BIRLA VISHVAKARMA MAHAVIDHYALAYA, V.V. NAGAR.

COMPUTER DEPARTMENT

PROJECT REPORT
FOR

B.E. 7TH /8TH SEMESTER

COLLEGE MANAGEMENT SYSTEM

A PROJECT REPORT

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In
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BIRLA VISHVAKARMA MAHAVIDYALAYA

Gujarat Technological University, Ahmedabad

Academic Year : 2011-2012

BIRLA VISHVAKARMA MAHAVIDHYALAYA, V.V. NAGAR.

COMPUTER DEPARTMENT

2011

CERTIFICATE

Date:

This is to certify that the dissertation entitled COLLEGE MANAGEMENT SYSTEM has been carried out by *Bangoria Ravi B., Dodia Shailesh N., Kapadia Kutub S., Kasundra Chetan H., Malaviya Navneet C., Parmar Nirmalsinh J.* under my guidance in fulfillment of the degree of Bachelor of Engineering in Computer Engineering (7thSemester/8thSemester) of Gujarat Technological University, Ahmedabad during the academic year 2011-12.

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Faculty Guides:

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Industry Guides:
Mr. Ketan Patel

Head Of The Department
Prof. Prashant Swadas

ACKNOWLEDGEMENT

Here we are developing the COLLEGE MANAGEMENT SYSTEM with the Electromech corporation with the coordination of the faculties and industry guide.

We are very thankful to the our academic guides Prof. Darshak g. thakore and Prof. Narendra M. Patel for their valuable guidance in the project. Throughout the project development they have been guiding us in every aspect. They have very helpful in providing better understanding of many concepts & also been helpful to solve many problems that arise in the development process especially related to design aspects.

Besides them our project coordinator Prof. Sunil Bakru sir have helped us to define the overall schedule for the project progress. He has developed over all project progress program for the students of Birla VishvaKarma Mahavidhyalaya Computer department that has been useful to keep track of progress.

We are also thankful to the our head of the department and all other faculties who has provided us their valuable suggestion for improvement and give their precious time to us.

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We are also thankful to the staff of the Electromech Corporation Limited,because they have provided us access to the amenities so that we can work more better. They have also helped in our project by giving us permission to work under elecon company.

ABSTRACT

We are developing the COLLEGE MANAGEMENT SYSTEM that will be useful to the every stake holder related to the college which will work as the integration to the system which is currently under development at the industry.

As we are focusing on the improving the existing college management system which is mainly manual work-system and highly paper-based.

We are approaching to provide better functionality to the various user of the system like student, faculties, administration people that will ease the work and interaction with the system with higher efficiency and effectiveness.

As the result of the project we expecting the paperless college management system with improved functionality and better handling of every aspect of college that will eliminate the paperwork, duplication of work, redundancy of data , misplacement of various important documents, some of the data access limitation in the existing system.

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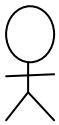
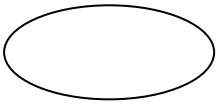
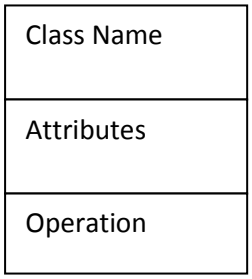
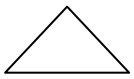
LIST OF SYMBOLS, ABBREVIATIONS AND NONMECLATURE

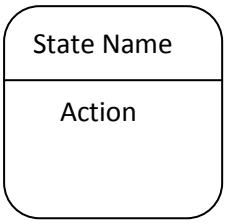
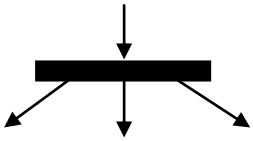
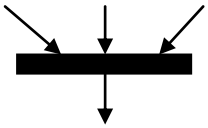
NOTATION FOR USECASE DIAGRAMS

	ACTOR
	USECASE
	ASSOCIATION

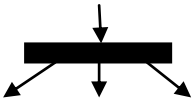
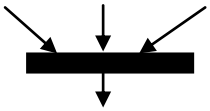
NOTATION FOR CLASS DIAGRAM

	CLASS
	ASSOCIATION
	GENERALIZATION
	COMPOSITION
	DEPENDENCY

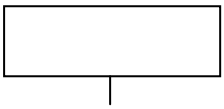
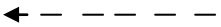
NOTATION FOR STATE DIAGRAM

	STATE
	START
	END
	TRANSITION
	FORK
	JOIN
	NOTATION
	DECISION

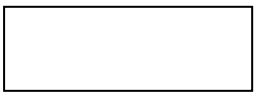
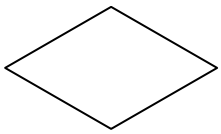
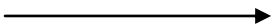
ACTIVITY DIAGRAM

	ACTIVITY
	DECISION
	TRANSITION
	START
	END
	FORK
	JOIN

SEQUENCE DIAGRAM

	OBJECT LIFETIME
	ACTIVATION
	MESSAGE CALL
	MESSAGE RETURN

E-R DIAGRAM

	ENTITY
	RELATION
	ASSOCIATION

ABBREVIATIONS

Abbreviations	Meaning
LAMP	Linux Apache MySQL PHP
PHP	Hyper Text Preprocessor
LAN	Local Area Network
AJAX	Asynchronous Java and XML
IDE	Integrated Development Environment
SDLC	Software Development Lifecycle
CSS	Cascade Style Sheet

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1. INTRODUCTION

1.1 Project Statement:

College management system is the web-based system that is useful to any college and provide many functionality to improve existing paper based system.

1.2 Introduction of the Project:

College management system is the web based system to manage all aspects of the institute with ease of working and management to save the time, effort and most of the paper work.

Today, most of the colleges have their systems based on paperwork. So there are many problems/difficulties with this paper based existing system.

1.3 Problem Summary:

There are numbers of disadvantages of existing system.

- The existing system has several modules like attendance of staff and students, students and staff information, student fees, time table etc. All these functionalities have been currently achieved manually and on the basis of paper.

- In college, every year many students are admitted in different departments. The paper work based manual record keeping of these students is very difficult and error prone.

- The existing system contains attendance module which is actually paper based and it has several downsides like misplacement of attendance sheet, time consuming etc.

- Students cannot get any information about attendance, holiday, event notification, assignment etc.

The paper based college management system needs to be a web based system with more features to help Institutes handling/processing/managing all the information regarding every aspects of the college management.

- The System will be working more efficiently, easily, in effective manner with least errors.

- We will be initially developing modules related to exam, result, mark sheet and transcript management. That will make the work of the institute easy and efficient up to great extent.

- The developed system will have following features:
  - Providing students information about their attendance, result, events online.
  - Store and retrieval of the data will be fast, efficient and more accurate.
  - Lower Maintenance & operational cost.
  - Integrates seamlessly into the existing IT infrastructure, hence minimal cost of overhead.

2. DESIGN APPROACH

2.1 Specifications

General Description

The paper based college management system needs to be a web based system with more features to help Institutes handling/processing/managing all the information regarding every aspects of the college management. Super-admin is responsible to assign permission to other users. Admin, Employee users have different rights to access the system and Student user can view the information of college details.

Assumption & Dependency

This system will have to work on high network traffic or LAN connection. Server should be having the ability to backup the database for the long time maintainability of the data.

External Interface Requirement

User Interface

System will provide user-friendly and easy to access user interface that will allow the different user to access the functionality of the system.

Hardware Interface

User should have computer which configured for internet access, LAN connection / wireless connection.

Communication Interface

System should have the internet connection for access system.

Users:

1. Super Admin :- provide the privileges to the faculties and admin.
2. Admin :- can access and update according to their privileges.
3. Faculty :- can access and update according to their privileges.
4. Students :- can see their information and can update their personal information only.

Modules:

The module we are currently developing:

Exam Management

We are developing exam management module which is very important integral part of our system which has following features:

- *Admin:*
  - Authentication for accessing the system.
  - Display of the subject list by fetching from database.
  - Scheduling the exam date, time, location and supervisor.
  - Display list of the students appearing for exam.

- *Faculty:*
  - Authentication for access.
  - Exam Schedule for supervision.

- *Students:*
  - View exam schedules.
  - Generation of hall ticket.

System Requirement

❖ **Client side Requirement**

Hardware Requirement

- P4
- 256 MB RAM
- Keyboard
- Mouse
- Color Monitor

Software Requirement

- Internet connection with web browser.

