SYNOPSIS

Report on

School Management System

by

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School Management System

Synopsis

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INTRODUCTION& OBJECTIVE

INTRODUCTION

The population of our country is increasing rapidly, but the resources for providing proper education to the children are limited. So we need to utilize our existing school management processes properly with the help of digital technologies.

Most of the schools are managed by a single authority like head master or a group of people like governing body. But in this fast paced world people tend to switch jobs. If the key people leave the school then the quality of education and school management deteriorates. There are so many dependencies on the school management personnel. We can eradicate this dependency by deploying a computerized solution for managing school.

Nowadays both of the parents are employed for most kids and they don't have enough time to interact with teachers frequently. We need a computerized system to manage interaction between parents and teachers.

We will implement a school management system to address these issues and bring up an efficient system to manage activities of a school using single software.

OBJECTIVE

School Management System is versatile and complete end-to-end school management software .School Management System is used to enhance the administrative efficiency of educational institutions. It is an interactive platform for all entities viz. Students, Teachers, Management, Parents. It is a simple yet powerful one point integrated platform that connects all the departments of an institution namely office, fee counter, library, hostel, stores, academics, activity center and so on.

PROJECT CATEGORY

This software will follow Object Oriented Programming Paradigm and use below mentioned areas:

OOP Language: Java

RDBMS: MySQL 5.5.15

Networking: TCP/IP

Applications: Expert Systems

HARDWARE AND SOFTWARE SPECIFICATION

HARDWARE REQUIREMENT

- ➢ **Disc capacity :** 10 MB of available hard disk space

- ➢ **RAM :** 1 GB (32 Bit) or 2 GB (64 Bit)

- ➢ **Processor :** 1.6GHz or faster

- ➢ DVD-ROM Drive / USB **Port**

SOFTWARE REQUIREMENT

- ➢ Windows XP (x86) with Service Pack 3 / Windows Vista (x86 & x64) with

  Service Pack 2 / Windows 7 (x86 & x64)

- ➢ Microsoft .NET 4.0

REQUIREMENTS AND ANALYSIS

PROBLEM DEFINITION

EXISTING SYSTEM

The existing system is traditional paper books and ledger system where several records are stored and to track other details about the student and teacher. The flow diagram of how a student takes admission in Schools is shown below:

Student must take a registration form from the school with a small amount as a cost of registration form.

Fill up the form by the student and submit to the School.

According to the submitted registration form, an interview will be arranged.

4

```
┌─────────────────────────────────────────────────────────────────────────┐
│  ┌───────────────────────────────────────────────────────────────────┐  │
│  │  If the student passed the interview then he/she can take          │  │
│  │  admission in the school with a admission fees.                    │  │
│  └───────────────────────────────────────────────────────────────────┘  │
│                                    │                                      │
│                                    ▼                                      │
│  ┌───────────────────────────────────────────────────────────────────┐  │
│  │  He/ She will get study materials from the School.                 │  │
│  └───────────────────────────────────────────────────────────────────┘  │
│                                    │                                      │
│                                    ▼                                      │
│  ┌───────────────────────────────────────────────────────────────────┐  │
│  │  He / She must pay the overall Tuition fees over the Year.         │  │
│  └───────────────────────────────────────────────────────────────────┘  │
│                                    │                                      │
│                                    ▼                                      │
│  ┌───────────────────────────────────────────────────────────────────┐  │
│  │  He / She can join the Class.                                      │  │
│  └───────────────────────────────────────────────────────────────────┘  │
└─────────────────────────────────────────────────────────────────────────┘
```

The flow diagram of how a Student is promoted to next class according to his / her Results is shown below:

```
┌─────────────────────────────────────────────────────────────────────────┐
│  ┌───────────────────────────────────────────────────────────────────┐  │
│  │  Checks the attendance of the Student whether he/she has 75%       │  │
│  │  attendance.                                                       │  │
│  └───────────────────────────────────────────────────────────────────┘  │
│                                    │                                      │
│                                    ▼                                      │
│  ┌───────────────────────────────────────────────────────────────────┐  │
│  │  If he/she has , an admit card will be issued                      │  │
│  └───────────────────────────────────────────────────────────────────┘  │
│                                    │                                      │
│                                    ▼                                      │
│  ┌───────────────────────────────────────────────────────────────────┐  │
│  │  He / She can give the exam.                                       │  │
│  └───────────────────────────────────────────────────────────────────┘  │
│                                    │                                      │
│                                    ▼                                      │
│  ┌───────────────────────────────────────────────────────────────────┐  │
│  │  Records are stored in the system.                                 │  │
│  └───────────────────────────────────────────────────────────────────┘  │
│                                    │                                      │
│                                    ▼                                      │
│  ┌───────────────────────────────────────────────────────────────────┐  │
│  │  Checks the getting numbers in each subject whether it is more     │  │
│  │  than 40%.                                                         │  │
│  └───────────────────────────────────────────────────────────────────┘  │
└─────────────────────────────────────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────────────────┐
│                                                           │
│  ┌─────────────────────────────────────────────────┐     │
│  └─────────────────────────────────────────────────┘     │
│                          │                                │
│                          ▼                                │
│  ┌─────────────────────────────────────────────────┐     │
│  │                                                   │     │
│  │   If yes, then He / She will be promoted to the   │     │
│  │   next class.                                     │     │
│  │                                                   │     │
│  └─────────────────────────────────────────────────┘     │
│                          │                                │
│                          ▼                                │
│  ┌─────────────────────────────────────────────────┐     │
│  │              Mark sheet given.                    │     │
│  └─────────────────────────────────────────────────┘     │
│                                                           │
│                                                           │
└───────────────────────────────────────────────────────────┘
```
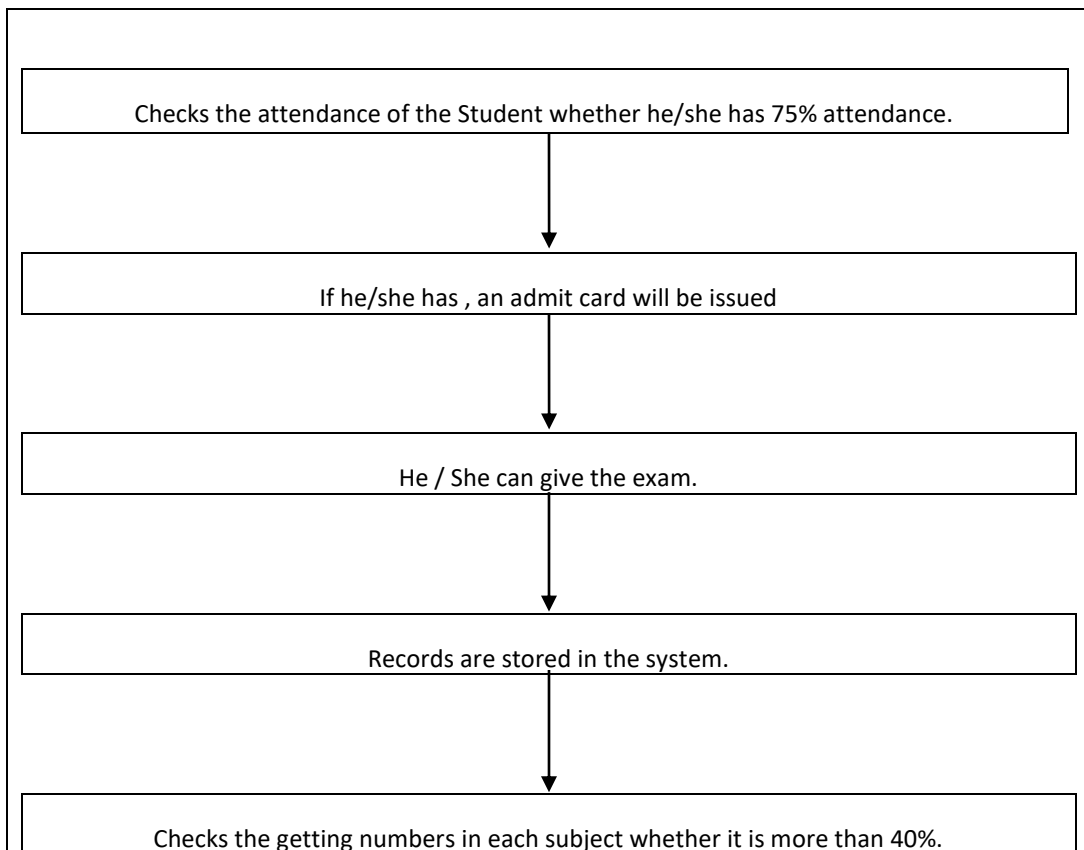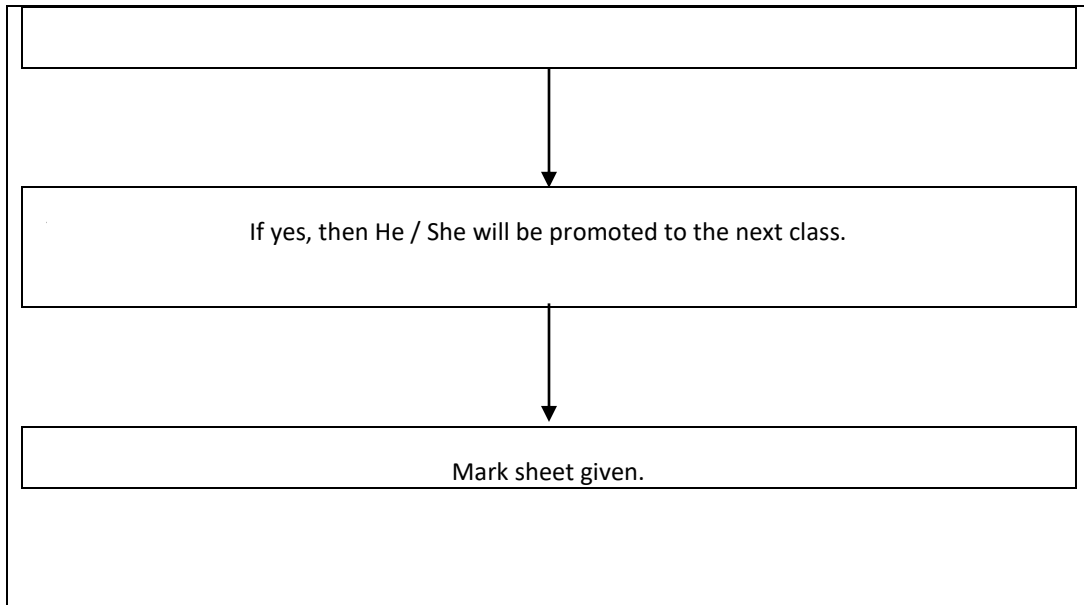
DOCUMENTS MAINTAINED

