A

Project Design Report

On

"STUDENTS PORTAL"

By

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A) Overview

The undertaken project involves creation of a portal (A gateway for websites whose purpose is to be starting point for users when they get connected to Web or Network) which will assist students in their day to day academics and miscellaneous activities. The primary emphasis of the project is laid on student assistance followed by the teachers. The project involves built up of a facility for generic update of website with easy interface for administrator. The portal would have three fundamental logins: Administrator, Teacher and Student. The basic aim of the project is to provide the users with important resources present at the backend server along with that present over internet.

Thus, the portal would act as a gateway that offers broad array of services and resources such as forums, online study material, online student records, online news and notifications, online score cards, etc.

B) Software Requirement Specification

1. Introduction

1.1 Existing System

The existing system without applying or applying very less computing power would tend to be less efficient and time consuming. Considering few aspects required for college activities we can exemplify the same:

- The study material required for the students will always be in paper form and hence it will be in limited amount leading to shortage.
- The detailed student's records are to be stored manually in the register or if stored on a computer then it is rarely used on network.
- The resources required by the students over the web are present at diverse locations and they are required to be searched with good skills.
- Report cards are generated manually with long time taken to prepare them right from printing them to handing it to the students.
- The attendance of students is entered manually by the respective teacher and at the end of the term he is required to generate a attendance report to be displayed for students and a student requiring to know his complete attendance details needs to make a request for the purpose.
- Teachers are required to put the tutorials and assignment questions on notice board or provide them during lectures.
- Under the guardianship scheme the students are required to keep the periodic meeting with their respective guardianship.
- Students and teachers have interaction only during college hours with limited scope.

1.2 Proposed System

The proposed system will facilitate an independent access to students, teachers and administrator to have a unique interaction with the portal and to achieve their respective objectives. The concerned administrator will be responsible for making all the updates pertaining to the website via his own login. The teacher would be able to maintain his own profile along with the course information, guardianship scheme information and he will also be provided an interactive facility to submit the student attendance, score cards and tutorials which will be made

available to students as per their logins. Besides student will be provided with facilities like campus notifications, online study material, mailbox for communication, discussion channels i.e. forums, college bulletin board and some other miscellaneous features.

1.3 Purpose

- Primary purpose of the portal is to provide student an interactive gateway to the source of information and save their time.
- Portal also intends to help the college to increase its efficiency by boosting the speed of daily college chores.

1.4 Scope:

The project scope is distributed among following aspects:

- User friendly interface for each user.
- Capability to serve not only valid users but also guest visitors.
- Ability to overcome conventional portal problems and provide more specific facilities pertaining to the requirement.

1.5 Definitions and Acronyms and Abbreviations:

Definitions:

- Portal: Technically, a portal is a network service that brings together content from diverse distributed resources using technologies such as cross searching, harvesting, and alerting, and collate this into an amalgamated form for presentation to the user. This presentation is usually via a web browser, though other means are also possible. For users, a portal is a, possibly personalised, common point of access where searching can be carried out across one or more than one resource and the amalgamated results viewed. Information may also be presented via other means, for example, alerting services and conference listings or links to e-prints and learning materials.
- Forum: On-line discussion channel on the provided subject.
- Authentication: Logging into a system– determining the identity and access rights of a user– typically by requiring them to type in a username and password.

- Client: A computer system or process (such as a web browser) that requests a service (information) from another computer system or process (the server).
- Microsoft .NET: Microsoft .NET is software written by Microsoft for connecting information: people, systems, and devices. It consists of four parts: The .NET Framework which can be used for building and running Web-based applications, developer tools, servers, and client software, (such as Windows).
- Module: In the context of the portal – portal modules are single tools which are displayed on the portal page. For Example Students Profile Tool which will display the students bio data.

Acronyms and Abbreviations:

- GUI :Graphical User Interface
- ER Diagram: Entity Relationship Diagram

2. Overall Description:

2.1 Product Perspective:

The product is developed with the perspective of providing a helping hand to the students to foster their academic activities. The product also suffice the needs and expectations of teaching staff along with the general visitors of the site who wantonly the general information. The product is expected to establish a unique platform for communication among the teachers and students.

