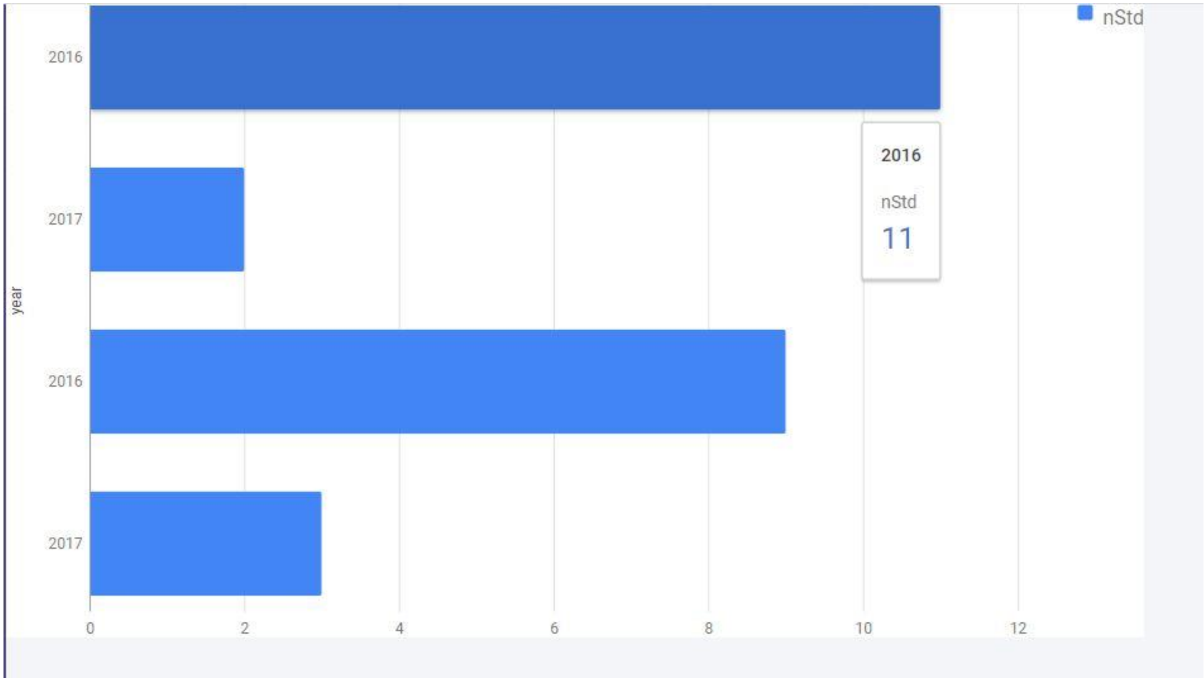
```
<?php

$conn = mysqli_connect("localhost", "root","","spms");

$sql = "SELECT co.CourseID, co.CoNo, plo.PloNO,(PLO/TotalCoMark * 100) AS PLO
percentage

FROM co,plo, (

SELECT co.CourseID, co.CoNo, co.PloID, evaluation.Obtainedmarks AS PLO,
assessment.Marks AS TotalCoMark

FROM co,evaluation,assessment,plo,registration

WHERE registration.StudentID='1722006'
AND registration.RegistrationID=evaluation.RegistrationID
AND evaluation.AssessmentID=assessment.AssessmentNo
AND assessment.CoID=co.CoID
AND co.PloID=plo.PloNO
GROUP BY registration.SectionID, co.PloID) coursewisePLO

WHERE co.CoNo=coursewisePLO.CoNo
AND plo.PloNO=coursewisePLO.PloID
AND co.CourseID=coursewisePLO.CourseID
ORDER BY coursewisePLO.PloID, coursewisePLO.CourseID";

$result = mysqli_query($conn, $sql);

$output = mysqli_fetch_all($result);
$table = array(
    array('PLO 01', $output[0][3], 'N/A', 'N/A','N/A', 'N/A', 'N/A', 'N/A', '
N/A', 'N/A'),
    array('PLO 02', $output[1][3], 'N/A', 'N/A', $output[2][3], 'N/A', 'N/A',
 'N/A', 'N/A', $output[3][3]),
    array('PLO 03', $output[4][3], 'N/A', 'N/A', $output[5][3], 'N/A', 'N/A',
 $output[6][3], 'N/A', $output[7][3]),
    array('PLO 04', $output[8][3], 'N/A', 'N/A', $output[9][3], 'N/A', 'N/A',
 $output[10][3], 'N/A', $output[11][3]),
    array('PLO 05', 'N/A', $output[12][3], 'N/A', $output[13][3], 'N/A', 'N/A
', $output[14][3], 'N/A', 'N/A'),
    array('PLO 06', 'N/A', $output[15][3], 'N/A', 'N/A', $output[16][3], 'N/A
', $output[17][3], 'N/A', $output[18][3]),
    array('PLO 07', 'N/A', $output[19][3], 'N/A', 'N/A', $output[20][3], 'N/A
', 'N/A', $output[21][3], 'N/A'),
    array('PLO 08', 'N/A', $output[22][3], 'N/A', 'N/A', $output[23][3], $out
put[24][3], 'N/A', $output[25][3], 'N/A'),
    array('PLO 09', 'N/A', 'N/A', $output[26][3], 'N/A', $output[27][3], 'N/A
', 'N/A', $output[28][3], 'N/A'),
    array('PLO 10', 'N/A', 'N/A', $output[29][3], 'N/A', 'N/A', $output[30][3
], 'N/A', $output[31][3], 'N/A'),
    array('PLO 11', 'N/A', 'N/A', $output[32][3], 'N/A', 'N/A', $output[33][3
], 'N/A', 'N/A', 'N/A'),
    array('PLO 12', 'N/A', 'N/A', $output[34][3], 'N/A', 'N/A', $output[35][3
], 'N/A', 'N/A', 'N/A'),
);

?>
```