- **Admission Register**: Form Number, Student Name, Address with Contact Number, Mother's Name, Father's Name, Parent's Income per annum, Parent's qualification, Initial amount for registration, Form Submission Date.

- **Enrolment Register:** Form Number, Student Name,Address with Contact Number, Parent's name, Deposit Amount, Amount Received Date, Student Assigned to (Class).

- **Examination Register:** Enrolment Number, Student Name, Address with Contact Number, Attendance, Class Performance, Deposit Amount check, Received Amount date.

- **Grade card generation:** Enrolment Number, Student name, Address with Contact Number, Getting marks, Grand total, Percentage Marks, Grade given, Position given.

WORK TO BE DONE

We will incorporate the above mentioned workflow of aSchool Management System in an automatic computerized way.

REQUIREMENTS SPECIFICATION

FUNCTIONAL REQUIREMENTS

VIEW AND ENTER NEW STUDENT AND EMPLOYEE INFORMATION

Introduction

The details of a new student are stored into a student profile. Only School administration department can enter that details of new student but and teachers can only updated the existing student status. Details of employee are also kept into individual employee profile and it will also be updated by School Administration System.

Input

Relevant student and employee data like name, address, contact no., applying for which class.

Processing

Employee will enter data in SMS and create a new Student enrolment no, as well as a new code number for Employee.

Output

SMS will generate Enrolment no. for Student and Code no. for Employee .Details can be viewed later on whenever required.

VIEW AND ENTER NEW TIMETABLE INFORMATION

Introduction

Employee can view the time table and can also update the timetable information.

Input

Employee number, department number andWeek range

Processing

Employee number and department number must be unique, and when entering timetable of any employee or teacher both values must be valid references. Week range must be between 1to 52.

Output

Teacher and Student both can see the time table.

SECURITY

Introduction

Only the high level members of the School and Network manager will have access to the system for securing their important data from others.

Input

System username and password

Processing

The network operating system in the department will be used to enforce security.Another security level should also be incorporated to make the system more secure.

Output

All data are secured and that can be used in future.

CHANGING PASSWORD AND USERNAME

Introduction

Change existing username and password

Input

New username and password

Processing

Old username and password will be replaced by user provided new username and password after authenticating.

Output

Password and Username can be changed according to the Employee requirement whenever they want to change for better security of the System.

MAIL NOTIFICATION

Introduction

If holiday is declared suddenly, all students, teachers and employees are informed by sending them a mail.

Input

Student and Teacher's name and email id.

Processing

Employee will enter the name, email id and reason of holidays in the SMS and it will generate a message.

Output

Employee and Students get a message from SMS.

EXAM GRADE DETAILS

Introduction

Data sheets are prepared for individual class. And each datasheet is given via email to the student of the corresponding class.

Input

Student name, marks in individual subject, attendance, class performance.

Processing

Grade card can be generated for individual students. Exam administrators would need to be able to view, update, delete, print and add grade details.

Output

A printed Grade card can be given to the student as well as anemail can be received by the student with Grade card.

FEES DETAILS

Introduction

Fees details of all Students are kept and they are reminded after every 4 days after last date. Late Fee is also charged after last date.

Input

Student name, enrolment no, remaining fees, last date of deposit amount.

Processing

SMS automatically generates a message and send it to the student email id.

Output

Students are reminded after every 4 days after last date.