2.2 Product Functions:

- ✓ Provide a gateway for students and teachers to utilize the resources made available on site.
- ✓ Provide administrator easy to upload interface.

2.3 User Characteristics:

The system under consideration distinctly deals with following types of users:

1. **Administrator**

   It is the user with following privileges:

   - Site Updates
   - Addition or Removal of users (student and teachers).
   - Resetting user passwords.
   - Updating and maintaining resources and external links.

2. **Student**

   It is the user with following characteristics:

   - Has knowledge to use the information on the site for his academic interest.
   - Capable of maintaining an updated profile of his own.
   - Interested in achieving all the academic fulfillments along with the extra-circular activities.

3. **Teacher**

   It is the user with following privileges:

   - Maintaining attendance of students and scorecards

- Supplying tutorial to students online.
- Has sufficient knowledge about the site and can use th same to improve the student performance by using students information.
- Maintains his own profile for official purpose.

4. **Visitor**

The concerned user only gets the external feel of the site with all the personalized views being concealed.

2.4 Assumptions and Dependencies:

- ❖ All the resources available are assumed to be present at the backend.
- ❖ It is assumed that all the users connected to the network can access the site.
- ❖ It is assumed that the information stored at the backend is safe from any form of external unauthorized access,

3. System Requirements

3.1 Operating System:

MS Windows XP

3.2 Hardware Requirement (For Client):

- INTEL PENTIUM 4 Processor and equivalent and above.
- Minimum:256 MB RAM
- Good Network Connection

3.3 Software Requirement:

- SQL Server 2005

3.4 Programming language:

- .NET platform 2.0.

C) Detailed Design

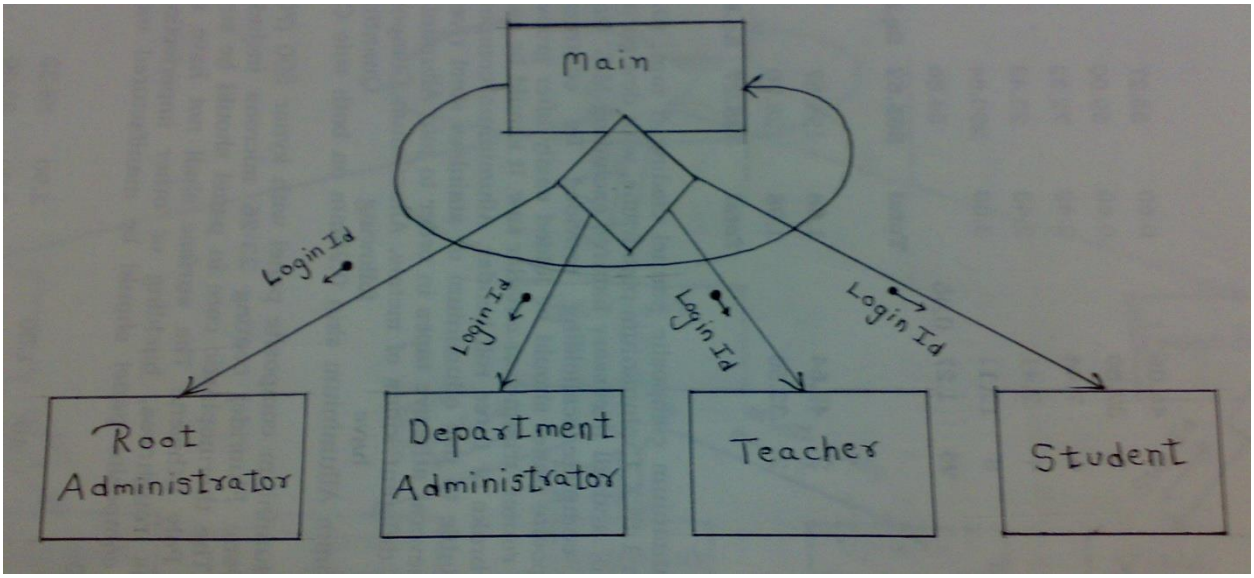
1. Analysis:

1.1. Problem statement:-

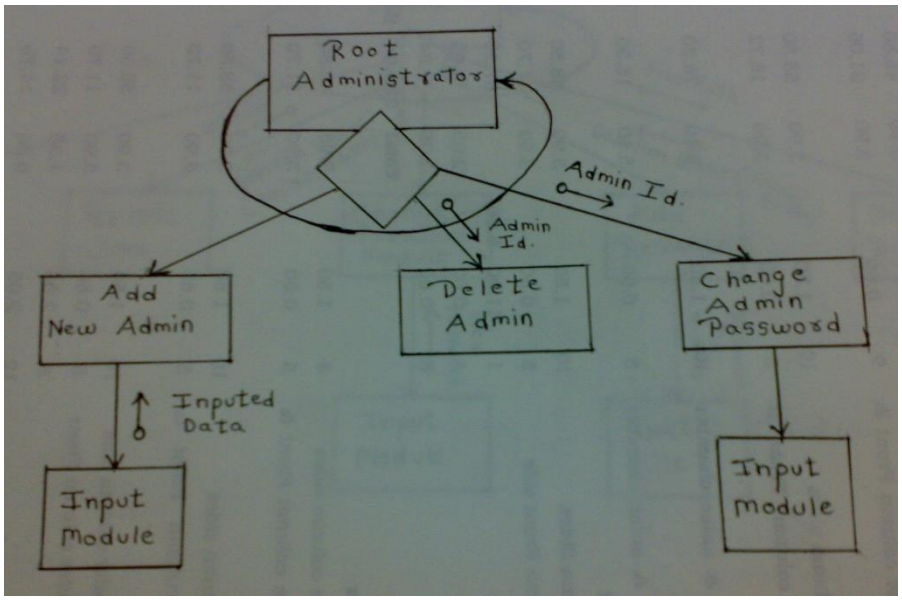
The existing manual system is time consuming and is less interactive. The existing conventional systems do not meet the peculiar needs of the users and are generic in nature. Also the resources if made available in traditional forms are available in limited amount and eventually lead to their shortage. Students need to seek different sources to gather essential resources