Course wise PLO achievement

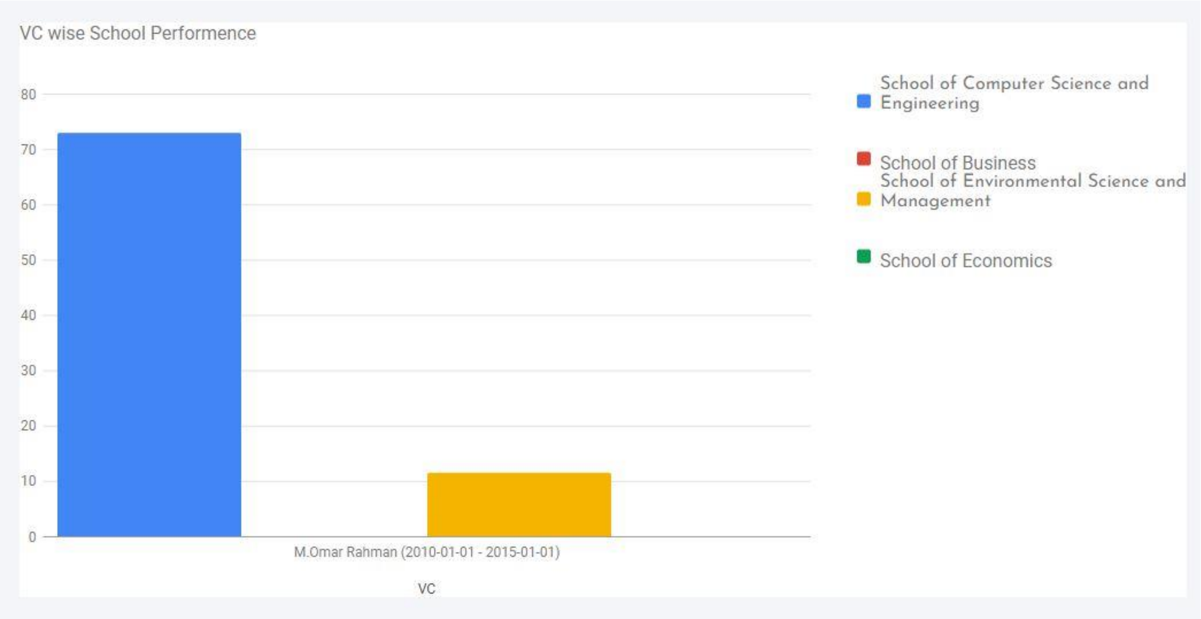
```
<?php

$con = mysqli_connect("localhost", "root", "", "spms");
$sql = '
    SELECT
      COUNT(student.StudentID) AS total
    FROM student
    INNER JOIN
      department ON department.DepartmentID = student.DepartmentID
    INNER JOIN
      school ON school.SchoolID = department.SchoolID
    WHERE school.SchoolName = "School of Computer Science and Engineering"';
$fire = mysqli_query($con, $sql);

$result = mysqli_fetch_assoc($fire);
echo $result['total'];
?>
<?php
$con = mysqli_connect("localhost", "root", "", "spms");
$sql = '
    SELECT
      COUNT(department.DepartmentID) AS total
    FROM department
    WHERE 1';
$fire = mysqli_query($con, $sql);
```

```
  $result = mysqli_fetch_assoc($fire);
  echo $result['total'];
  ?>

<?php
  $con = mysqli_connect("localhost", "root", "", "spms");
  $sql = '
      SELECT
        COUNT(school.SchoolID) AS total
      FROM school
      WHERE 1';
  $fire = mysqli_query($con, $sql);

  $result = mysqli_fetch_assoc($fire);
  echo $result['total'];
  ?>

  <?php
  $con = mysqli_connect("localhost", "root", "", "spms");
  $sql = '
      SELECT
        COUNT(student.StudentID) AS total
      FROM student
      WHERE 1';
  $fire = mysqli_query($con, $sql);

  $result = mysqli_fetch_assoc($fire);
  echo $result['total'];
  ?>
```



Program wise student Enrollment

```
          <?php
          $sql = "SELECT count(student.studentId) as nStd,program_enrollment.
enrollmentYear, semester.semesterId, program.programId, program.programName
          from student
          inner join program_enrollment on student.studentId=program_enrollme
nt.studentId
          inner join program on program_enrollment.programId=program.programI
d
          inner join semester on program_enrollment.semesterId=semester.semes
terId
          where program_enrollment.enrollmentYear in ('2016','2017') and prog
ram.programId in ('1','2')
          group by program.programId,program_enrollment.enrollmentYear";
          $fire = mysqli_query($con, $sql);
          while ($result = mysqli_fetch_assoc($fire)) {
            echo "['" . $result['enrollmentYear'] . "'," . $result['nStd'] .
"],";
          }
          ?>
```