TECHNICAL SPECIFICATION

Front End/ GUI Tools: Windows Presentation Framework (WPF)

IDE: Visual Studio 2010

Framework: Microsoft .NET 4.0

Database: MySQL
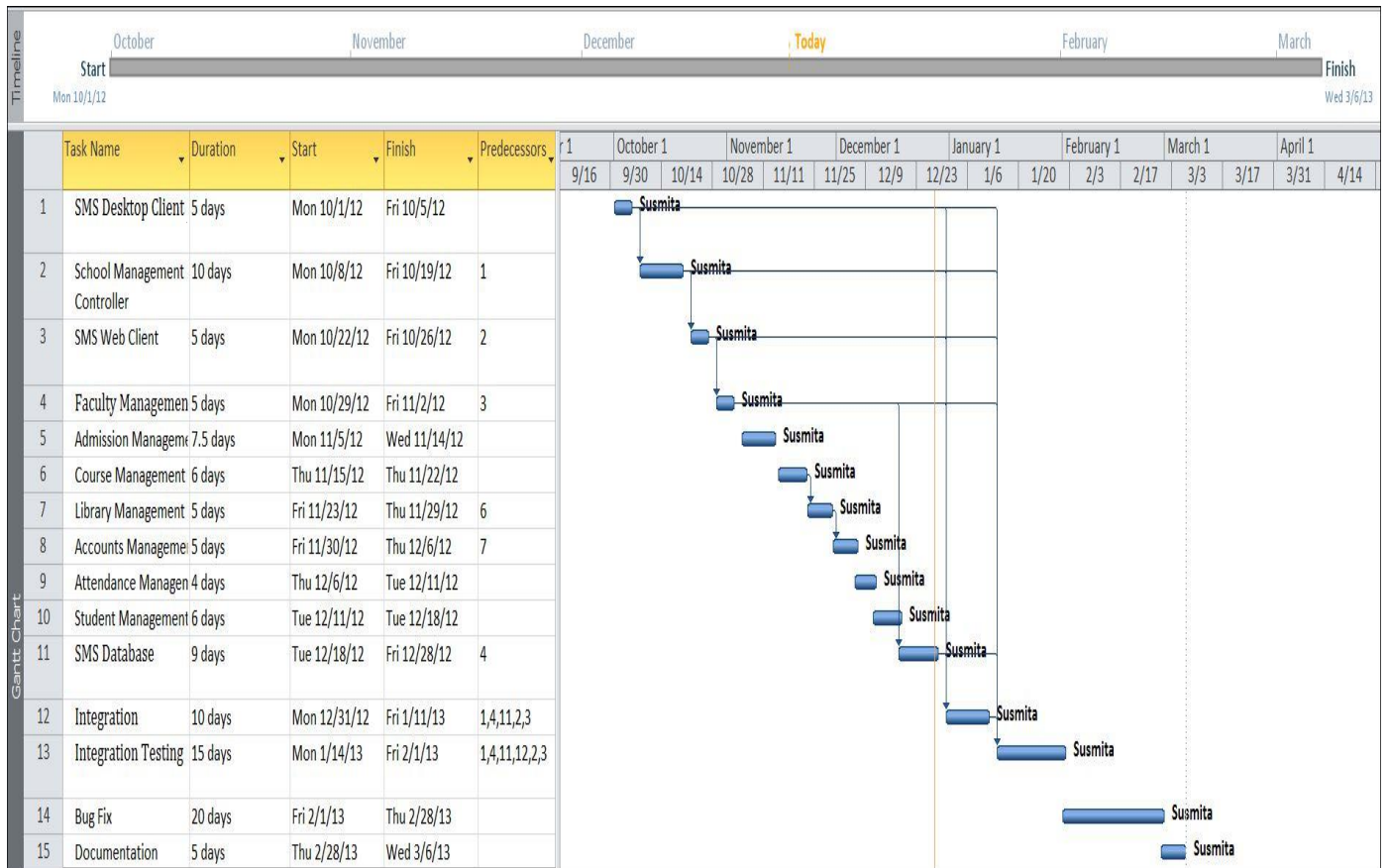
Database Tool: MySQL workbench CE

Operating Systems: Windows XP, Windows 7
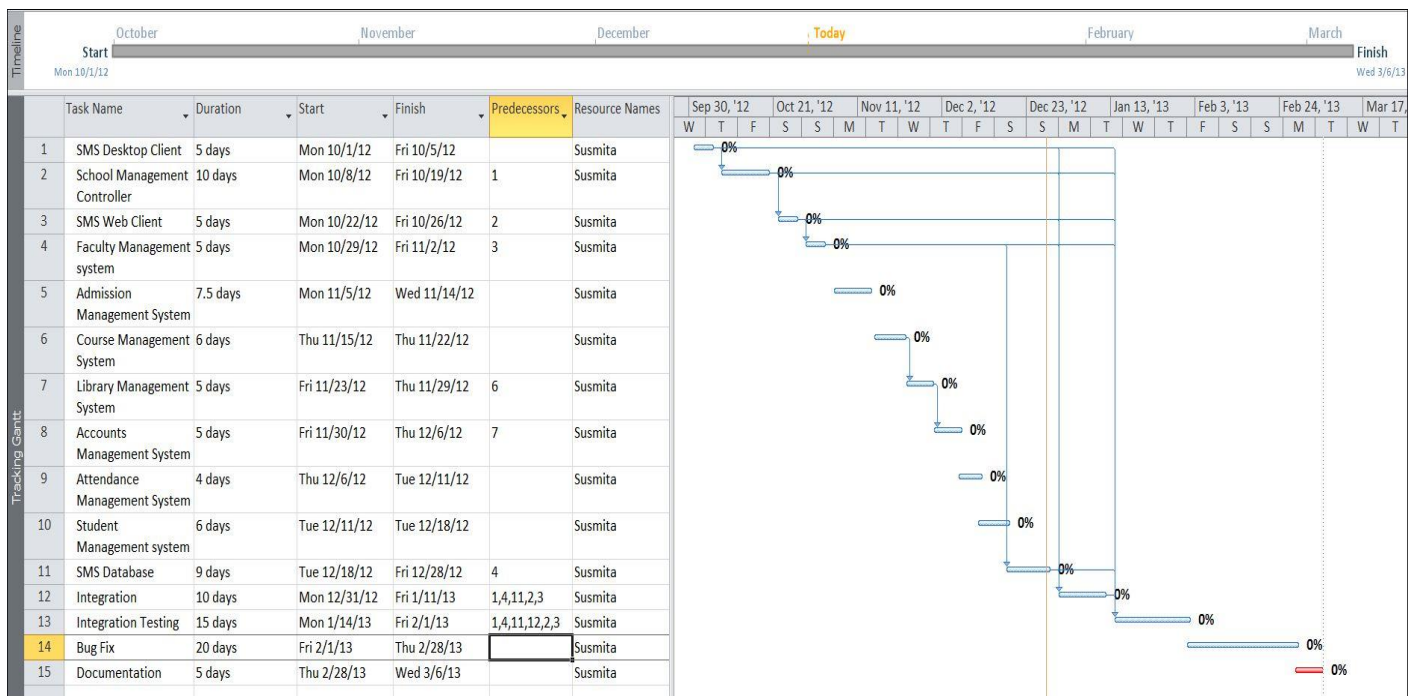
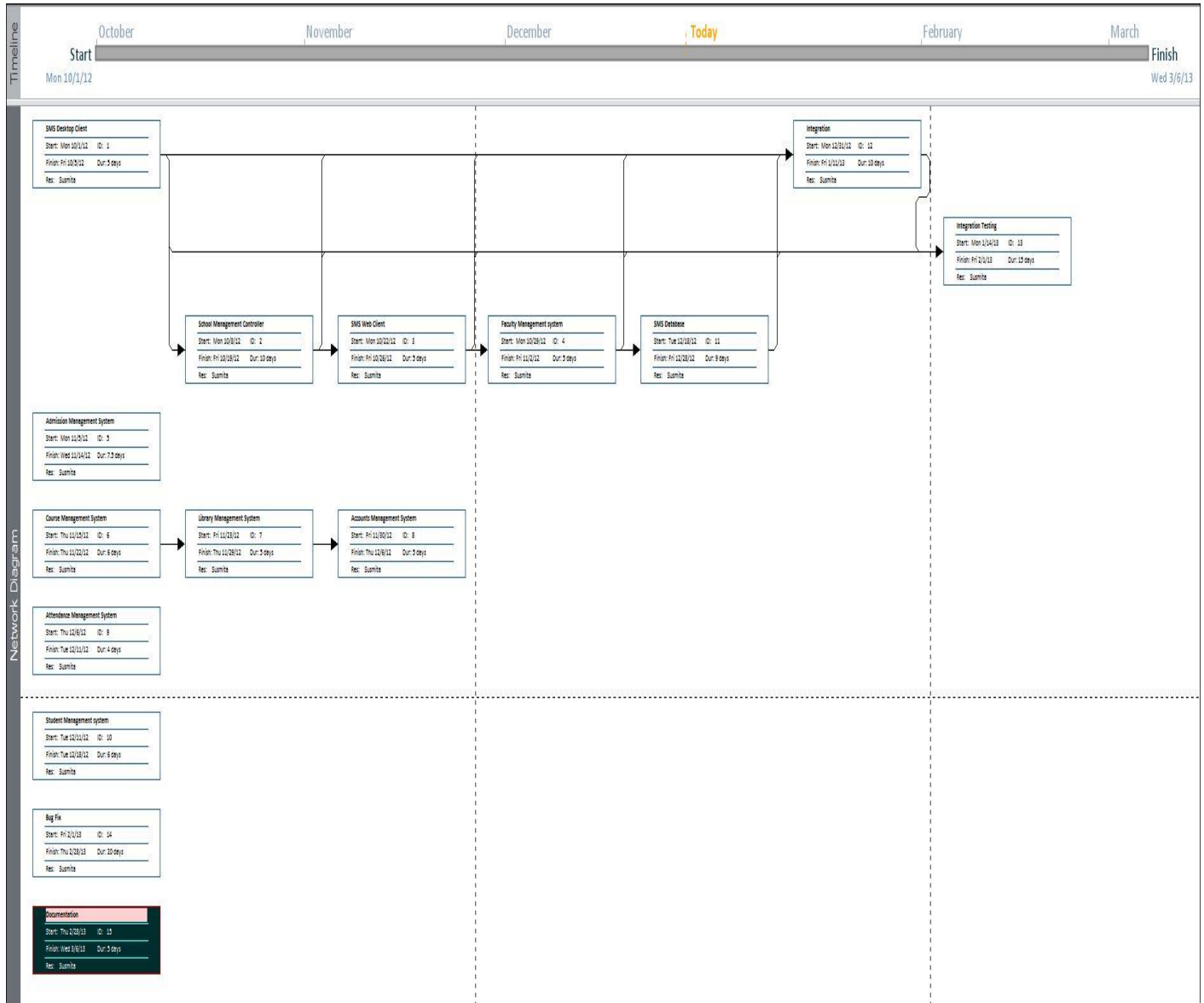**Cloud Technology**: Google Drive, Google forms