❖ **Development side Requirement**

Hardware Requirement

- Intel Pentium 4(1.6GHz)
- 1GB RAM
- 80GB HD
- Keyboard
- Mouse
- Color Monitor

Software Requirement

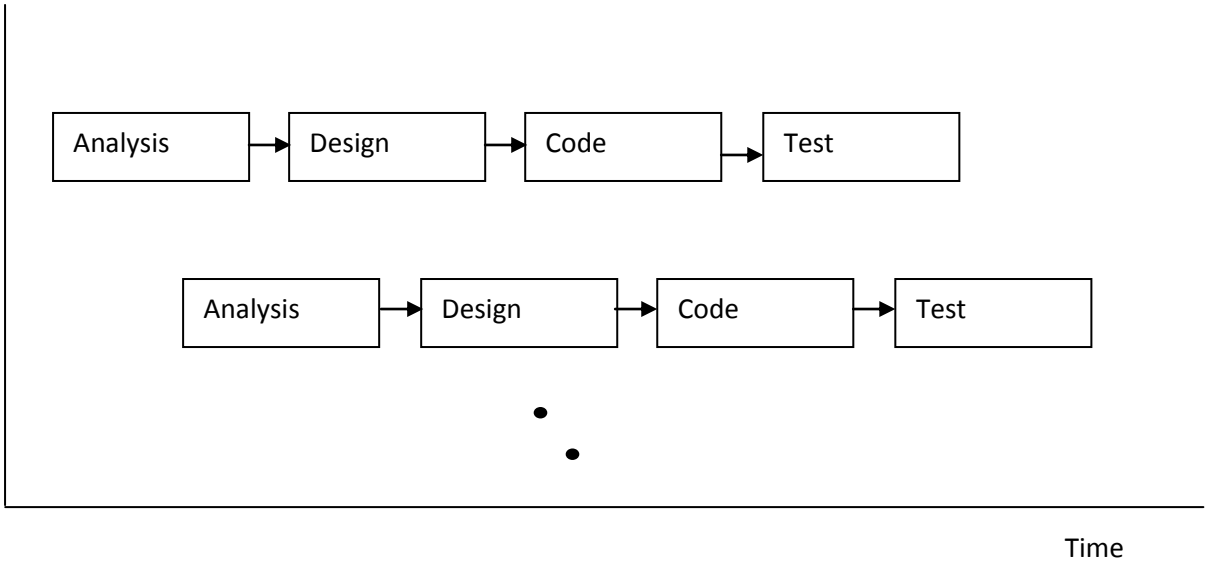
- Front End Tool :- PHP 5.1.6
- Back End Tool :- Mysql 5.0.7.7
- Web Server :- Apache 2.2.3

2.2 Implementation Strategy

We are using *incremental model* for implementing our system.

The *incremental model* combines elements of the linear sequential model (applied repetitively) with the iterative philosophy of prototyping.

The incremental model applies linear sequences in a staggered fashion. Each linear sequence produces a deliverable "increment" of the software. For example, word-processing software developed using the incremental paradigm might deliver basic file management, editing, and document production functions in the first increment; more sophisticated editing and document production capabilities in the second increment; spelling and grammar checking in the third increment; and advanced page layout capability in the fourth increment. It should be noted that the process flow for any increment can incorporate the prototyping paradigm. When an incremental model is used, the first increment is often a *core product.* That is, basic requirements are addressed, but many supplementary features (some known, others unknown) remain unimplemented.



2.3 System Design

Data Dictionary:

1. Table : academic_year

No.	Field Name	Data Type	Size	Description
1	Academic_year_id	Varchar	20	Primary Key
2	Start_date	date	-	Starting date of academic year
3	End_date	date	-	Ending date of academic year

2. Table : exam_duration

No.	Field Name	Data Type	Size	Description
1	Duration_id	Int	3	Primary Key
2	Duration	Time	-	Duration of exam

3. Table : exam_schedule

No.	Field Name	Data Type	Size	Description
1	Subject_code	Varchar	8	Foreign key of subject_master
2	Date	date	-	Date of exam
3	Start_time	time	-	Starting time of exam
4	Type_id	int	2	Primary key and foreign key of exam_type
5	Total_schedule_id	varchar	20	Foreign key of total_schedule

4. Table : exam_time_master

No.	Field Name	Data Type	Size	Description
1	Time_id	Int	3	Primary Key
2	Type_id	Int	3	Foreign key of exam_type
3	Start_time	Time	-	Starting time of exam
4	End-time	time	-	End time of exam

5. Table : exam_type

No.	Field Name	Data Type	Size	Description
1	Type_id	Int	3	Primary Key
2	Type_name	Varchar	30	Exam name
3	Maximum_mark	Int	3	Maximum mark of exam
4	Passing_mark	Int	3	Passing marks of exam
5	Active_status	int	2	Status of exam

6. Table : Room

No.	Field Name	Data Type	Size	Description
1	Room_no	Int	4	Primary Key gives room no.
2	Block	Varchar	3	Block of room
3	Capacity	int	3	Capacity of room

7. Table: student_registration

No.	Field_Name	DataType	Size	Description
1.	stud_id	Int	5	Primary Key
2.	Academic_year_id	Varchar	20	Foreign key of academic_year
3.	Branch_id	Int	2	Foreign key of branch
4.	Sem	Int	1	Semester
5.	Elective_subject_code	Int	8	Elective subject code
6.	Batch_id	Int	2	Foreign key of batch
7.	Division_id	Int	2	Foreign key of division

8. Table: Subject_continuous_evaluation

No.	Field_Name	Datatype	Size	Description
1.	Subject_code	Int	8	Foreign key of subject_master
2.	Continuous_evaluation_master_id	Int	2	Foreign key of subject_continous_evaluation

9. Table: subject_exam_duration

No.	Field_Name	DataType	Size	Description
1.	Subject_code	Int	8	Foreign key of subject_master
2.	Internal_duration_id	Int	3	Duration id from exam_duration
3.	External_duration_id	Int	3	Duration id from exam_duration

10. Table: subject_master:

No.	Field_Name	DataType	Size	Descripition
1.	Subject_code	Int	8	Primary key
2.	Subject_name	Varchar	50	Name of the subject
3.	Theory_credit	Int	2	Theory credit of subject
4.	Practical_credit	Int	2	Practical credit of subject
5.	Subject_type_id	Int	1	Foreign key of subject_type

11. Table: subject_registration

No.	Field_Name	DataType	Size	Descripition
1.	Subject_code	Int	8	Foreign key of subject_master
2.	Branch_id	Int	2	Foreign key of branch
3.	Sem	Int	1	semester

12. Table: subject_type

No.	Field_Name	DataType	Size	Description
1.	Subject_type_id	Iint	2	Primary key
2.	subject_type_name	Varchar	50	Different types of subjects elective, department elective etc.

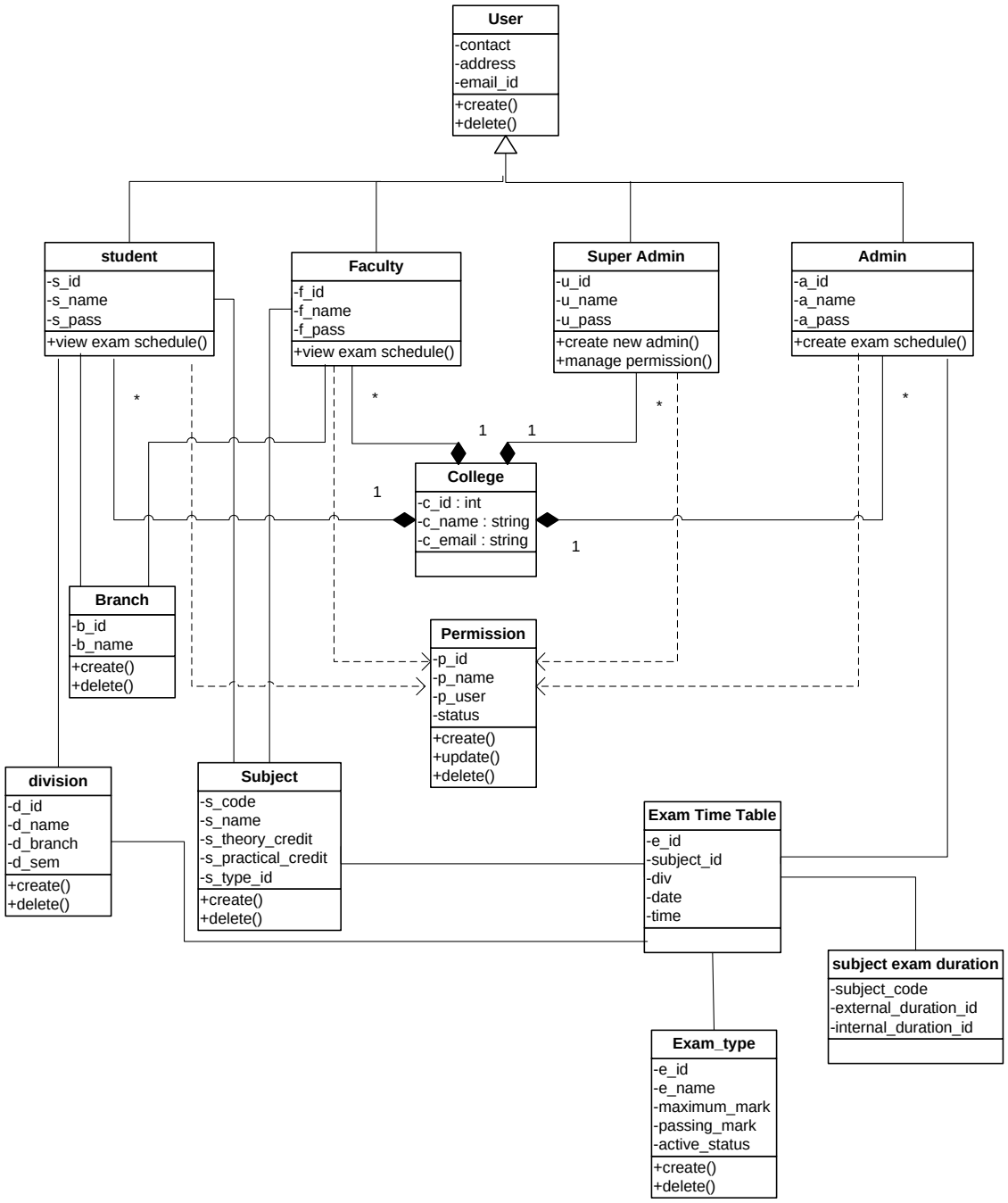
13. Table: Total_schedules

No.	Field_Name	DataType	Size	Description
1.	Total_schedule_id	Varchar	20	Primary key
2.	Academic_year_id	Varchar	10	Foreign key of academic_year
3.	Exam_type_id	Int	2	Foreign key of exam_type
4.	Sem	Int	1	semester