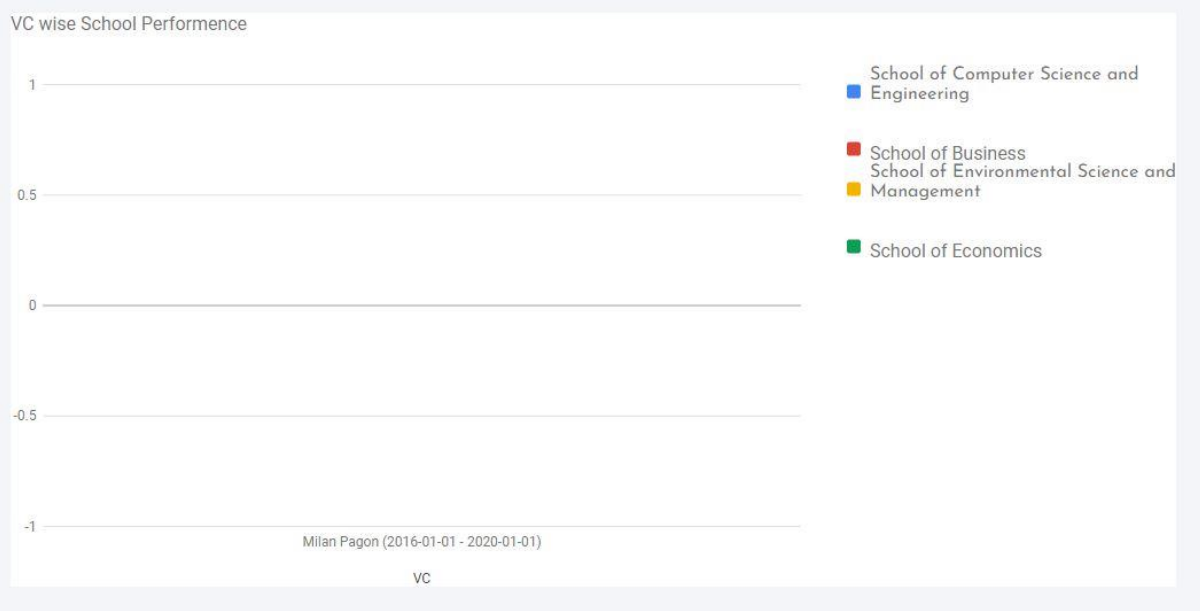
VC wise School Performance

```
 <?php
   $barchartdata = "";
   $count = 0;
   $sum = 0;
   $gpa = 0;
   $cgpa = 0;
   $sql_id= "SELECT * FROM `student`";
   $sql_school= "SELECT * FROM `school`";

   $vc_id = 1;
   $barchartdata .="[ 'M.Omar Rahman (2010-01-01 - 2015-01-01)' ,";
   $fire_school = mysqli_query($con, $sql_school);
   while ($result_school = mysqli_fetch_array($fire_school)) {
       $SchoolName = "".$result_school['SchoolName']."";
       $fire_id = mysqli_query($con, $sql_id);
       while ($result_id = mysqli_fetch_array($fire_id)) {
           $StudentID = $result_id['StudentID'];
```

```
$sql = '

SELECT

  student.Name,student.StudentID, (evaluation.Obtainedmarks / assessment.Marks)*100 AS FinalMark , semester.SemesterName

FROM

    evaluation

INNER JOIN

    assessment ON assessment.AssessmentNo = evaluation.AssessmentID

INNER JOIN

    student ON student.StudentID = evaluation.StudentID

INNER JOIN

    section ON section.SectionID = assessment.SectionID

INNER JOIN

    semester ON semester.SemesterID = section.SemesterID

INNER JOIN

    department ON department.DepartmentID = student.DepartmentID

INNER JOIN

    school ON school.SchoolID = department.SchoolID

INNER JOIN

    vc ON vc.VcID = school.VcID

WHERE student.StudentID = '.$StudentID." AND school.SchoolName = ".$SchoolName."AND vc.VcID = ".$vc_id;


$fire = mysqli_query($con, $sql);

$rows = mysqli_num_rows($fire);

if($rows == 0){


}

else{

    while ($result = mysqli_fetch_assoc($fire)) {

        $GradePoint = 0;

        $Grade = ";
```

```
if($result['FinalMark'] >= 85 &&  $result['FinalMark'] <= 100){
    $GradePoint = 4.0;
    $Grade =  "A";
}
elseif($result['FinalMark'] >= 80 &&  $result['FinalMark'] <= 85){
    $GradePoint = 3.7;
    $Grade = "A-";
}
elseif($result['FinalMark'] >= 75 &&  $result['FinalMark'] <= 80){
    $GradePoint = 3.3;
    $Grade = "B+";
}
elseif($result['FinalMark'] >= 70 &&  $result['FinalMark'] <= 75){
    $GradePoint = 3.0;
    $Grade = "B";
}
elseif($result['FinalMark'] >= 65 &&  $result['FinalMark'] <= 70){
    $GradePoint = 2.7;
    $Grade = "B-";
}
elseif($result['FinalMark'] >= 60 &&  $result['FinalMark'] <= 65){
    $GradePoint = 2.3;
    $Grade = "C+";
}
elseif($result['FinalMark'] >= 55 &&  $result['FinalMark'] <= 60){
    $GradePoint = 2.0;
    $Grade = "C";
}
elseif($result['FinalMark'] >= 50 &&  $result['FinalMark'] <= 55){
    $GradePoint = 1.7;
    $Grade = "C-";
}
```

```
          elseif($result['FinalMark'] >= 45 &&  $result['FinalMark'] <= 50){
            $GradePoint = 1.3;
            $Grade = "D+";
          }
          elseif($result['FinalMark'] >= 40 &&  $result['FinalMark'] <= 45){
            $GradePoint = 1.0;
            $Grade = "D";
          }
          elseif($result['FinalMark'] >= 0 &&  $result['FinalMark'] <= 40){
            $GradePoint = 0.0;
            $Grade = "F";

          }
          $sum += $GradePoint;
        }
        $gpa = $sum/$rows;
        $cgpa += $gpa;
        $sum = 0;
        $gpa = 0;

      }
    }
    $barchartdata .= $cgpa.",";
    $cgpa = 0;
  }
  $barchartdata .="],";
 ?>
    <?php
```