PLANNING AND SCHEDULING

GANTT CHART

Gantt Chart

	Task Name	Duration	Start	Finish	Predecessors
1	SMS Desktop Client	5 days	Mon 10/1/12	Fri 10/5/12	
2	School Management Controller	10 days	Mon 10/8/12	Fri 10/19/12	1
3	SMS Web Client	5 days	Mon 10/22/12	Fri 10/26/12	2
4	Faculty Managemen	5 days	Mon 10/29/12	Fri 11/2/12	3
5	Admission Manageme	7.5 days	Mon 11/5/12	Wed 11/14/12	
6	Course Management	6 days	Thu 11/15/12	Thu 11/22/12	
7	Library Management	5 days	Fri 11/23/12	Thu 11/29/12	6
8	Accounts Manageme	5 days	Fri 11/30/12	Thu 12/6/12	7
9	Attendance Managen	4 days	Thu 12/6/12	Tue 12/11/12	
10	Student Management	6 days	Tue 12/11/12	Tue 12/18/12	
11	SMS Database	9 days	Tue 12/18/12	Fri 12/28/12	4
12	Integration	10 days	Mon 12/31/12	Fri 1/11/13	1,4,11,2,3
13	Integration Testing	15 days	Mon 1/14/13	Fri 2/1/13	1,4,11,12,2,3
14	Bug Fix	20 days	Fri 2/1/13	Thu 2/28/13	
15	Documentation	5 days	Thu 2/28/13	Wed 3/6/13	

TRACKING GANTT

	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1	SMS Desktop Client	5 days	Mon 10/1/12	Fri 10/5/12		Susmita
2	School Management Controller	10 days	Mon 10/8/12	Fri 10/19/12	1	Susmita
3	SMS Web Client	5 days	Mon 10/22/12	Fri 10/26/12	2	Susmita
4	Faculty Management system	5 days	Mon 10/29/12	Fri 11/2/12	3	Susmita
5	Admission Management System	7.5 days	Mon 11/5/12	Wed 11/14/12		Susmita
6	Course Management System	6 days	Thu 11/15/12	Thu 11/22/12		Susmita
7	Library Management System	5 days	Fri 11/23/12	Thu 11/29/12	6	Susmita
8	Accounts Management System	5 days	Fri 11/30/12	Thu 12/6/12	7	Susmita
9	Attendance Management System	4 days	Thu 12/6/12	Tue 12/11/12		Susmita
10	Student Management system	6 days	Tue 12/11/12	Tue 12/18/12		Susmita
11	SMS Database	9 days	Tue 12/18/12	Fri 12/28/12	4	Susmita
12	Integration	10 days	Mon 12/31/12	Fri 1/11/13	1,4,11,2,3	Susmita
13	Integration Testing	15 days	Mon 1/14/13	Fri 2/1/13	1,4,11,12,2,3	Susmita
14	Bug Fix	20 days	Fri 2/1/13	Thu 2/28/13		Susmita
15	Documentation	5 days	Thu 2/28/13	Wed 3/6/13		Susmita

PERT CHART (NETWORK DIAGRAM)

<table>
<tr><td colspan="7">

Timeline

October	November	December	**Today**	February	March

Start — Mon 10/1/12 .... Finish — Wed 3/6/13

</td></tr>
</table>

Network Diagram

SMS Desktop Client	Integration
Start: Mon 10/1/12 ID: 1	Start: Mon 12/31/12 ID: 12
Finish: Fri 10/5/12 Dur: 5 days	Finish: Fri 1/11/13 Dur: 10 days
Res: Susmita	Res: Susmita

Integration Testing
Start: Mon 1/14/13 ID: 13
Finish: Fri 2/1/13 Dur: 15 days
Res: Susmita

School Management Controller	SMS Web Client	Faculty Management system	SMS Database
Start: Mon 10/8/12 ID: 2	Start: Mon 10/22/12 ID: 3	Start: Mon 10/29/12 ID: 4	Start: Tue 12/18/12 ID: 11
Finish: Fri 10/19/12 Dur: 10 days	Finish: Fri 10/26/12 Dur: 5 days	Finish: Fri 11/2/12 Dur: 5 days	Finish: Fri 12/28/12 Dur: 9 days
Res: Susmita	Res: Susmita	Res: Susmita	Res: Susmita

Admission Management System
Start: Mon 11/5/12 ID: 5
Finish: Wed 11/14/12 Dur: 7.5 days
Res: Susmita

Course Management System	Library Management System	Accounts Management System
Start: Thu 11/15/12 ID: 6	Start: Fri 11/23/12 ID: 7	Start: Fri 11/30/12 ID: 8
Finish: Thu 11/22/12 Dur: 6 days	Finish: Thu 11/29/12 Dur: 5 days	Finish: Thu 12/6/12 Dur: 5 days
Res: Susmita	Res: Susmita	Res: Susmita

Attendance Management System
Start: Thu 12/6/12 ID: 9
Finish: Tue 12/11/12 Dur: 4 days
Res: Susmita

Student Management system
Start: Tue 12/11/12 ID: 10
Finish: Tue 12/18/12 Dur: 6 days
Res: Susmita

Bug Fix
Start: Fri 2/1/13 ID: 14
Finish: Thu 2/28/13 Dur: 20 days
Res: Susmita

Documentation
Start: Thu 2/28/13 ID: 15
Finish: Wed 3/6/13 Dur: 5 days
Res: Susmita

SCOPE OF THE SOLUTION

Currently this software is aimed for a single school management. It can be extended to support networked multiple school and have a centralized database and to serve wider range of students of different branches of same School around the country.