1.2 Functional model

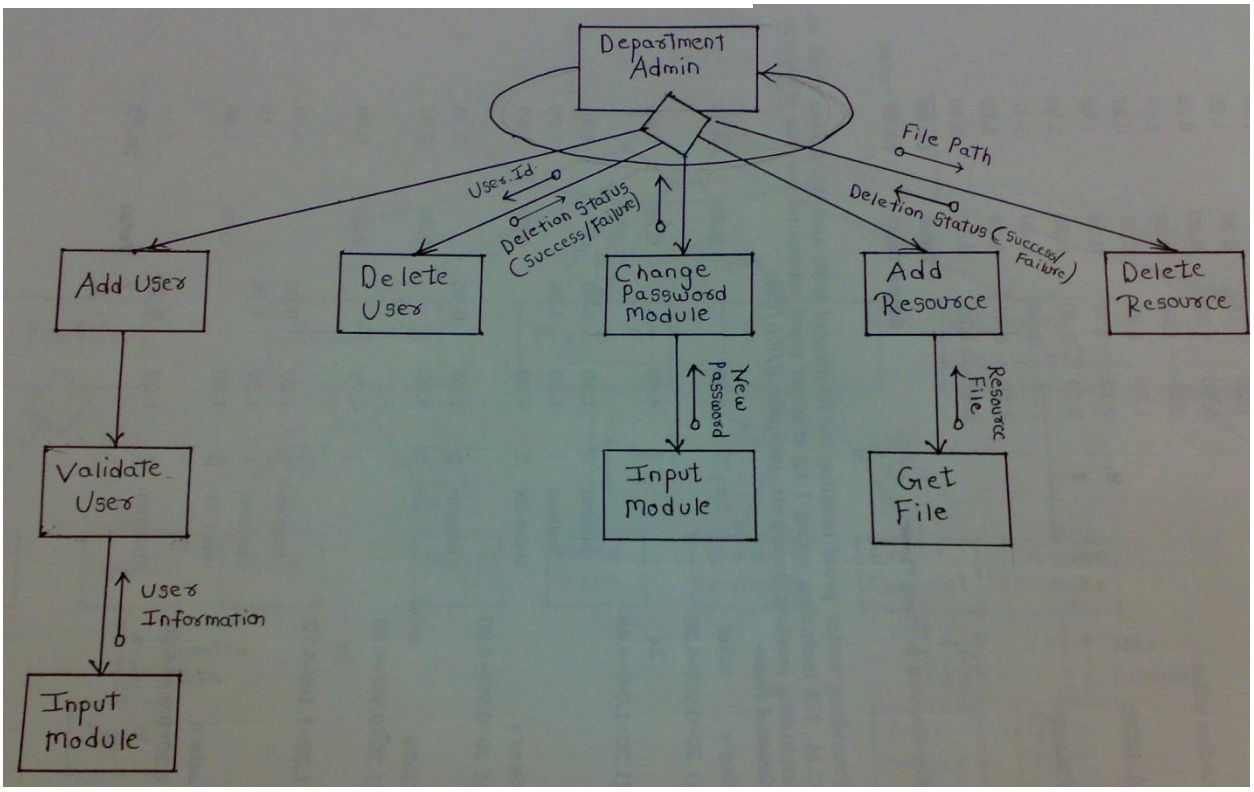
1.2.1 Inputs and output diagram / Structural Chart