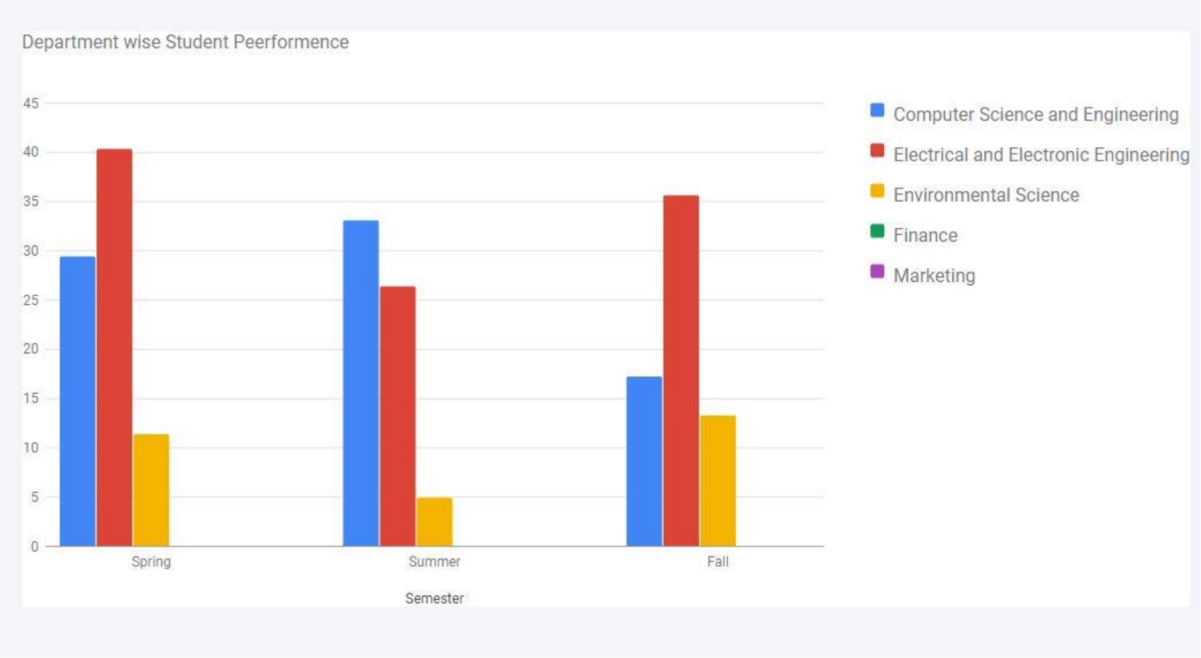
VC wise school performance

```
 <?php
   $barchartdata = "";
   $count = 0;
   $sum = 0;
   $gpa = 0;
   $cgpa = 0;
   $sql_id= "SELECT * FROM `student`";
   $sql_school= "SELECT * FROM `school`";

   $vc_id = 2;
   $barchartdata .="[ 'Milan Pagon (2016-01-01 - 2020-01-01)' ,";
   $fire_school = mysqli_query($con, $sql_school);
   while ($result_school = mysqli_fetch_array($fire_school)) {
      $SchoolName = "".$result_school['SchoolName']."";
      $fire_id = mysqli_query($con, $sql_id);
      while ($result_id = mysqli_fetch_array($fire_id)) {
         $StudentID = $result_id['StudentID'];
         $sql = '
         SELECT
```

```
            student.Name,student.StudentID, (evaluation.Obtainedmarks / assessment.Marks)*100 AS
FinalMark , semester.SemesterName

        FROM

          evaluation

        INNER JOIN

          assessment ON assessment.AssessmentNo = evaluation.AssessmentID

        INNER JOIN

          student ON student.StudentID = evaluation.StudentID

        INNER JOIN

          section ON section.SectionID = assessment.SectionID

        INNER JOIN

          semester ON semester.SemesterID = section.SemesterID

        INNER JOIN

          department ON department.DepartmentID = student.DepartmentID

        INNER JOIN

          school ON school.SchoolID = department.SchoolID

        INNER JOIN

          vc ON vc.VcID = school.VcID

        WHERE student.StudentID = '.$StudentID." AND school.SchoolName = ".$SchoolName."AND
vc.VcID = ".$vc_id;


        $fire = mysqli_query($con, $sql);

        $rows = mysqli_num_rows($fire);

        if($rows == 0){


        }

        else{

          while ($result = mysqli_fetch_assoc($fire)) {

            $GradePoint = 0;

            $Grade = '';

            if($result['FinalMark'] >= 85 &&  $result['FinalMark'] <= 100){

              $GradePoint = 4.0;
```

```
    $Grade =  "A";
}
elseif($result['FinalMark'] >= 80 &&  $result['FinalMark'] <= 85){
    $GradePoint = 3.7;
    $Grade = "A-";
}
elseif($result['FinalMark'] >= 75 &&  $result['FinalMark'] <= 80){
    $GradePoint = 3.3;
    $Grade = "B+";
}
elseif($result['FinalMark'] >= 70 &&  $result['FinalMark'] <= 75){
    $GradePoint = 3.0;
    $Grade = "B";
}
elseif($result['FinalMark'] >= 65 &&  $result['FinalMark'] <= 70){
    $GradePoint = 2.7;
    $Grade = "B-";
}
elseif($result['FinalMark'] >= 60 &&  $result['FinalMark'] <= 65){
    $GradePoint = 2.3;
    $Grade = "C+";
}
elseif($result['FinalMark'] >= 55 &&  $result['FinalMark'] <= 60){
    $GradePoint = 2.0;
    $Grade = "C";
}
elseif($result['FinalMark'] >= 50 &&  $result['FinalMark'] <= 55){
    $GradePoint = 1.7;
    $Grade = "C-";
}
elseif($result['FinalMark'] >= 45 &&  $result['FinalMark'] <= 50){
    $GradePoint = 1.3;
```

```
                $Grade = "D+";
            }
            elseif($result['FinalMark'] >= 40 &&  $result['FinalMark'] <= 45){
                $GradePoint = 1.0;
                $Grade = "D";
            }
            elseif($result['FinalMark'] >= 0 &&  $result['FinalMark'] <= 40){
                $GradePoint = 0.0;
                $Grade = "F";

            }
            $sum += $GradePoint;
        }
        $gpa = $sum/$rows;
        $cgpa += $gpa;
        $sum = 0;
        $gpa = 0;

    }
  }
  $barchartdata .= $cgpa.",";
  $cgpa = 0;
 }
 $barchartdata .="],";
?>
```