We have developed this for Desktop Computers running on Windows Operating System. It can be enhanced to support UNIX / Linux, MAC OSX Operating systems.

Our software will not be integrated with Mobile Application right now. But in future we can easily extend to support that.
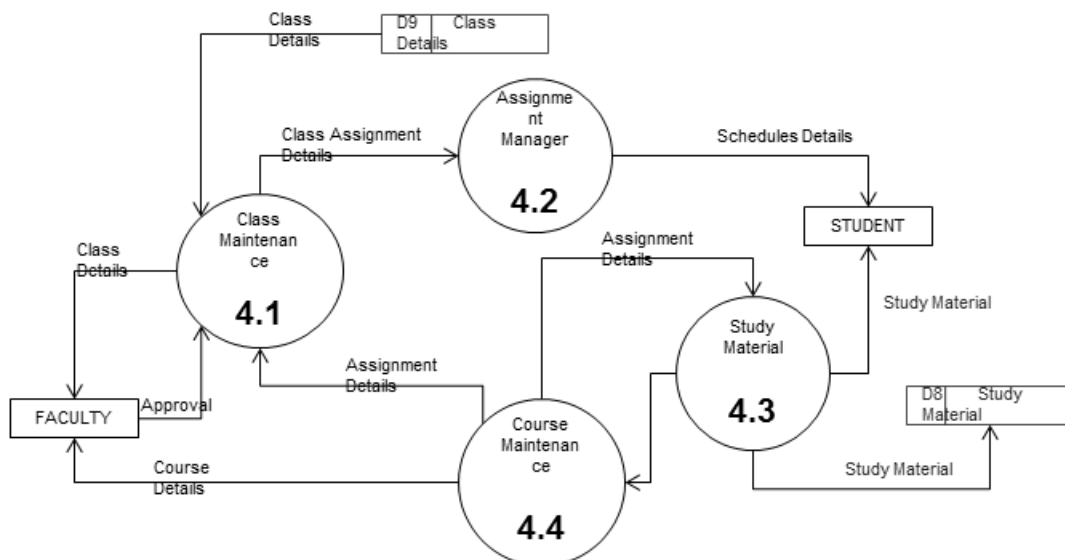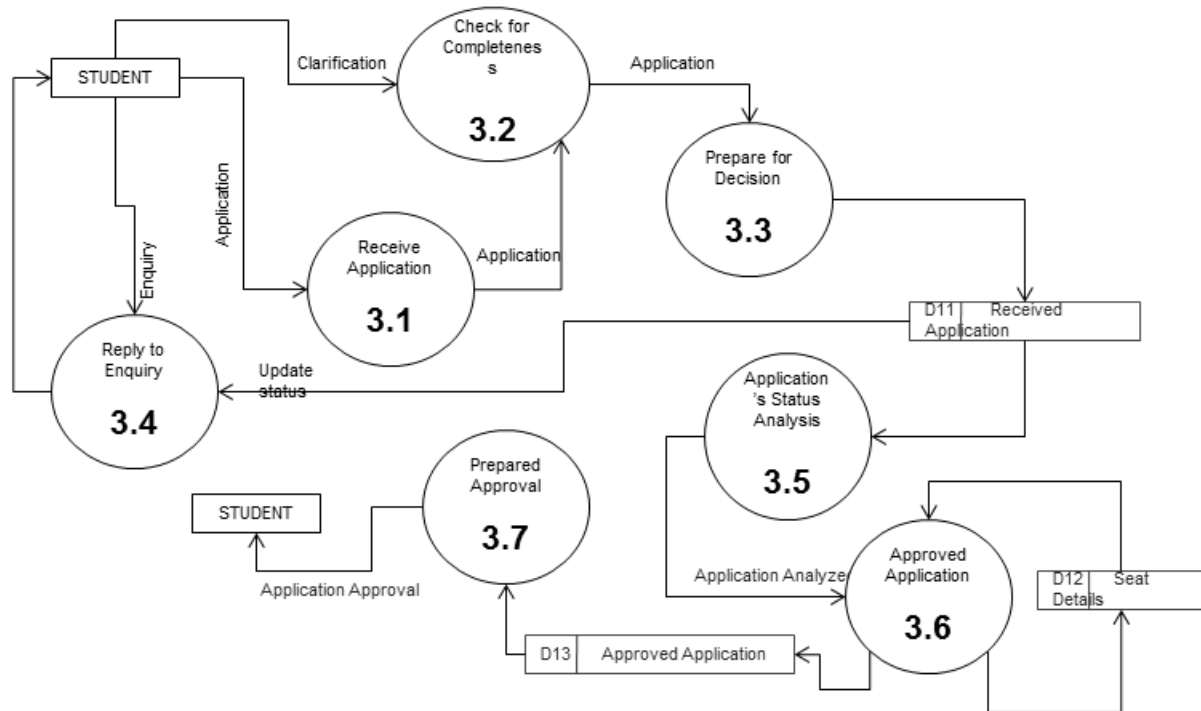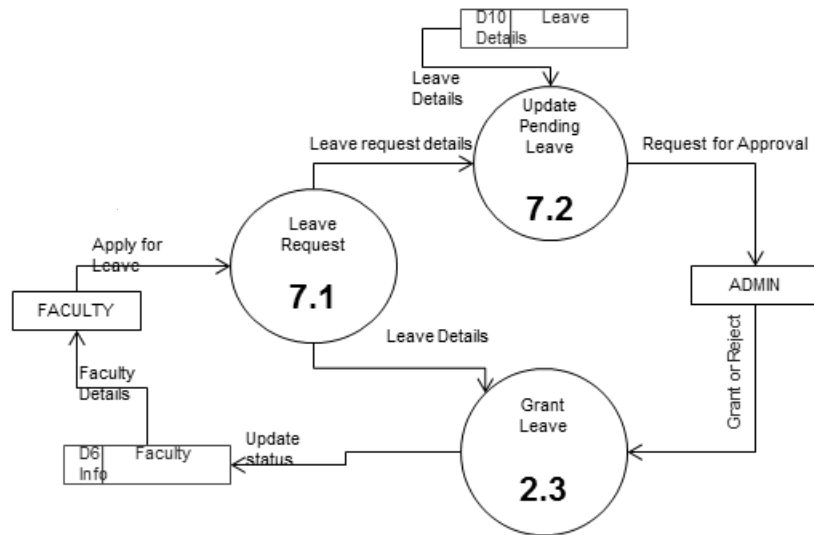
ANALYSIS