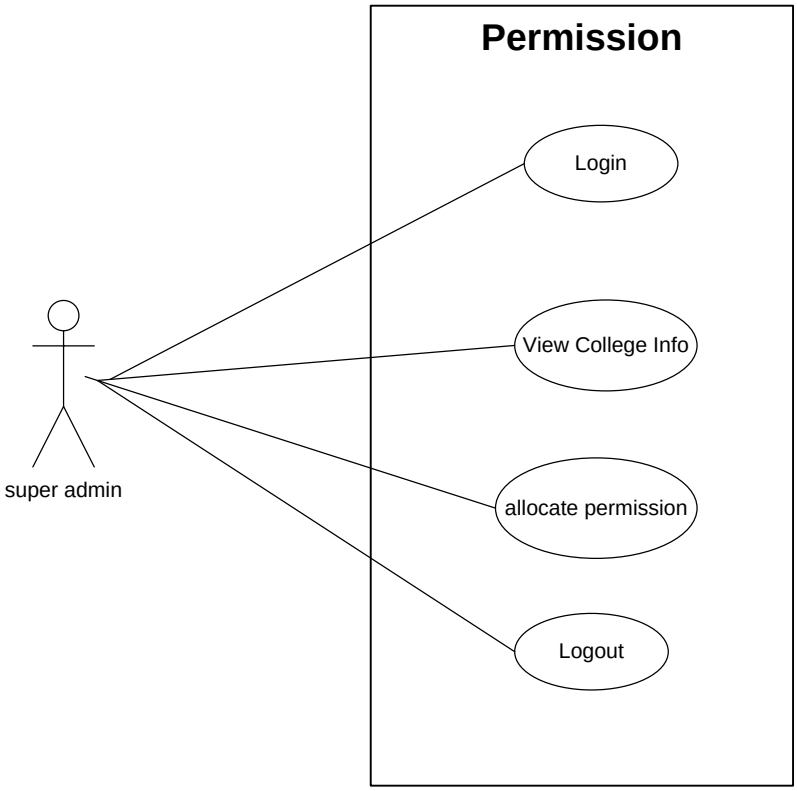
14. Table: Continuous_evaluation_master

No.	Field_Name	DataType	Size	Description
1.	Continuous_evaluation_master_id	Int	2	Primary key
2.	Evaluation_type	Varchar	50	Different types of continuous evaluation
3.	Mark	Int	3	Mark of the continous evaluation

Class Diagram:

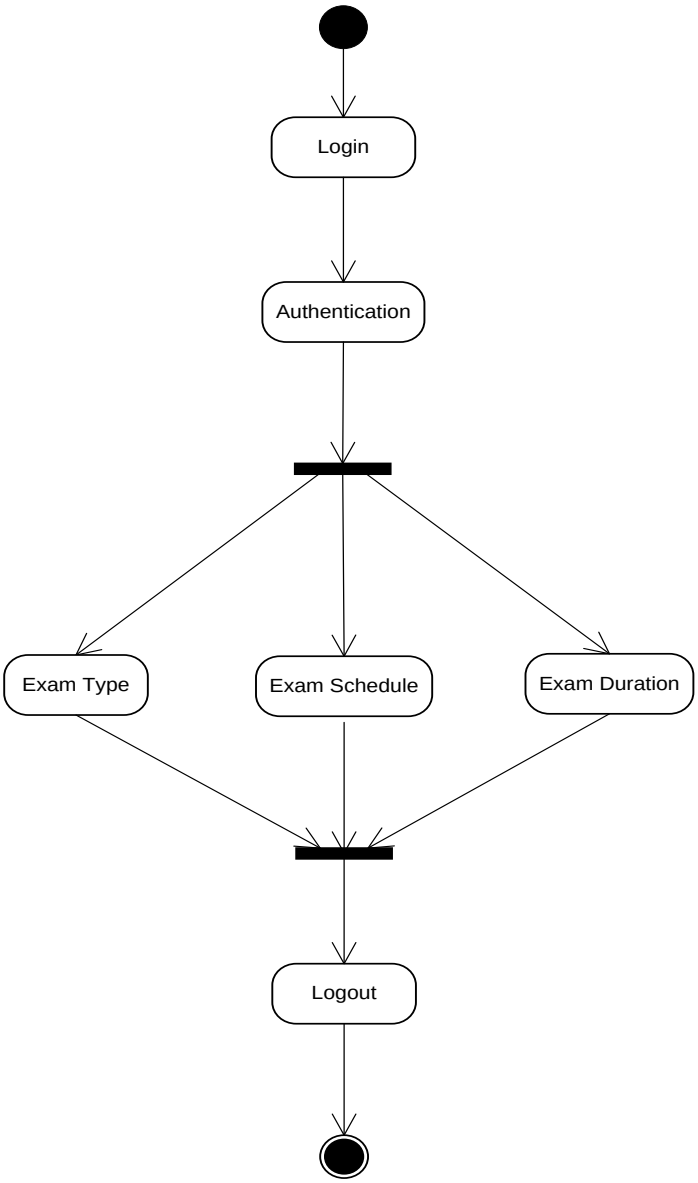


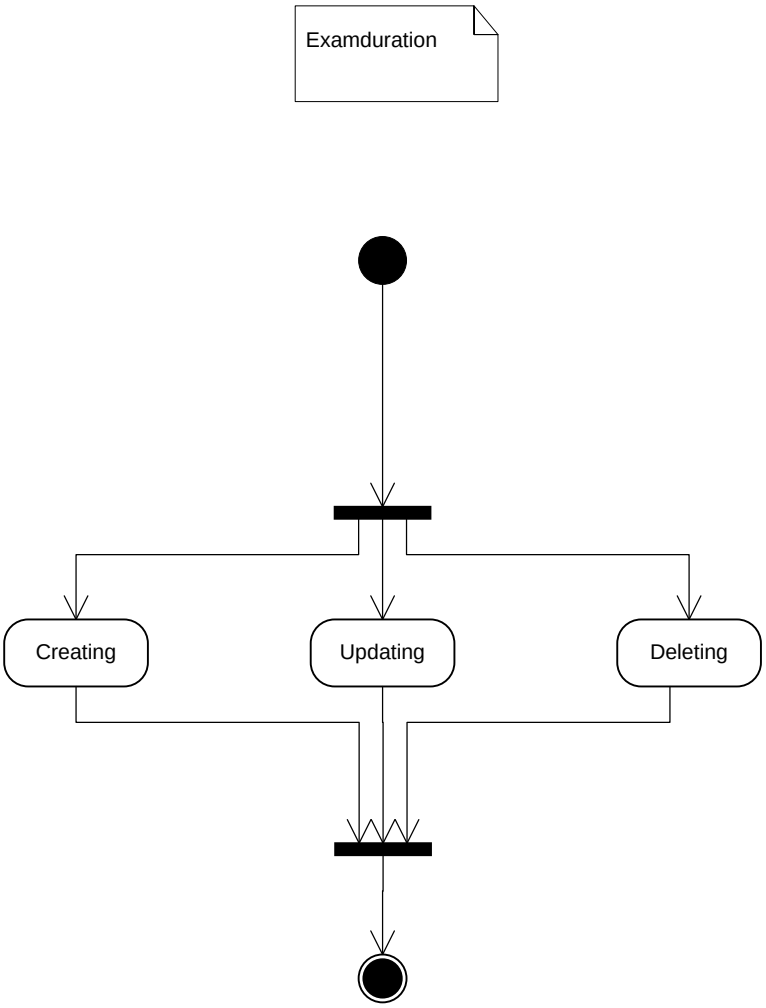
Use-Case Diagrams:

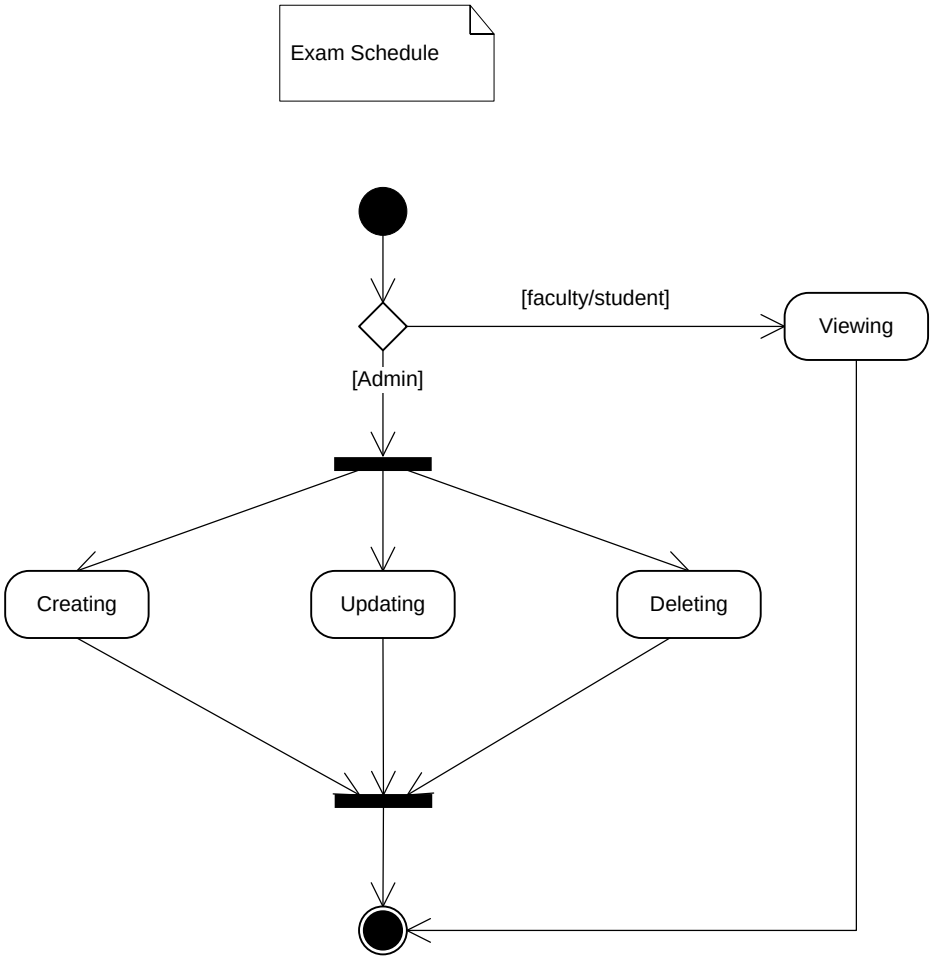


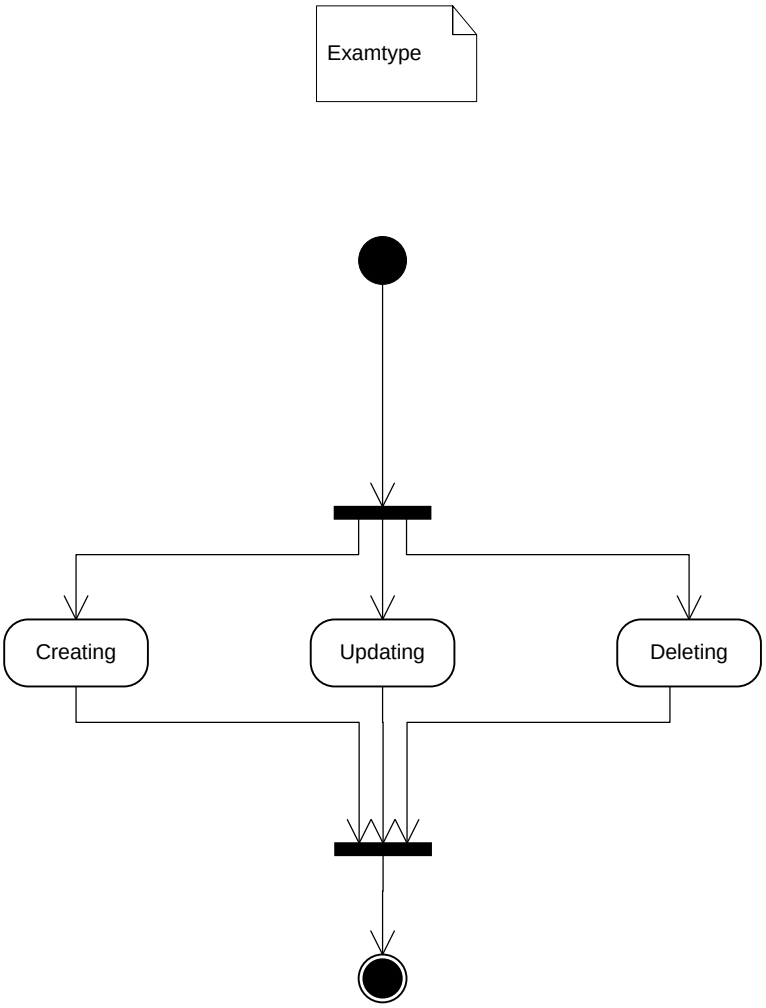

Schedule
Login
Permission
Create schedule
Update schedule
Create Duration
Update Duration
View schedule
Create Exam Type
Update Exam Type
Logout
Admin
Faculty
Super Admin
Student

State Diagrams:




Examduration
Creating
Updating
Deleting


Exam Schedule
[faculty/student]
Viewing
[Admin]
Creating
Updating
Deleting


Examtype
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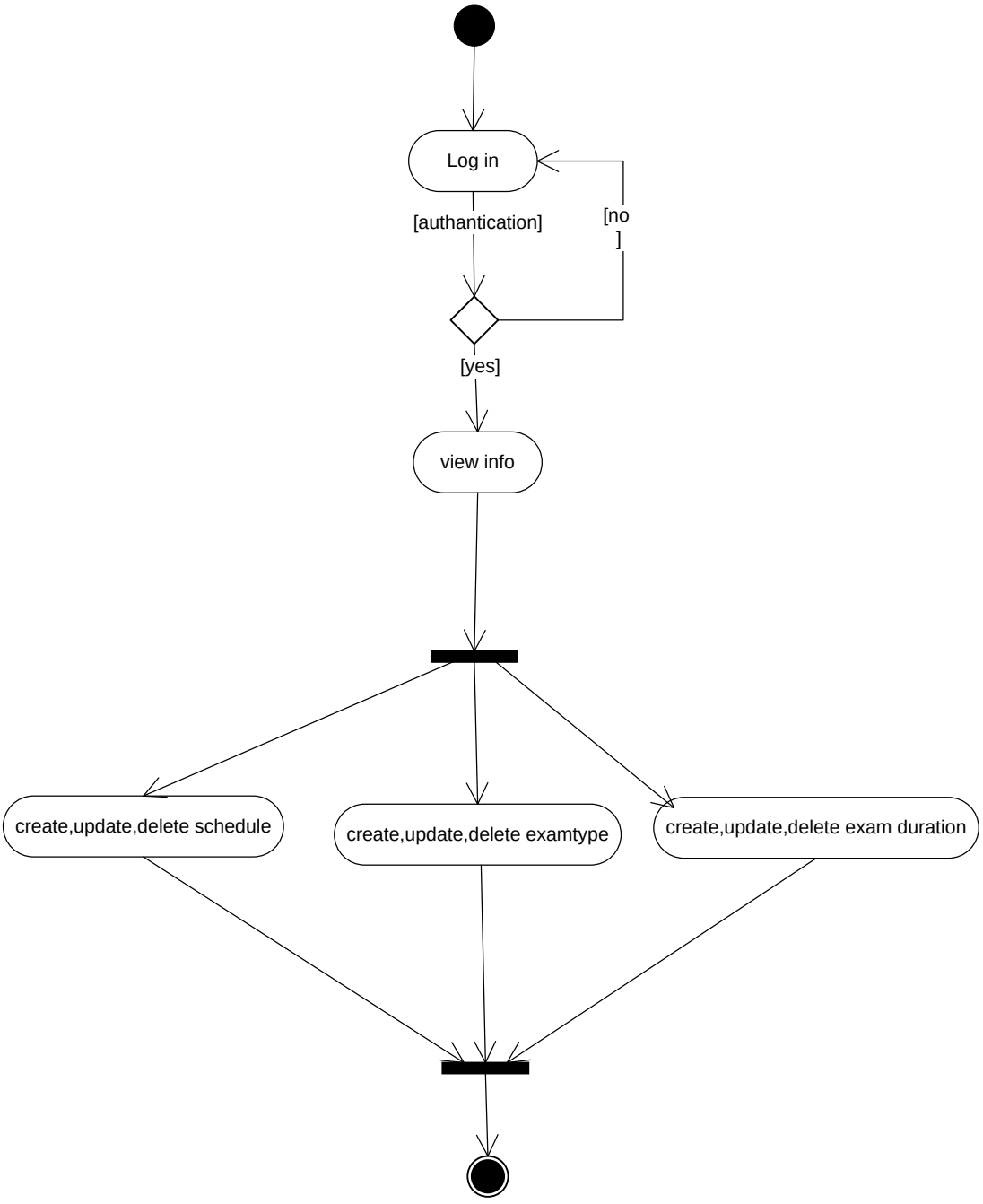
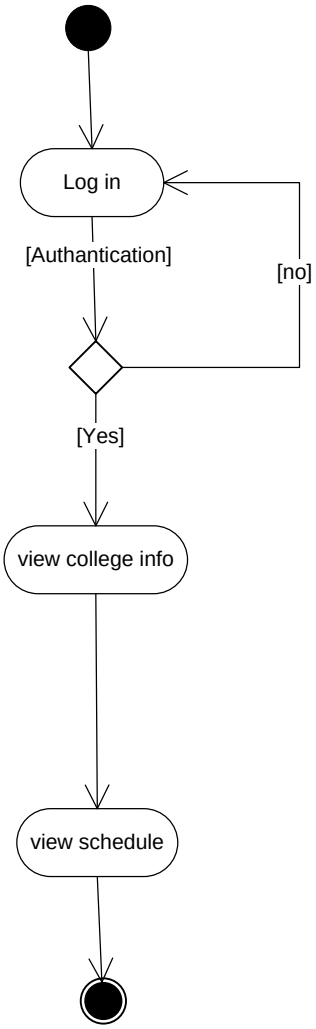
Activity Diagrams:

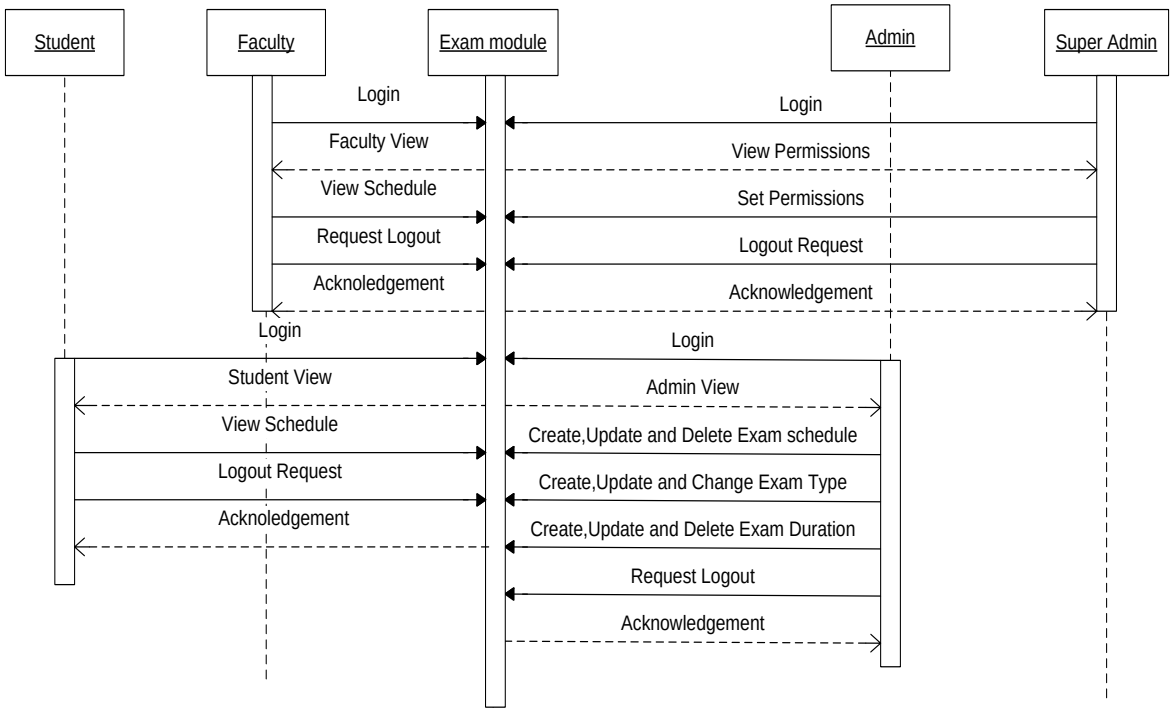
For admin



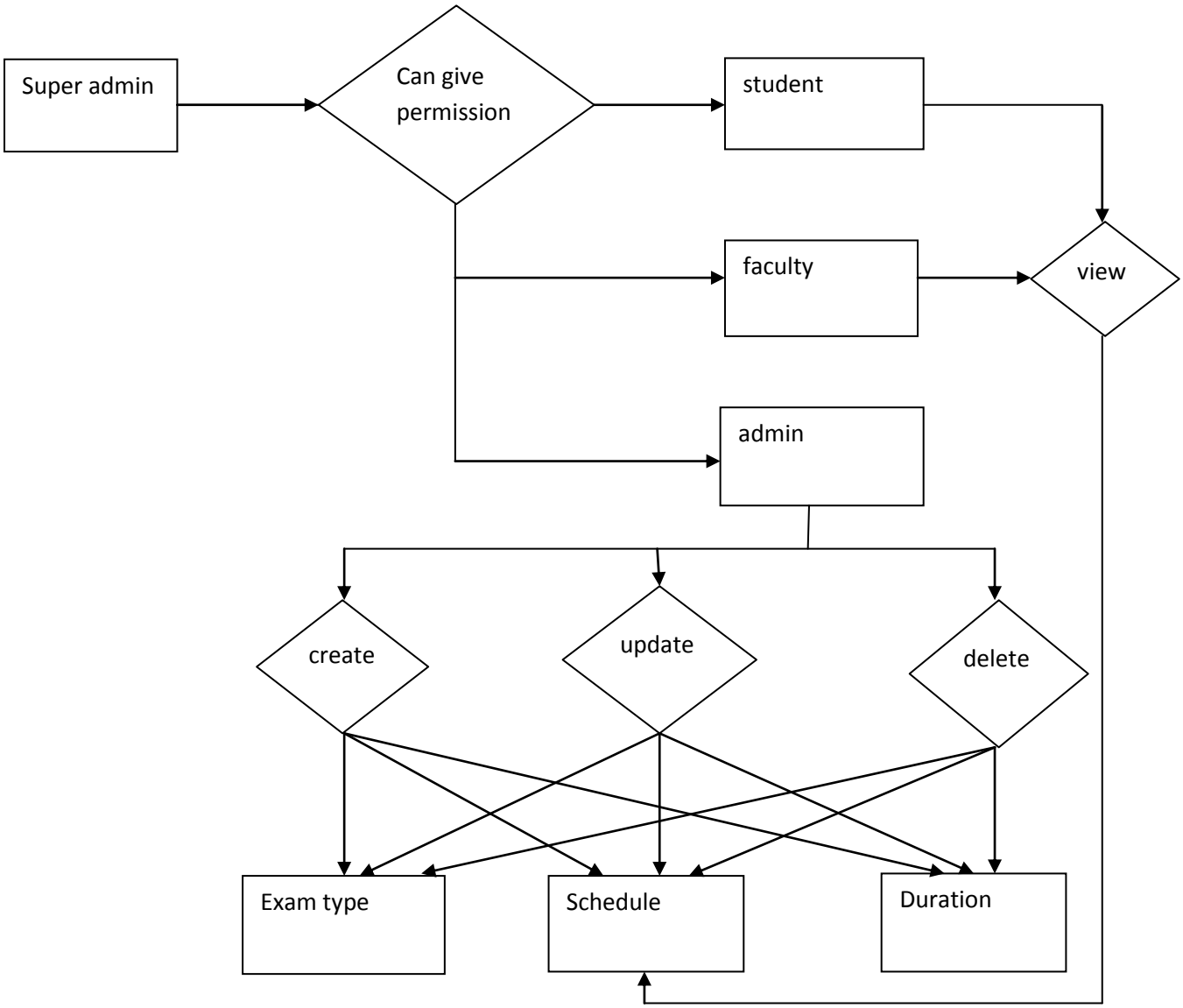
For Faculty and Students



Sequence Diagram



E-R Diagram:


Super admin
Can give permission
student
faculty
view
admin
create
update
delete
Exam type
Schedule
Duration

2.4 Database Analysis

We have analysis the database provided by the company and find the following type of mistake in database.

- In database two tables for fees one is COLLEGE_FEES and second is COLLEGE_FEES_OLD. In which table COLLEGE_FEES is not required.

- The table COLLEGE_FEES_OLD require following changes.
  - No need of all *roll_no ,stud_id & merit_no*.In which only one requires.
  - *Fee_type* field should be referenced from new table. i.e. replace *fee_type* with *fee_type_id* and *fee_amount*.
  - *Quota_id* is requiring instead of quota.
  - Quota must not be null.
  - The *date* and *fee_date* both are used and both are same. *Fee_recept_no* should be unique key.

- The table COLLEGE_LEFT require following change.
  - *Stud_id* must be primary key.

- The table COMPANY_DETAIL require following change.
  - *Company_details_company_id* must be primary key.

- The table DEPARTMENT require following change.
  - The table should include *num_of_divison* field.

- The table DETAINED require following change.
  - It should include academic_year_id field because one student can not be detained two times in one academic year.
  - In table require primary key is *stud_id, academic_year_id*.
- The table DIVISION require following change.
  - It should include *deprtment_id*.

8. The table EMPLOYEE require following change.
   - *Employee category* must not NULL.
   - *Employee category* must be replaced by *Employee_category_id* (reference key).
   - Gender must not NULL.
   - No need of both *employee_branch_id* and *employee_department_id.*

9. The table EMPLOYEE_ATTENDANCE require following changes.
   - No need of *year* and *month*.
   - No need to store present only store absent date of employee.

10. The table SEMPERIOD require following field.
    - *Sem_period_id,start_date,end_date,company_id,created_by,created_date.*

2.5 Work Plan

The work plan of college management system contains following terms:

Activities:

- User Login
- Create Exam Schedule
- Create Exam Type
- Create Exam Duration
- View Schedules

Data collection method and Time Frame:

- The data is collected at the start of the project and also quarterly which defines the time frame and also data collection is done from literature.

Dissemination:

- The process of sharing knowledge gained from project.