Department Wise Student Performance

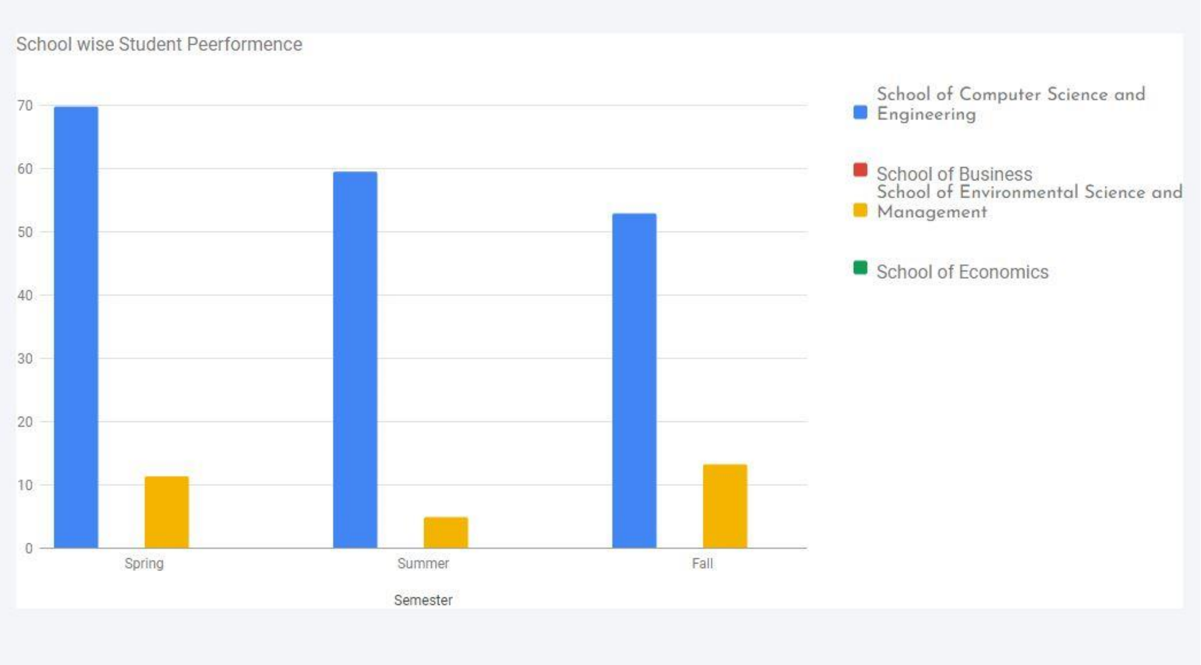
```
 <?php
   $barchartdata = "";
   $count = 0;
   $sum = 0;
   $gpa = 0;
   $cgpa = 0;
   $sql_id= "SELECT * FROM `student`";
   $sql_semester= "SELECT * FROM `semester`";
   $sql_department= "SELECT * FROM `department`";


   $fire_semester = mysqli_query($con, $sql_semester);
   while ($result_semester = mysqli_fetch_array($fire_semester)) {
     $SemesterName = "'".$result_semester['SemesterName']."'";


     $barchartdata .="[".$SemesterName.",";
     $fire_department = mysqli_query($con, $sql_department);
     while ($result_department = mysqli_fetch_array($fire_department)) {
       $DepartmentName = "'".$result_department['DepartmentName']."'";
```

```
    $fire_id = mysqli_query($con, $sql_id);

    while ($result_id = mysqli_fetch_array($fire_id)) {

      $StudentID = $result_id['StudentID'];

      $sql = '

      SELECT

          student.Name,student.StudentID, (evaluation.Obtainedmarks / assessment.Marks)*100 AS
FinalMark , semester.SemesterName

      FROM

          evaluation

      INNER JOIN

          assessment ON assessment.AssessmentNo = evaluation.AssessmentID

      INNER JOIN

          student ON student.StudentID = evaluation.StudentID

      INNER JOIN

          section ON section.SectionID = assessment.SectionID

      INNER JOIN

          semester ON semester.SemesterID = section.SemesterID

      INNER JOIN

          department ON department.DepartmentID = student.DepartmentID

      WHERE semester.SemesterName = '.$SemesterName." AND student.StudentID =
".$StudentID." AND department.DepartmentName = ".$DepartmentName;


      $fire = mysqli_query($con, $sql);

      $rows = mysqli_num_rows($fire);

      if($rows == 0){


      }

      else{

        while ($result = mysqli_fetch_assoc($fire)) {

            $GradePoint = 0;

            $Grade = '';
```

```
if($result['FinalMark'] >= 85 &&  $result['FinalMark'] <= 100){
    $GradePoint = 4.0;
    $Grade =  "A";
}
elseif($result['FinalMark'] >= 80 &&  $result['FinalMark'] <= 85){
    $GradePoint = 3.7;
    $Grade = "A-";
}
elseif($result['FinalMark'] >= 75 &&  $result['FinalMark'] <= 80){
    $GradePoint = 3.3;
    $Grade = "B+";
}
elseif($result['FinalMark'] >= 70 &&  $result['FinalMark'] <= 75){
    $GradePoint = 3.0;
    $Grade = "B";
}
elseif($result['FinalMark'] >= 65 &&  $result['FinalMark'] <= 70){
    $GradePoint = 2.7;
    $Grade = "B-";
}
elseif($result['FinalMark'] >= 60 &&  $result['FinalMark'] <= 65){
    $GradePoint = 2.3;
    $Grade = "C+";
}
elseif($result['FinalMark'] >= 55 &&  $result['FinalMark'] <= 60){
    $GradePoint = 2.0;
    $Grade = "C";
}
elseif($result['FinalMark'] >= 50 &&  $result['FinalMark'] <= 55){
    $GradePoint = 1.7;
    $Grade = "C-";
}
```

```
       elseif($result['FinalMark'] >= 45 &&  $result['FinalMark'] <= 50){
         $GradePoint = 1.3;
         $Grade = "D+";
       }
       elseif($result['FinalMark'] >= 40 &&  $result['FinalMark'] <= 45){
         $GradePoint = 1.0;
         $Grade = "D";
       }
       elseif($result['FinalMark'] >= 0 &&  $result['FinalMark'] <= 40){
         $GradePoint = 0.0;
         $Grade = "F";
       }
       $sum += $GradePoint;
     }
     $gpa = $sum/$rows;
     $cgpa += $gpa;
     $sum = 0;
     $gpa = 0;
    }
   }
   $barchartdata .= $cgpa.",";
   $cgpa = 0;
  }
  $barchartdata .="],";
 }
?>
```