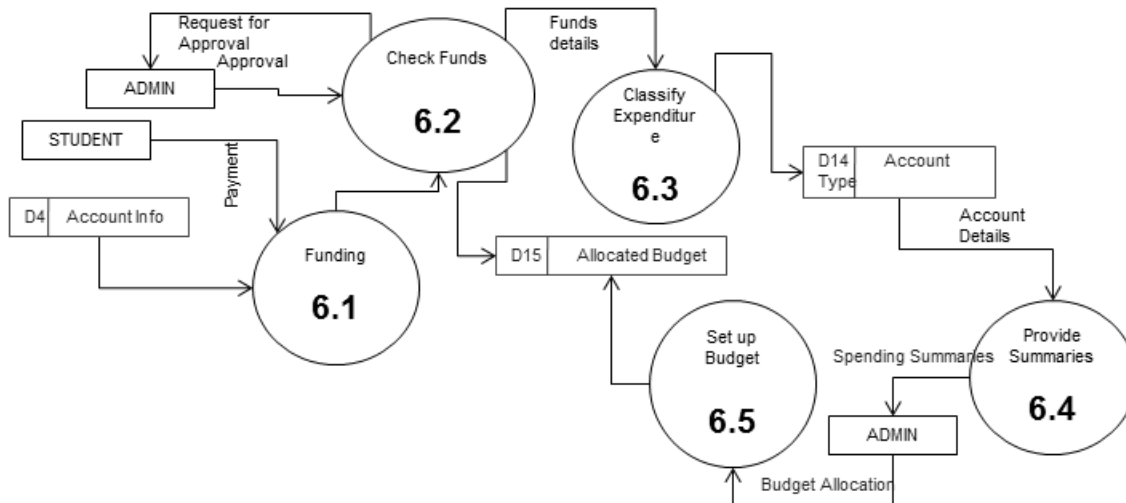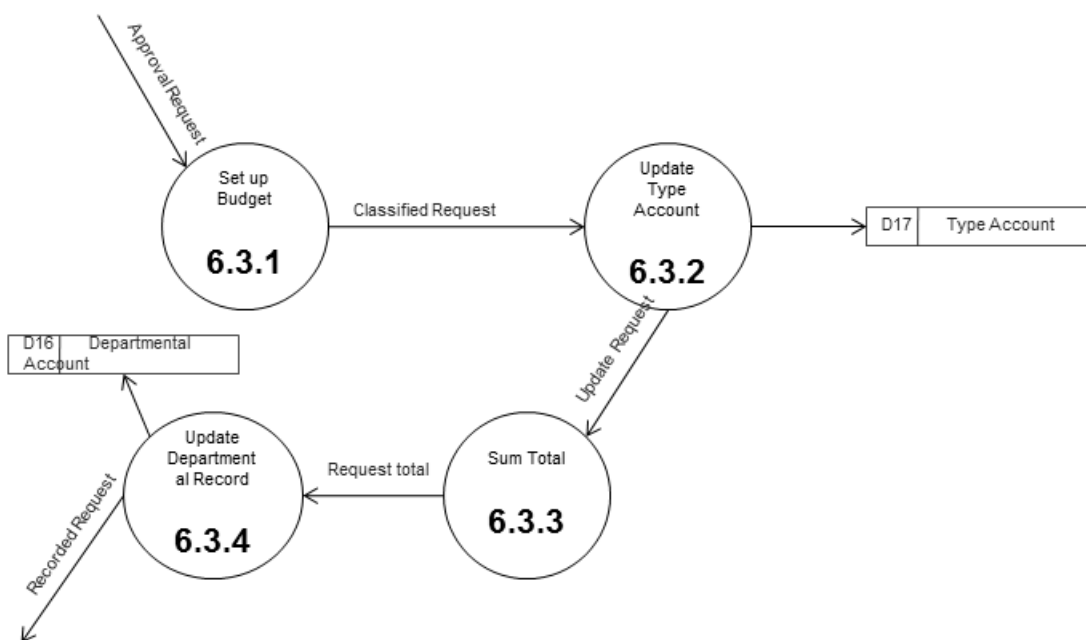## CONTEXT DIAGRAM
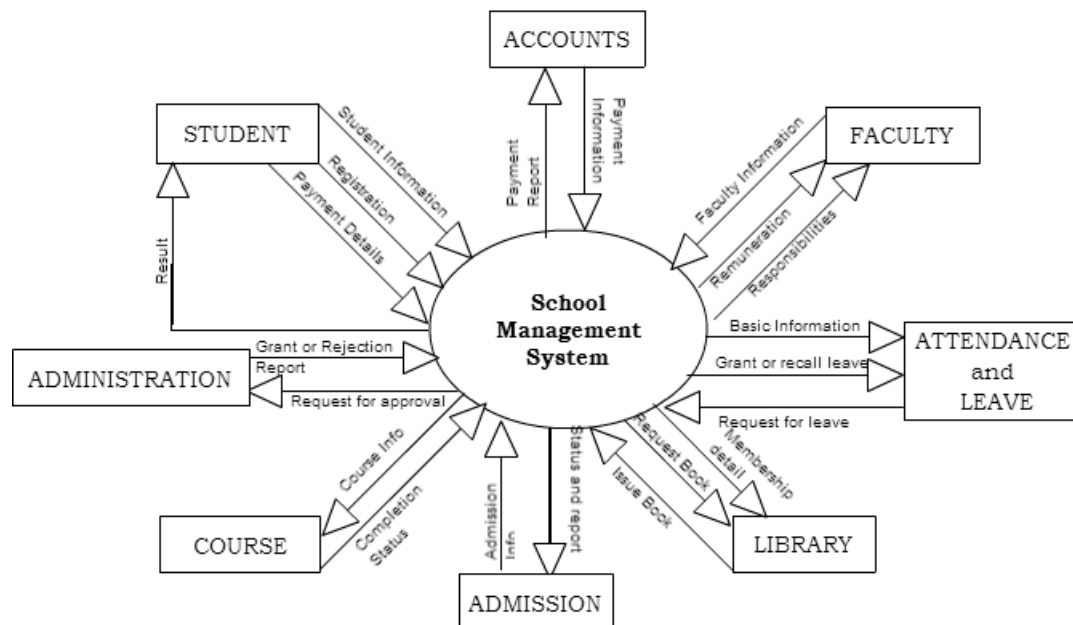
DATA FLOW DIAGRAM

LEVEL 0 DFD

LEVEL 1 DFD

Upper diagram:

D10 Leave Details

Leave Details

Update Pending Leave **7.2**

Leave request details

Leave Request **7.1**

Apply for Leave

FACULTY

Faculty Details

D6 Faculty Info

Update status

Request for Approval

ADMIN

Grant or Reject

Leave Details

Grant Leave **2.3**

Lower diagram:

STUDENT

Clarification

Check for Completeness **3.2**

Application

Prepare for Decision **3.3**

Application

Receive Application **3.1**

Application

Application

Enquiry

Reply to Enquiry **3.4**

Update status

D11 Received Application

Application's Status Analysis **3.5**

STUDENT

Prepared Approval **3.7**

Application Approval

Application Analyze

Approved Application **3.6**

D12 Seat Details

D13 Approved Application

LEVEL 2 DFD

E-R DIAGRAM

We will design a RDBMS for School Management System. The entities and their attributes are listed below.
Attributes in Bold letter is the unique key.