Evaluation results:

- Description of progress, including data, in achieving outcomes as measured through outcome indicators.

Inputs (resources):

- We have used new technology like AJAX, JQuery and PHP to achieve project output.

Outcome:

- We have gained following outcome:
  1. Paperless work.
  2. Easy and efficient System.

Progress reporting:

- We have submitted progress Report for Each work improvement we have done.

Responsible person:

- The admin, Super admin, Faculty, Student are responsible person.

Sustainability:

- The improvement in the system and integrating it into the existing system with sustainable output.

2.6 Tools Require

Front End	: PHP
Back End	: Mysql
Server	: Apache
Technologies	: AJAX : JQuery
IDE	: Dreamweaver

3. Literature Survey and Related Study

3.1 Introduction

Here we have demonstrated the sources of our study and show that various information related to this system is available here from various trustworthy web sites and books. We have searched various web sites and go through the books in order to give our best to this project.

3.2 Web Sites

3.2.1 www.codeproject.com

This website has been useful to us for understanding of various aspect like AJAX, JQuery, Javascript that we have implemented in our system to provide better functionality. We get sample code from this website to understand concepts of above mentioned concept.

3.2.2 www.php.net

We have used this website to understand the PHP script and how to connect database using PHP. Also we used this web site to implement session and other useful concept to improve our system.

3.2.3 www.w3schools.com

We have used this website to get knowledge about basic concept of HTML, CSS and other concept to get it implement in our system. This site also provides the good example of JQuery which is used by us to make the user interface better. This site is used by us very often because it provides all aspect of web application development.

3.3 Books:

3.3.1 Basics of PL/SQL, BPB Publication

We have used this book for understanding of different queries and

also database concept for implementing queries in our system. We have used Nested query, insert, update, delete etc. query operation to implement it in the MySql database query.

3.3.2 Database Management System, C.J Date

This book provides the basic DBMS concept of creation of database design, normalization. Normalization is the main part to effective database design and this book provides a good literature on this concept. Also many other concept of database design is taken from this book to make the database design efficient.

3.3.3 Developing Web Applications, Ralph Moseley and M. T. Savaliya

This book provides all basic concept of building web application. The main use of this book is because of providing the concept like JavaScript, PHP, DHTML etc to implement good web application. We have used this book very often to get good knowledge of this web application.

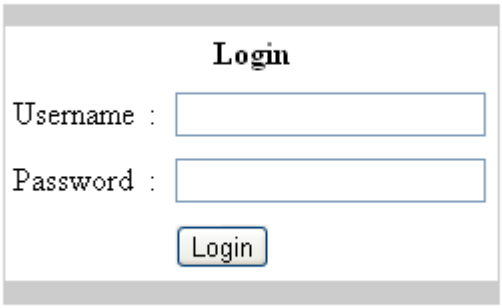
3.3.4 Software Engineering, Roger S. Pressman

This book provides the knowledge of the requirement specification and design concept to implement the final system. This book provides the knowledge of how to draw different diagram like E-R diagram, Use-case diagram, Class diagram, Activity diagram etc. This book is very essencial to develop any kind of software because it provides the basic knowledge of designing the system.

4. IMPLEMENTATION

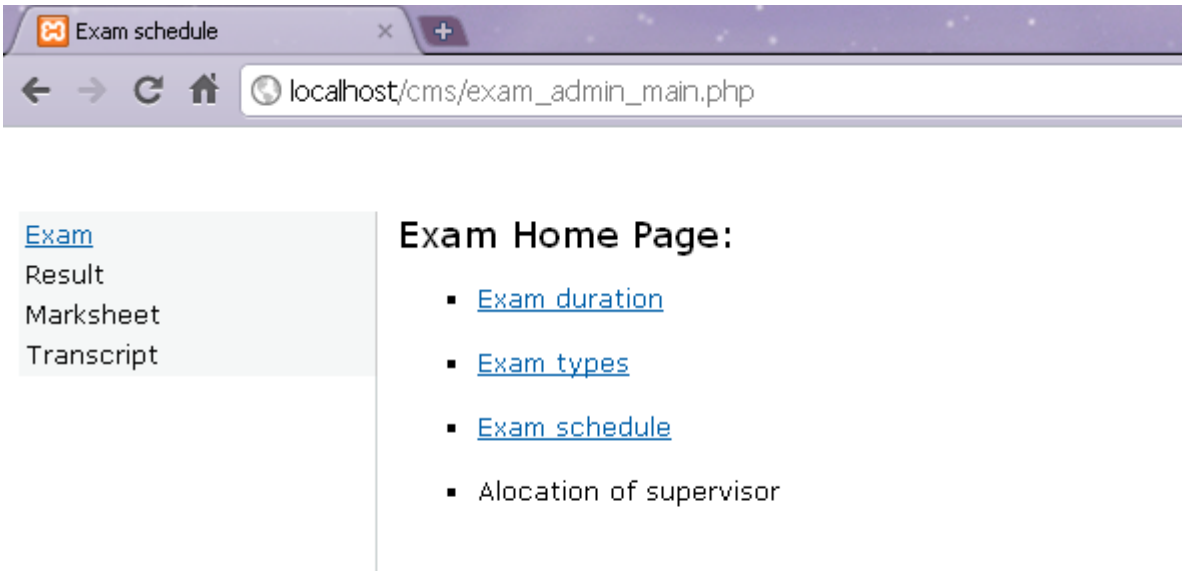
4.1 Login page:

We have implemented login module with use of session. Once user log in, he will access system as per his privileges. User can't access any internal webpage without login. If user log out, he can't go back and access system. So login is one gate that all users have to pass through to access system.



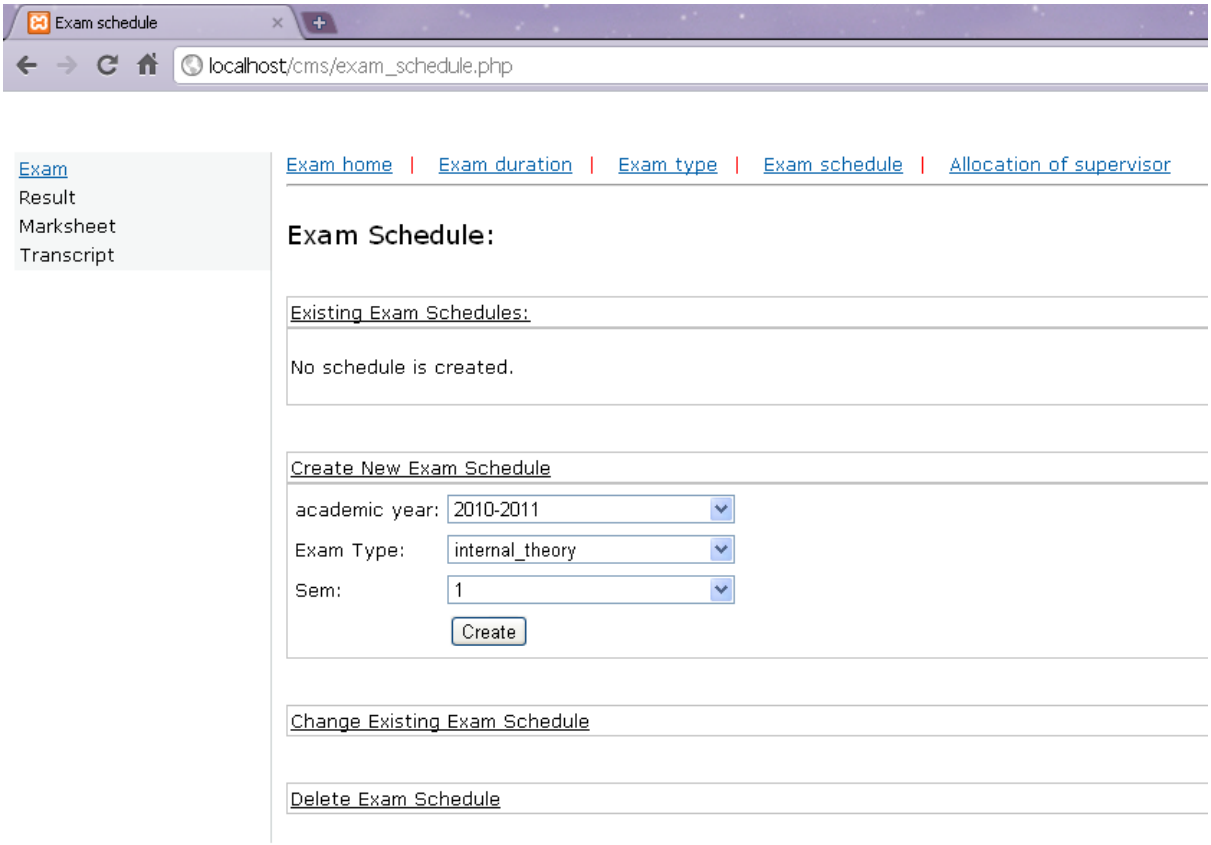
4.2 Admin Home page:

Admin will be redirected to this page after authentication.