Dashboard



School wise student Performance

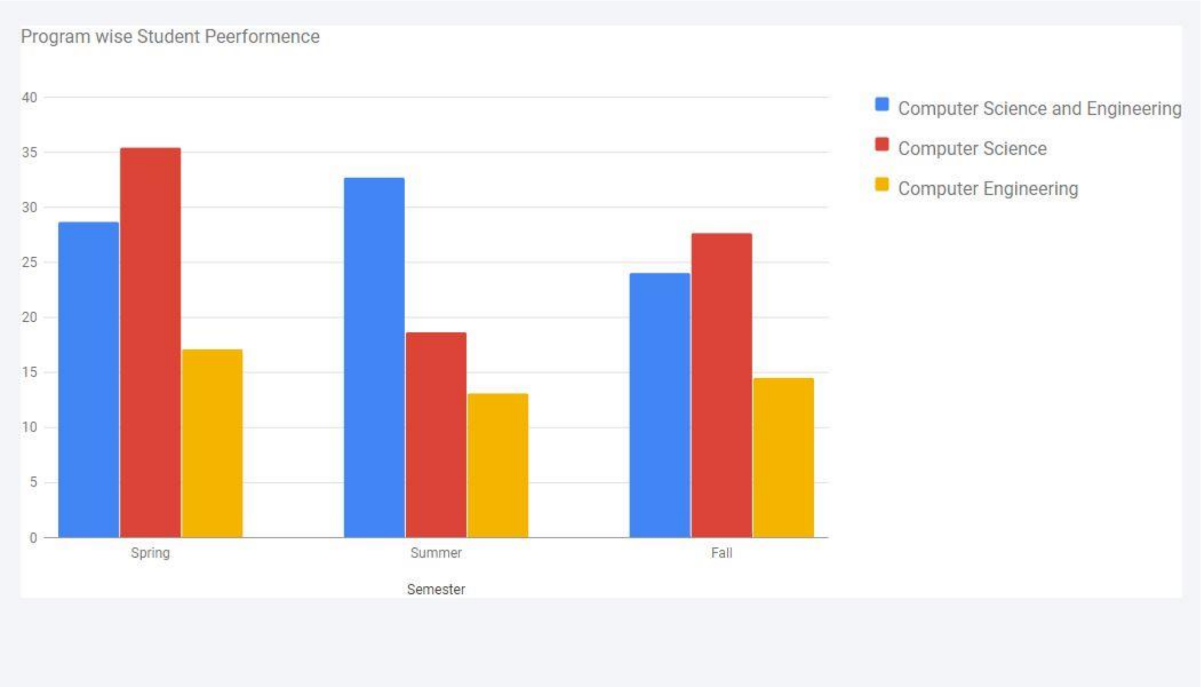
```
<?php
  $barchartdata = "";
  $count = 0;
  $sum = 0;
  $gpa = 0;
  $cgpa = 0;
  $sql_id= "SELECT * FROM `student`";
  $sql_semester= "SELECT * FROM `semester`";
  $sql_school= "SELECT * FROM `school`";

  $fire_semester = mysqli_query($con, $sql_semester);
  while ($result_semester = mysqli_fetch_array($fire_semester)) {
    $SemesterName = "'".$result_semester['SemesterName']."'";

    $barchartdata .="[".$SemesterName.",";
    $fire_school = mysqli_query($con, $sql_school);
    while ($result_school = mysqli_fetch_array($fire_school)) {
```

```
    $SchoolName = "'".$result_school['SchoolName']."'";


    $fire_id = mysqli_query($con, $sql_id);

    while ($result_id = mysqli_fetch_array($fire_id)) {

     $StudentID = $result_id['StudentID'];

     $sql = '

     SELECT

         student.Name,student.StudentID, (evaluation.Obtainedmarks / assessment.Marks)*100 AS FinalMark , semester.SemesterName

     FROM

         evaluation

     INNER JOIN

         assessment ON assessment.AssessmentNo = evaluation.AssessmentID

     INNER JOIN

         student ON student.StudentID = evaluation.StudentID

     INNER JOIN

         section ON section.SectionID = assessment.SectionID

     INNER JOIN

         semester ON semester.SemesterID = section.SemesterID

     INNER JOIN

         department ON department.DepartmentID = student.DepartmentID

     INNER JOIN

         school ON school.SchoolID = department.SchoolID

     WHERE semester.SemesterName = '.$SemesterName." AND student.StudentID = ".$StudentID." AND school.SchoolName = ".$SchoolName;


     $fire = mysqli_query($con, $sql);

     $rows = mysqli_num_rows($fire);

     if($rows == 0){


     }

     else{
```

```
while ($result = mysqli_fetch_assoc($fire)) {
    $GradePoint = 0;
    $Grade = '';
    if($result['FinalMark'] >= 85 &&  $result['FinalMark'] <= 100){
        $GradePoint = 4.0;
        $Grade =  "A";
    }
    elseif($result['FinalMark'] >= 80 &&  $result['FinalMark'] <= 85){
        $GradePoint = 3.7;
        $Grade = "A-";
    }
    elseif($result['FinalMark'] >= 75 &&  $result['FinalMark'] <= 80){
        $GradePoint = 3.3;
        $Grade = "B+";
    }
    elseif($result['FinalMark'] >= 70 &&  $result['FinalMark'] <= 75){
        $GradePoint = 3.0;
        $Grade = "B";
    }
    elseif($result['FinalMark'] >= 65 &&  $result['FinalMark'] <= 70){
        $GradePoint = 2.7;
        $Grade = "B-";
    }
    elseif($result['FinalMark'] >= 60 &&  $result['FinalMark'] <= 65){
        $GradePoint = 2.3;
        $Grade = "C+";
    }
    elseif($result['FinalMark'] >= 55 &&  $result['FinalMark'] <= 60){
        $GradePoint = 2.0;
        $Grade = "C";
    }
    elseif($result['FinalMark'] >= 50 &&  $result['FinalMark'] <= 55){
            $GradePoint = 1.7;
            $Grade = "C-";
          }
          elseif($result['FinalMark'] >= 45 &&  $result['FinalMark'] <= 50){
            $GradePoint = 1.3;
            $Grade = "D+";
          }
          elseif($result['FinalMark'] >= 40 &&  $result['FinalMark'] <= 45){
            $GradePoint = 1.0;
            $Grade = "D";
          }
          elseif($result['FinalMark'] >= 0 &&  $result['FinalMark'] <= 40){
            $GradePoint = 0.0;
            $Grade = "F";
          }
          $sum += $GradePoint;
        }
        $gpa = $sum/$rows;
        $cgpa += $gpa;
        $sum = 0;
        $gpa = 0;
       }
      }
      $barchartdata .= $cgpa.",";
      $cgpa = 0;
    }
    $barchartdata .="],";
  }
 ?>
```