Entities	Attributes
Student	**Student_ID**, Student_DOB, Student_Name, Student_Parent_Name, Student_Address, Student_Admission_Date, Student_Course_Name, Student_Contact
Account	**Transaction_ID**, Transaction_Amount, Transaction_Type, Transaction_Reason,Account_Balance
Admin	**Staff_ID**, Staff_Name, Staff_Permission_Level, Staff_Address, Staff_Admission_Date, Staff_Course_Name, Staff_Contract_details, Staff_Join_Date, Staff_Email, Staff_Role
Books	**Book_ID**, Book_Name, Book_Author, Purchase_Date, Book_Status, Book_Description,Purchase_Amount
Faculty	**Faculty_ID**, Faculty_Name, Faculty_Address, Faculty_Join_Date, Faculty_Course_Under, Faculty_Contact_Details, Faculty_Salary_Details
Course	**Course_ID**, Course_Faculty, Course_Name, Required_Qualification, Course_Fees, Course_Admission_Date, Students_Under, Course_Description

Relationship between Entities:

School Management System has Courses 1 : N

School Management Systemhas Students 1 : N

School Management System has Faculties1 : N

School Management System has Admin 1 : 1

Studenthas Attendance 1 : 1

AdminChecksAttendance 1 : 1

StudentsreadsBooks M : N

StudentspaysAccount 1 : 1

AdminControlsAccount 1 : 1

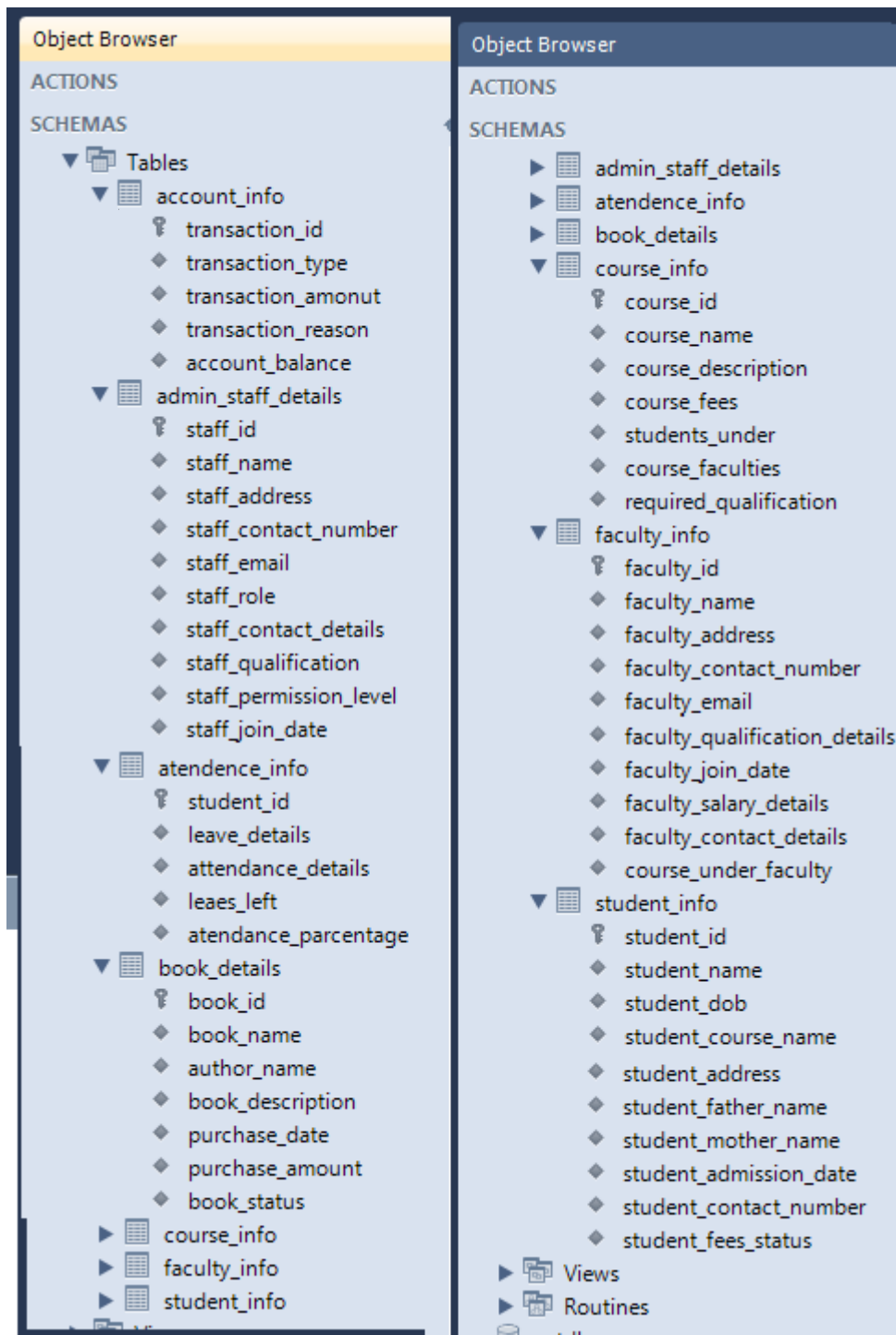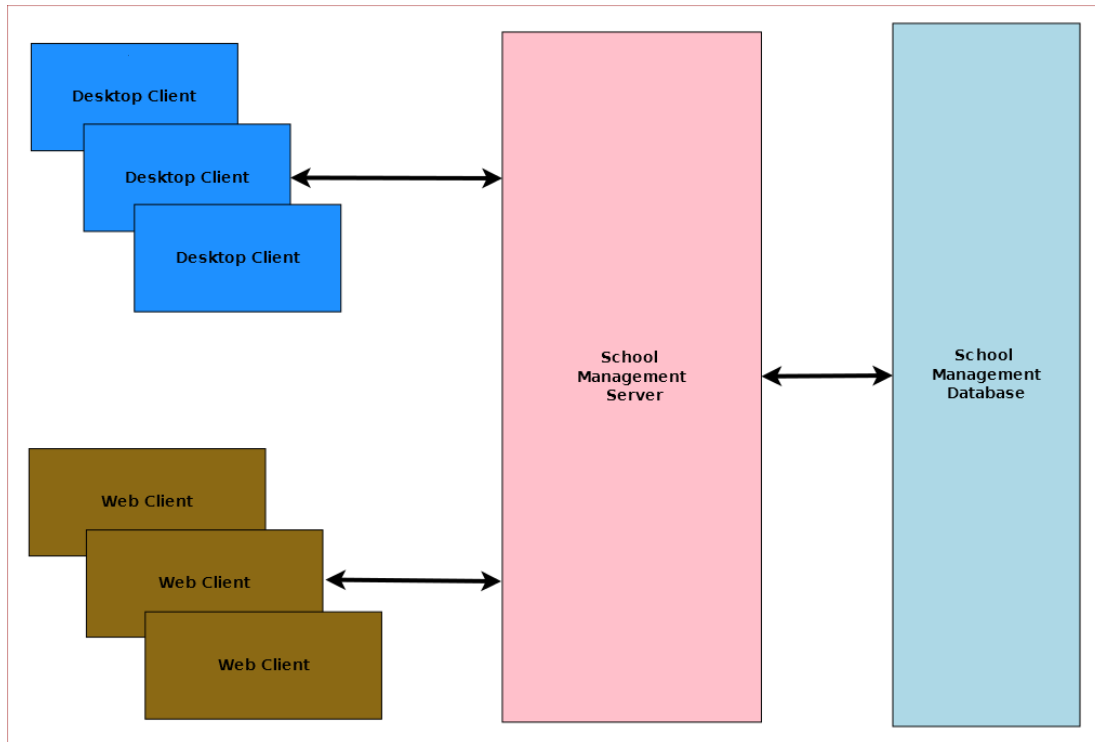Students Studies in Course N:1