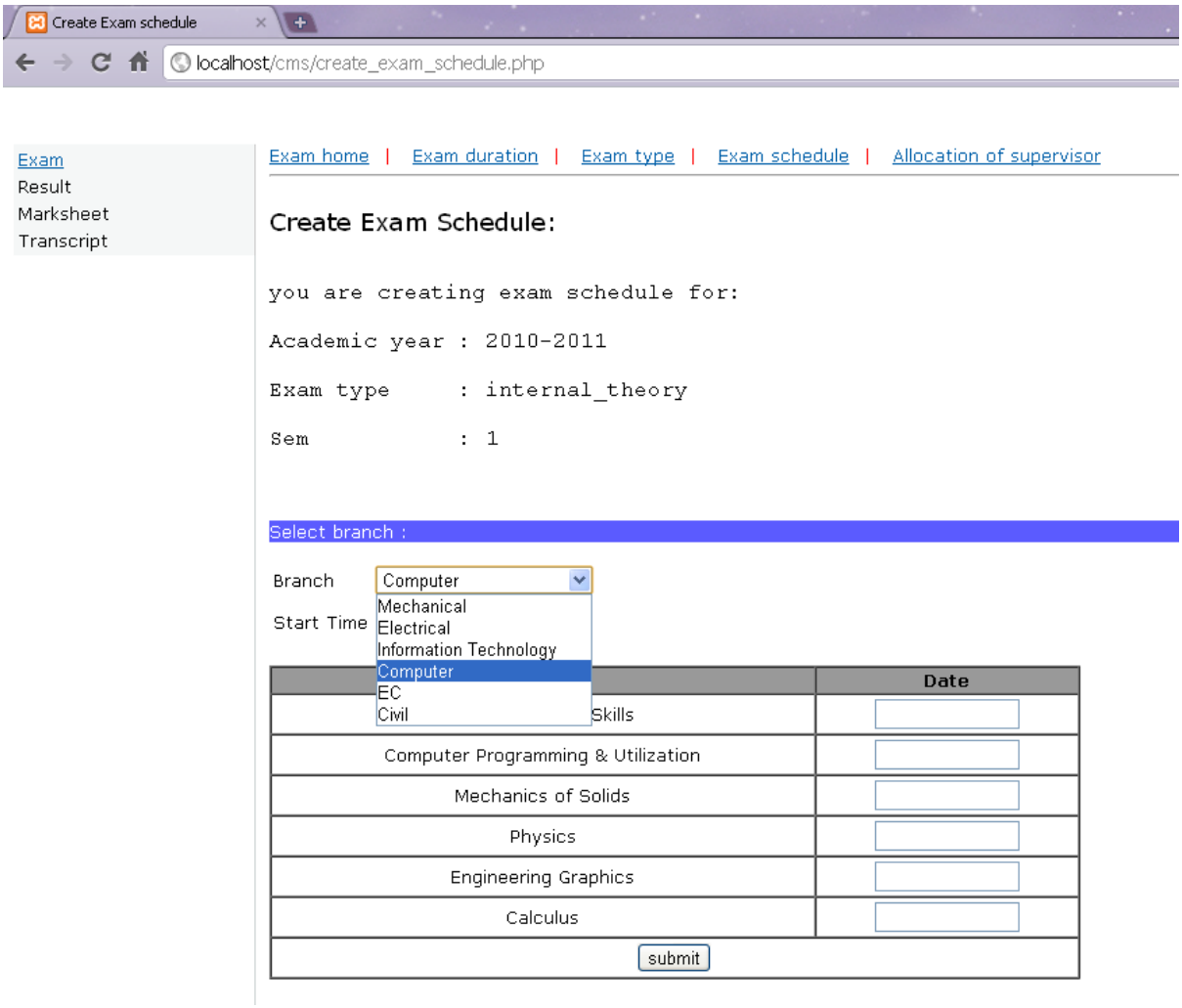
4.3 Admin Exam Schedule page:

Admin can create / update / delete exam schedule by selecting academic year, exam type and sem in this page.



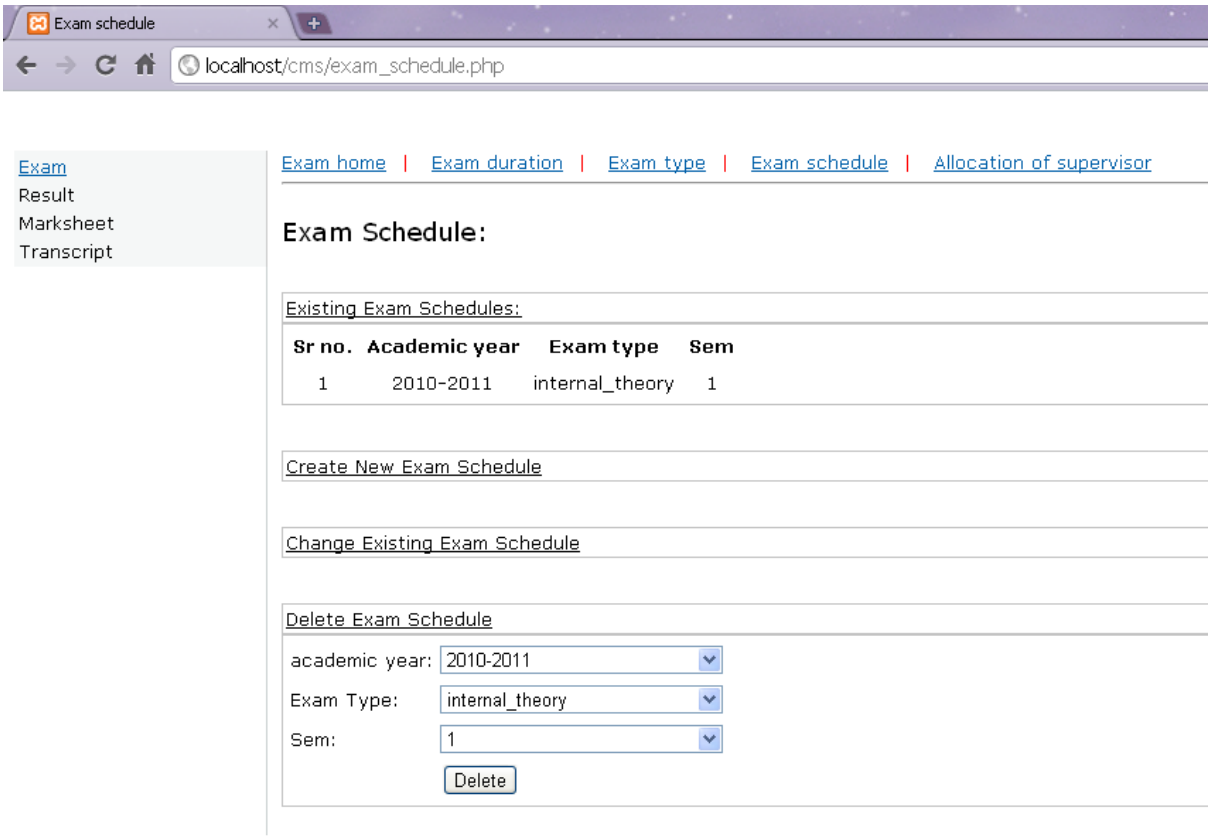
4.4 Admin Create Exam Schedule page:

Admin create exam schedule by selecting branch and entering date and time of exam for each subject in this page.



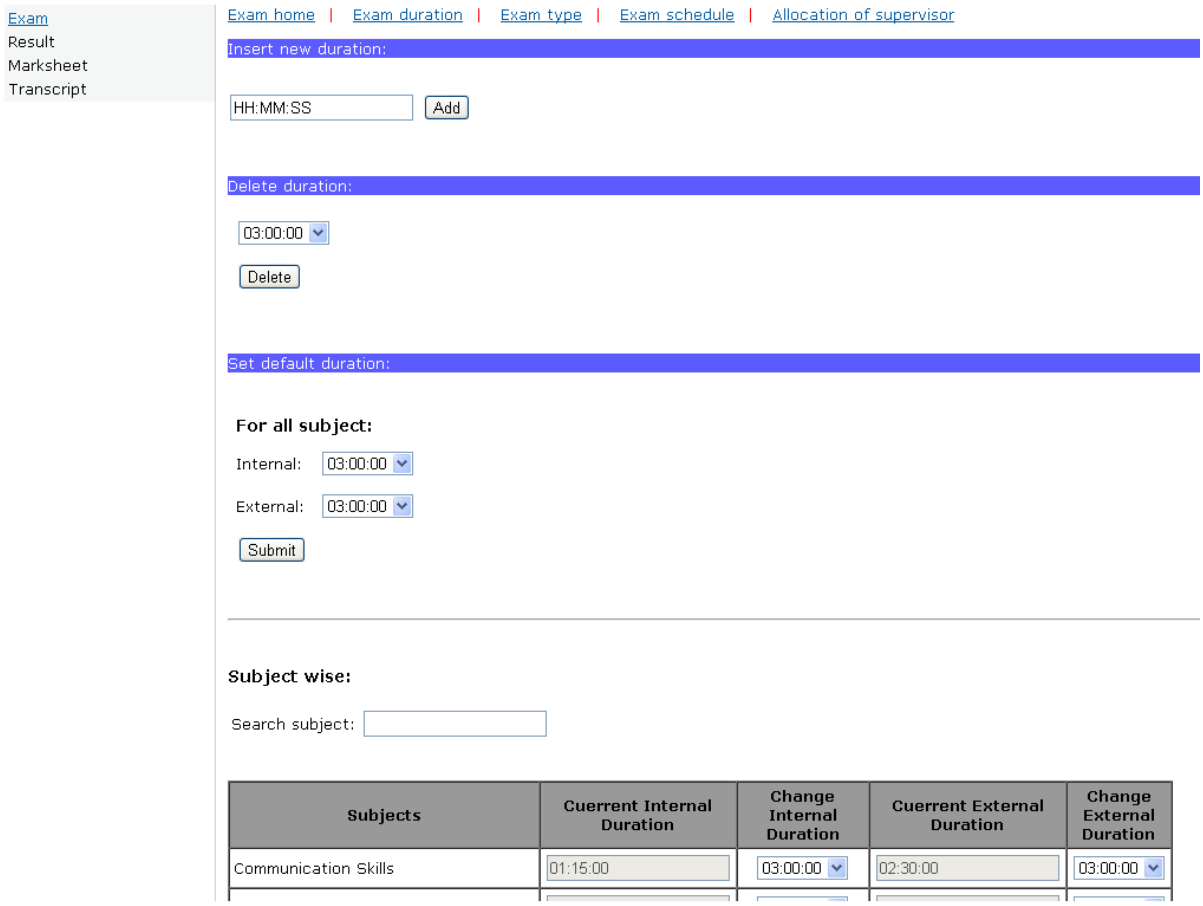
4.5 Admin Delete Exam Schedule page:

Admin can delete exam schedule using this page.



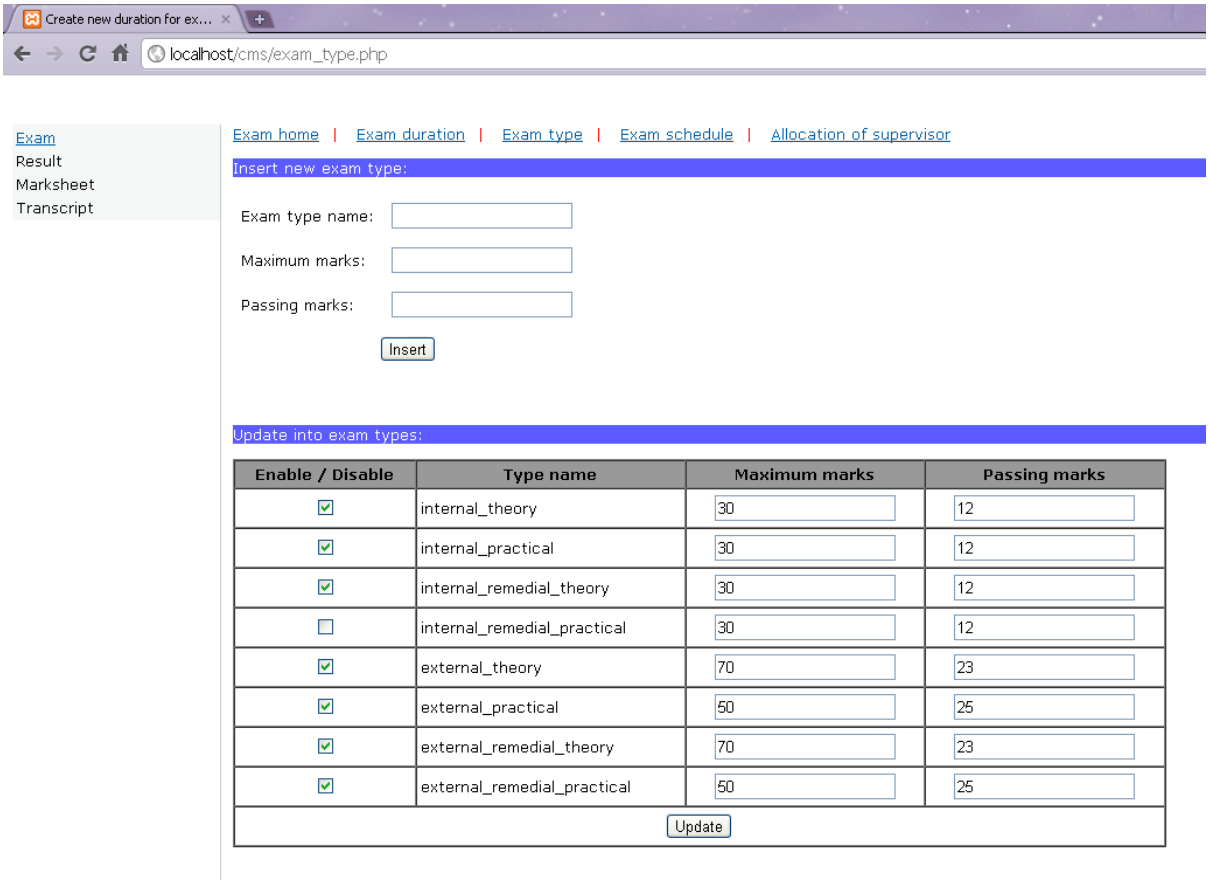
4.6 Admin Exam Duration page:

Admin can add new duration; can change subject wise duration by searching subject; can delete duration; can set default duration using this page.



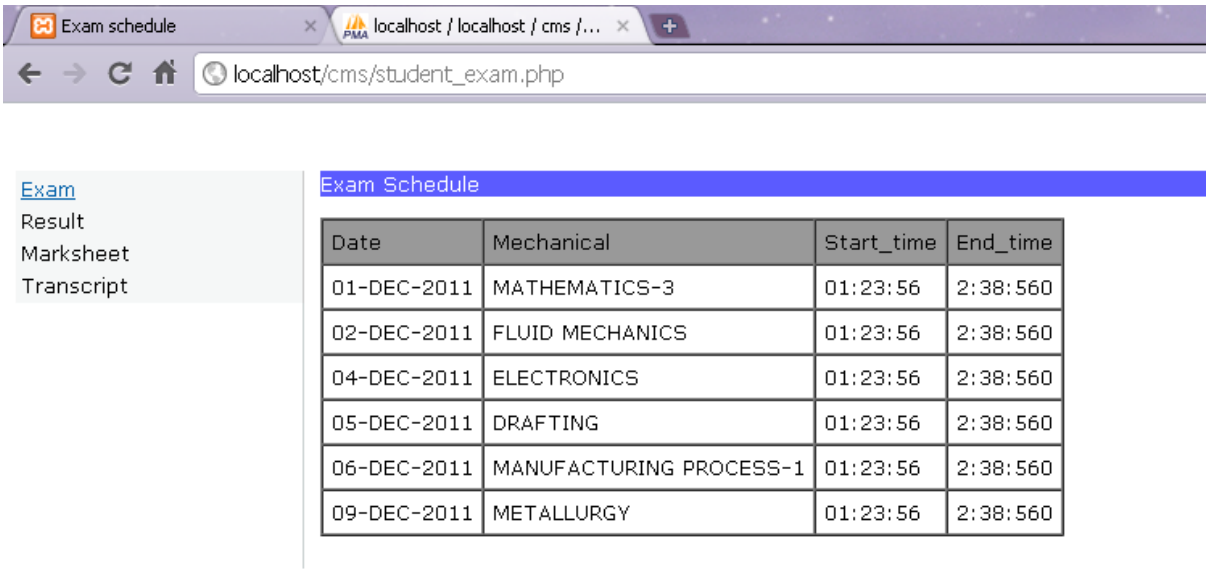
4.7 Admin Exam Type page:

Admin can create new exam type; can remove exam type using enable/disable; can update exam type using this page.



4.8 Student Exam Schedule page:

Student can view his exam using this page.



5. CONCLUSION

5.1 Conclusion:

- To develop the module we have followed the System Development Life Cycle(SDLC) approach.
- Every member of college can use college management system as per their privileges, so it will make system easily maintainable.
- The product will work on any window OS and Linux OS. So it is platform independent product.
- This experience is very useful in future work. We phase many problems regarding the database analysis, design and integration that arises during the development.
- College management System will be able useful for any college.

5.2 Future Plan:

Allocation of Room & Supervisor

Allocation of room will be done automatically based on the capacity and number of students in the branch. Availability of the room will also be taken into consideration before assigning it for exam. Allocation of supervisor is under development.

Result Management

Result is one of the most important modules. There will be two facets of this module :

1. Students
2. Faculty

Students:

- Student will get the notification about the declaration of the result through SMS or mail.
- And they can their result by logging in and providing the ID number.

Faculty:

- The work of the faculty will be very easy.
- They will got information of all the subject which they are conducting just by logging in. So they have to just add the marks of the students.
- And result will be automatically generated from this information.

Mark sheet Management

- Mark sheet will be generated as per the details filled in the result module.
- The format of mark sheet is designed in html and CSS.
- Students can also view their old mark sheet by selecting academic year.
- There will be a feature so that students will get the notification about the exam result and overall result. So stop checking it all the time.

Transcript Management

- It is the module that will provide final transcript.
- All the information about their academic is there on the other modules so it will be easily generated from that information.
- Transcript will be generated as per the college need using the CSS layout.

6. REFERENCE

6.1 Books:

- Basics of PL/SQL, BPB Publication
- Database Management System, C.J Date
- Developing Web Applications, Ralph Moseley and M. T. Savaliya
- Software Engineering, Roger S. Pressman

6.2 Websites:

- www.codeproject.com
- www.php.net
- www.w3schools.com