Dashboard

Dashboard

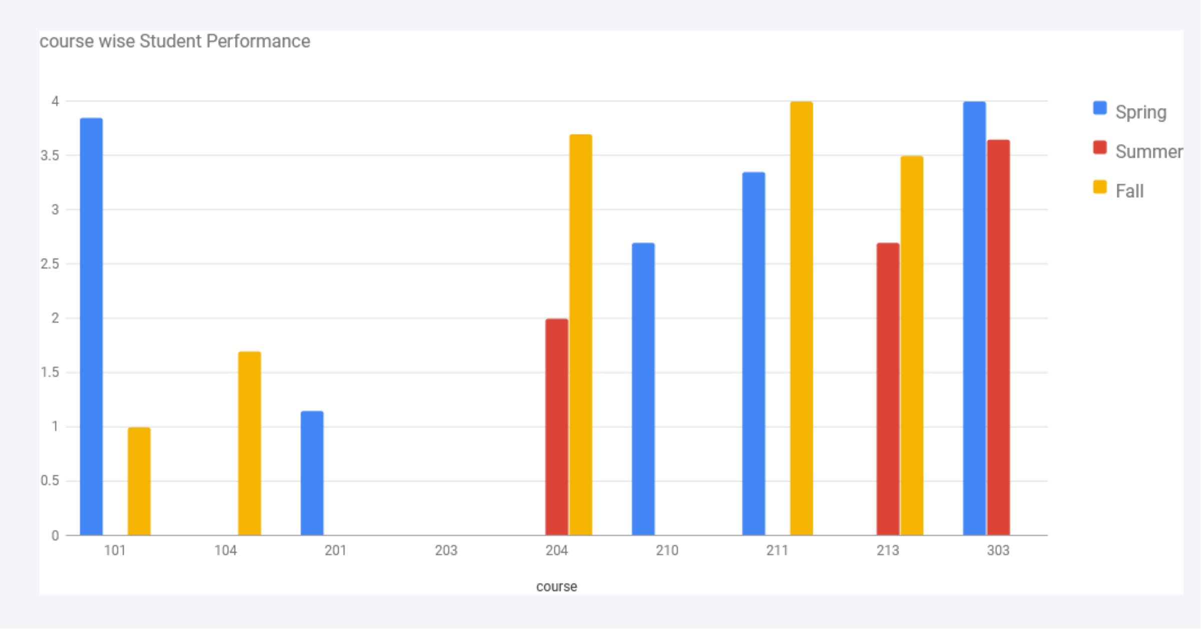


Program wise student Performance

```
  <?php
    $barchartdata = "";
    $count = 0;
    $sum = 0;
    $gpa = 0;
    $cgpa = 0;
    $sql_id= "SELECT * FROM `student`";
    $sql_semester= "SELECT * FROM `semester`";
    $sql_program= "SELECT * FROM `program`";

    $fire_semester = mysqli_query($con, $sql_semester);
    while ($result_semester = mysqli_fetch_array($fire_semester)) {
      $SemesterName = "'".$result_semester['SemesterName']."'";

      $barchartdata .="[".$SemesterName.",";
      $fire_program = mysqli_query($con, $sql_program);
      while ($result_program = mysqli_fetch_array($fire_program)) {
        $ProgramName = "'".$result_program['ProgramName']."'";
    $fire_id = mysqli_query($con, $sql_id);
    while ($result_id = mysqli_fetch_array($fire_id)) {
      $StudentID = $result_id['StudentID'];
      $sql = '
      SELECT
          student.Name,student.StudentID, (evaluation.Obtainedmarks / assessment.Marks)*100 AS FinalMark , semester.SemesterName
      FROM
          evaluation
      INNER JOIN
          assessment ON assessment.AssessmentNo = evaluation.AssessmentID
      INNER JOIN
          student ON student.StudentID = evaluation.StudentID
      INNER JOIN
          section ON section.SectionID = assessment.SectionID
      INNER JOIN
          semester ON semester.SemesterID = section.SemesterID
          INNER JOIN
          program_enrollment ON program_enrollment.StudentID = student.StudentID
      INNER JOIN
          program ON program.ProgramID = program_enrollment.ProgramID
      WHERE semester.SemesterName = '.$SemesterName." AND student.StudentID = ".$StudentID." AND program.ProgramName = ".$ProgramName;

      $fire = mysqli_query($con, $sql);
      $rows = mysqli_num_rows($fire);
      if($rows == 0){

      }
      else{
        while ($result = mysqli_fetch_assoc($fire)) {
```

```
$GradePoint = 0;
$Grade = '';
if($result['FinalMark'] >= 85 &&  $result['FinalMark'] <= 100){
    $GradePoint = 4.0;
    $Grade =  "A";
}
elseif($result['FinalMark'] >= 80 &&  $result['FinalMark'] <= 85){
    $GradePoint = 3.7;
    $Grade = "A-";
}
elseif($result['FinalMark'] >= 75 &&  $result['FinalMark'] <= 80){
    $GradePoint = 3.3;
    $Grade = "B+";
}
elseif($result['FinalMark'] >= 70 &&  $result['FinalMark'] <= 75){
    $GradePoint = 3.0;
    $Grade = "B";
}
elseif($result['FinalMark'] >= 65 &&  $result['FinalMark'] <= 70){
    $GradePoint = 2.7;
    $Grade = "B-";
}
elseif($result['FinalMark'] >= 60 &&  $result['FinalMark'] <= 65){
    $GradePoint = 2.3;
    $Grade = "C+";
}
elseif($result['FinalMark'] >= 55 &&  $result['FinalMark'] <= 60){
    $GradePoint = 2.0;
    $Grade = "C";
}
elseif($result['FinalMark'] >= 50 &&  $result['FinalMark'] <= 55){
    $GradePoint = 1.7;
```

```
         $Grade = "C-";
       }
       elseif($result['FinalMark'] >= 45 &&  $result['FinalMark'] <= 50){
         $GradePoint = 1.3;
         $Grade = "D+";
       }
       elseif($result['FinalMark'] >= 40 &&  $result['FinalMark'] <= 45){
         $GradePoint = 1.0;
         $Grade = "D";
       }
       elseif($result['FinalMark'] >= 0 &&  $result['FinalMark'] <= 40){
         $GradePoint = 0.0;
         $Grade = "F";
       }
       $sum += $GradePoint;
     }
     $gpa = $sum/$rows;
     $cgpa += $gpa;
     $sum = 0;
     $gpa = 0;
    }
   }
   $barchartdata .= $cgpa.",";
   $cgpa = 0;
  }
  $barchartdata .="],";
 }
?>
```