CLASS DIAGRAM
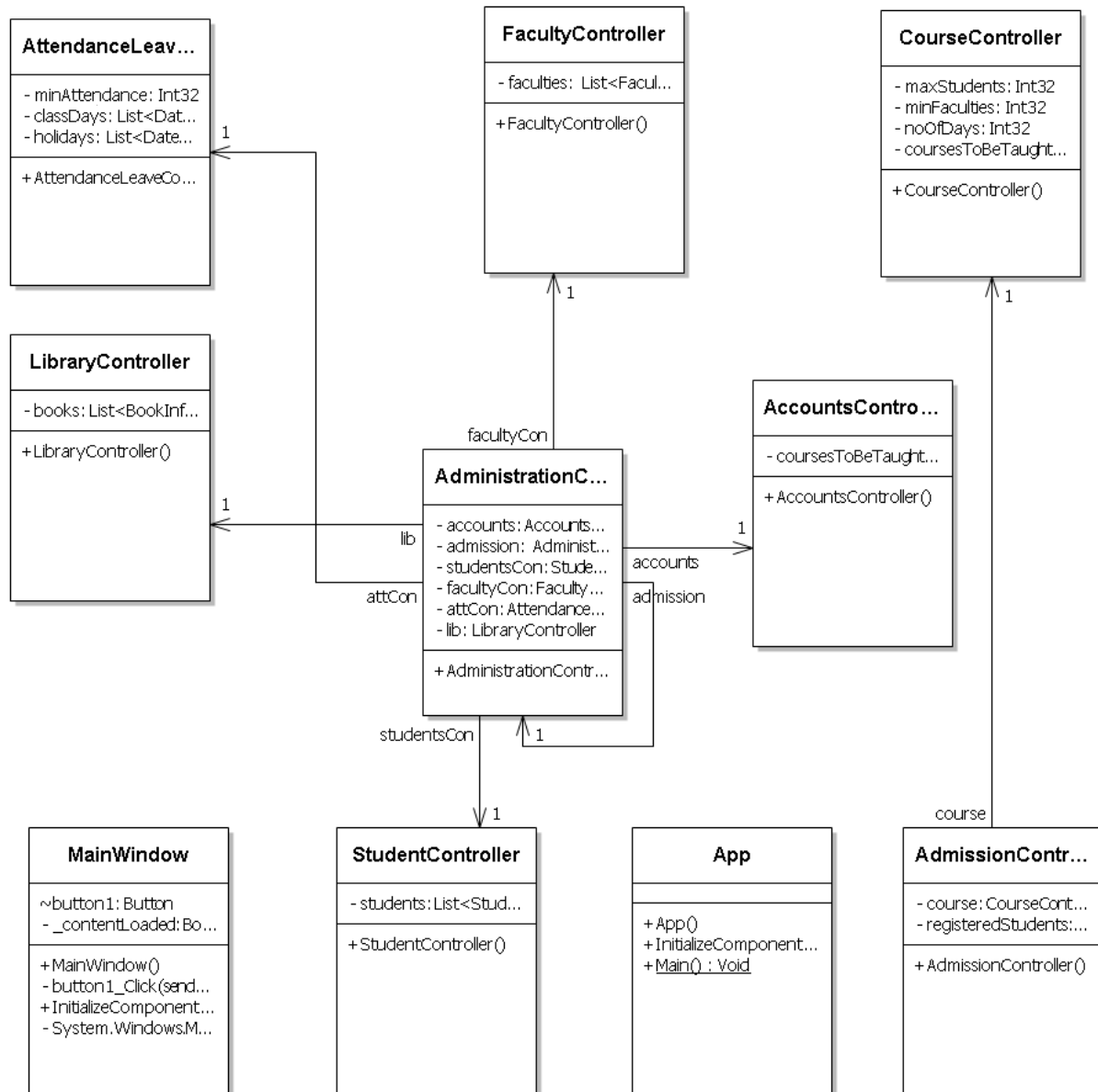
DATABASE & TABLE DETAILS

The database used for this software is called **smsdb**. A screenshot from the MySQl workbench is given below. It shows the tables and its columns. The first row is the primary key.

MODULE DESCRIPTION

School Management System is divided three main modules such as:

1. School Management Server
2. School Management Client
3. School Management Database

SCHOOL MANAGEMENT SERVER

School Management server is a singleton server designed provide services for school management system. It controls various activities required for the school management system. To manage these activities it has several sub modules such as:

1. Admission Management
2. Student Management
3. Faculty Management
4. Course Management
5. Attendance & Leave Management
6. Library Management
7. Accounts Management
8. Administration Management

SCHOOL MANAGEMENT CLIENT

School Management System will provide two different clients for the convenience of the user. Desktop client is for doing bulk activities and faster tasks. Web client will allow instant access from anywhere and anytime.

SCHOOL MANAGEMENT DATABASE

School Management System will have a unified database for storing all the information. It can be a networked database or a database situated in the server machine.

ESTIMATION

	Task Name	Work	Duration	Start	Finish
1	⊟ SMS Desktop Client	40 hrs	5 days	Mon 10/1/12	Fri 10/5/12
	Susmita	40 hrs		Mon 10/1/12	Fri 10/5/12
2	⊟ School Management Controller	80 hrs	10 days	Mon 10/8/12	Fri 10/19/12
	Susmita	80 hrs		Mon 10/8/12	Fri 10/19/12
3	⊟ SMS Web Client	40 hrs	5 days	Mon 10/22/12	Fri 10/26/12
	Susmita	40 hrs		Mon 10/22/12	Fri 10/26/12
4	⊟ Faculty Management system	40 hrs	5 days	Mon 10/29/12	Fri 11/2/12
	Susmita	40 hrs		Mon 10/29/12	Fri 11/2/12
5	⊟ Admission Management System	60 hrs	7.5 days	Mon 11/5/12	Wed 11/14/12
	Susmita	60 hrs		Mon 11/5/12	Wed 11/14/12
6	⊟ Course Management System	48 hrs	6 days	Thu 11/15/12	Thu 11/22/12
	Susmita	48 hrs		Thu 11/15/12	Thu 11/22/12
7	⊟ Library Management System	40 hrs	5 days	Fri 11/23/12	Thu 11/29/12
	Susmita	40 hrs		Fri 11/23/12	Thu 11/29/12
8	⊟ Accounts Management System	40 hrs	5 days	Fri 11/30/12	Thu 12/6/12
	Susmita	40 hrs		Fri 11/30/12	Thu 12/6/12
9	⊟ Attendance Management System	32 hrs	4 days	Thu 12/6/12	Tue 12/11/12
	Susmita	32 hrs		Thu 12/6/12	Tue 12/11/12
10	⊟ Student Management system	48 hrs	6 days	Tue 12/11/12	Tue 12/18/12
	Susmita	48 hrs		Tue 12/11/12	Tue 12/18/12
11	⊟ SMS Database	72 hrs	9 days	Tue 12/18/12	Fri 12/28/12
	Susmita	72 hrs		Tue 12/18/12	Fri 12/28/12
12	⊟ Integration	80 hrs	10 days	Mon 12/31/12	Fri 1/11/13
	Susmita	80 hrs		Mon 12/31/12	Fri 1/11/13
13	⊟ Integration Testing	120 hrs	15 days	Mon 1/14/13	Fri 2/1/13
	Susmita	120 hrs		Mon 1/14/13	Fri 2/1/13
14	⊟ Bug Fix	160 hrs	20 days	Fri 2/1/13	Thu 2/28/13
	Susmita	160 hrs		Fri 2/1/13	Thu 2/28/13
15	⊟ Documentation	40 hrs	5 days	Thu 2/28/13	Wed 3/6/13
	Susmita	40 hrs		Thu 2/28/13	Wed 3/6/13