Course Wise Student Performance

```
<?php
  $barchartdata = "";
  $count = 0;
  $sum = 0;
  $gpa = 0;

  $sql_id= "SELECT * FROM `student`";
  $sql_semester= "SELECT * FROM `semester`";
  $sql_course= "SELECT * FROM `course`";
  $fire_course = mysqli_query($con, $sql_course);
  while ($result_course = mysqli_fetch_array($fire_course)) {
   $CourseID = "".$result_course['CourseID']."";
    $barchartdata .="[".$CourseID.",";

    $fire_semester = mysqli_query($con, $sql_semester);
    while ($result_semester = mysqli_fetch_array($fire_semester)) {

      $fire_id = mysqli_query($con, $sql_id);
      while ($result_id = mysqli_fetch_array($fire_id)) {
```

```
$StudentID = $result_id['StudentID'];

$SemesterName = "".$result_semester['SemesterName']."";

$sql = '

SELECT

    student.StudentID ,course.CourseID,(evaluation.Obtainedmarks / assessment.Marks)*100 AS FinalMark , semester.SemesterName

FROM

    evaluation

INNER JOIN

    assessment ON assessment.AssessmentNO = evaluation.AssessmentID

INNER JOIN

    student ON student.StudentID = evaluation.StudentID



INNER JOIN

    section ON section.SectionID = assessment.SectionID

     INNER JOIN

       course ON course.CourseID = section.CourseID

INNER JOIN

    semester ON semester.SemesterID = section.SemesterID

WHERE semester.SemesterName = '.$SemesterName." AND student.StudentID = ".$StudentID." AND course.CourseID =

".$CourseID;


$fire = mysqli_query($con, $sql);

$rows = mysqli_num_rows($fire);

if($rows == 0){


}

else{

  while ($result = mysqli_fetch_assoc($fire)) {
```

```
$GradePoint = 0;
$Grade = '';
if($result['FinalMark'] >= 85 &&  $result['FinalMark'] <= 100){
    $GradePoint = 4.0;
    $Grade =  "A";
}
elseif($result['FinalMark'] >= 80 &&  $result['FinalMark'] <= 85){
    $GradePoint = 3.7;
    $Grade = "A-";
}
elseif($result['FinalMark'] >= 75 &&  $result['FinalMark'] <= 80){
    $GradePoint = 3.3;
    $Grade = "B+";
}
elseif($result['FinalMark'] >= 70 &&  $result['FinalMark'] <= 75){
    $GradePoint = 3.0;
    $Grade = "B";
}
elseif($result['FinalMark'] >= 65 &&  $result['FinalMark'] <= 70){
    $GradePoint = 2.7;
    $Grade = "B-";
}
elseif($result['FinalMark'] >= 60 &&  $result['FinalMark'] <= 65){
    $GradePoint = 2.3;
    $Grade = "C+";
}
elseif($result['FinalMark'] >= 55 &&  $result['FinalMark'] <= 60){
    $GradePoint = 2.0;
    $Grade = "C";
}
elseif($result['FinalMark'] >= 50 &&  $result['FinalMark'] <= 55){
    $GradePoint = 1.7;
```

```
         $Grade = "C-";
       }
       elseif($result['FinalMark'] >= 45 &&  $result['FinalMark'] <= 50){
         $GradePoint = 1.3;
         $Grade = "D+";
       }
       elseif($result['FinalMark'] >= 40 &&  $result['FinalMark'] <= 45){
         $GradePoint = 1.0;
         $Grade = "D";
       }
       elseif($result['FinalMark'] >= 0 &&  $result['FinalMark'] <= 40){
         $GradePoint = 0.0;
         $Grade = "F";
       }
      $sum += $GradePoint;
     }
     $gpa = $sum/$rows;

     $sum = 0;

    }
   }
   $barchartdata .= $gpa.",";
   $gpa = 0;
  }
  $barchartdata .="],";
 }
?>
```

CHAPTER 5

CONCLUSION

PROBLEM AND SOLUTION
ADDITIONAL FEATURES & FUTURE DEVELOPMENT
CONCLUTION & RECOMMENDATIONS

Problem and Solution:

At the beginning it was really hard for us to collect all the correct information of the university due to online class about how PLO CO works, how student grading has been done, how the student enrollment works, how do they calculate GPA. which information a faculty can see about a student, OBE mark sheet etc. But with the help of our respected faculty members we tried to collect all the info as much as we can.

Due to online system it was also difficult for us to work as a group. it was difficult for us to share our ideas and work the whole project as a group simultaneously.

The bounded and short timeframe of this semester and also at the end too much rush situation has hindered our ability to achieve the full potential of this software. But we tried our level best to utilize our time to make the best possible software from the limited resources and time provided, and we also hope to come up with improvements with better analysis when allowed more time.

Additional feature and future development:

The addition of Curriculum Page in the SPMS where members of the Higher Management team can add and edit any changes to curriculum. Moreover, faculty members and students can check these updates to stay informed about the latest changes.

All the employee from the university will be able to check the SPMS using their id. they can get their valuable information from this system.

Conclusion:

As we planned to make a better and user friendly system for the betterment of the university, students and faculties. We tried to build, design and implement the best possible version of the idea we had for our SPMS. we added lots of new feature in the system that It will enhance the quality of education of the university. This system is much more informative Faculties will be able to improve their teaching method. they will be able to keep track of the students' performance more easily. Higher authorities will be able to know much more information. This software is **also** beneficial to the students who want to improve themselves as a better one. it will be also being helpful for the university employees to regulate their resources. This will certainly improve the institution work rate much faster and it will be a great boost up for the institution.

Recommendation:

Give some more time to the project so that we can implement our ideas completely and finish the whole project nicely.

Hire some people who can develop this software if there is any necessity