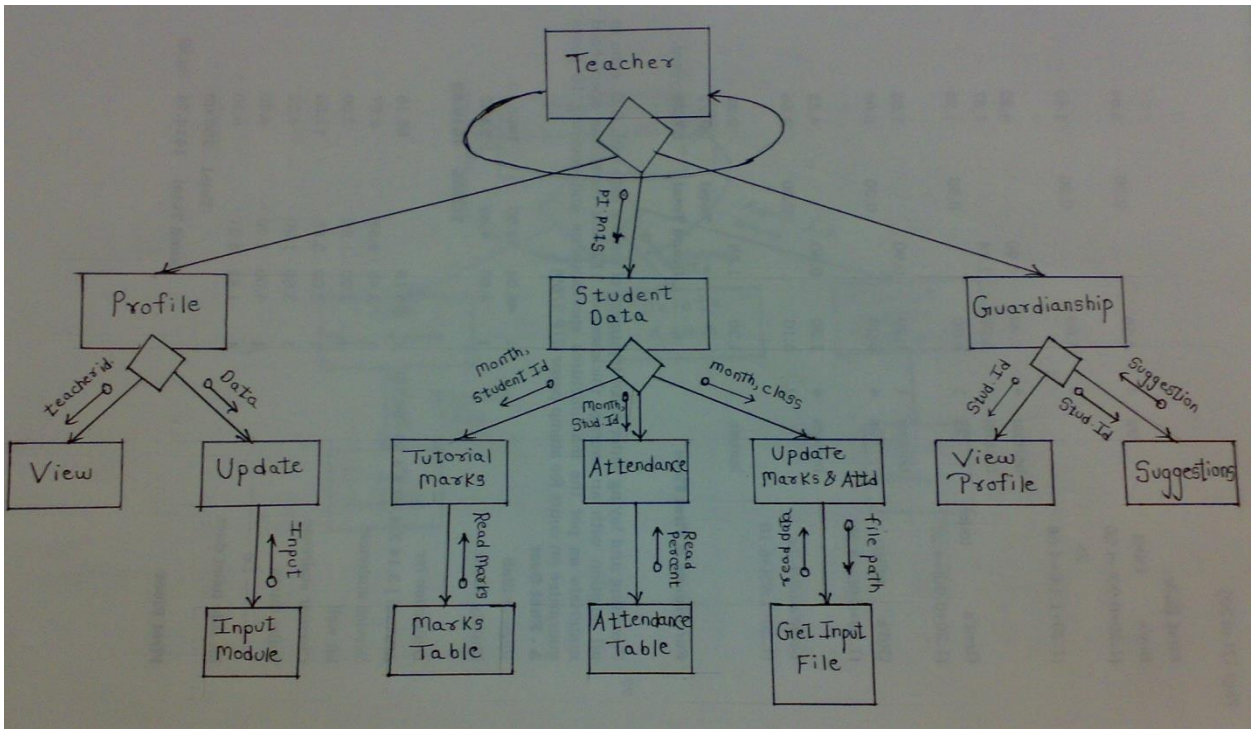
MAIN



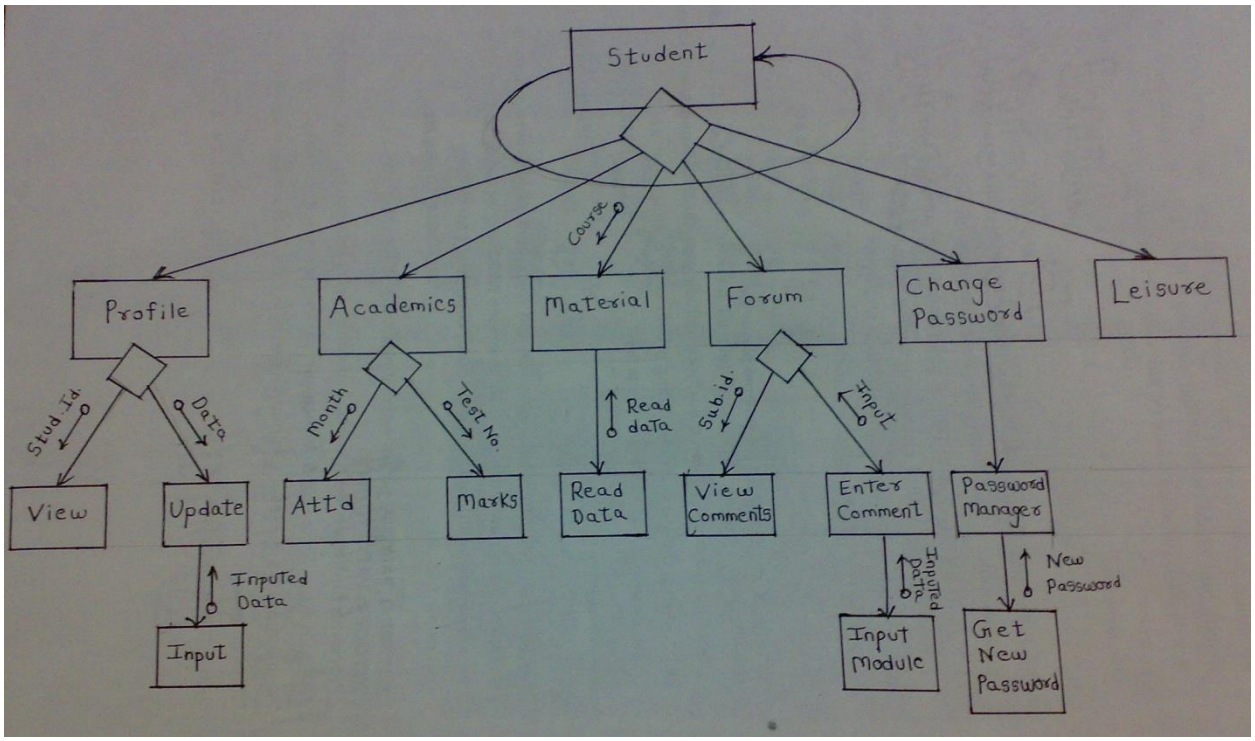
ROOT ADMINISTRATOR



DEPT. ADMINISTRATOR



TEACHER

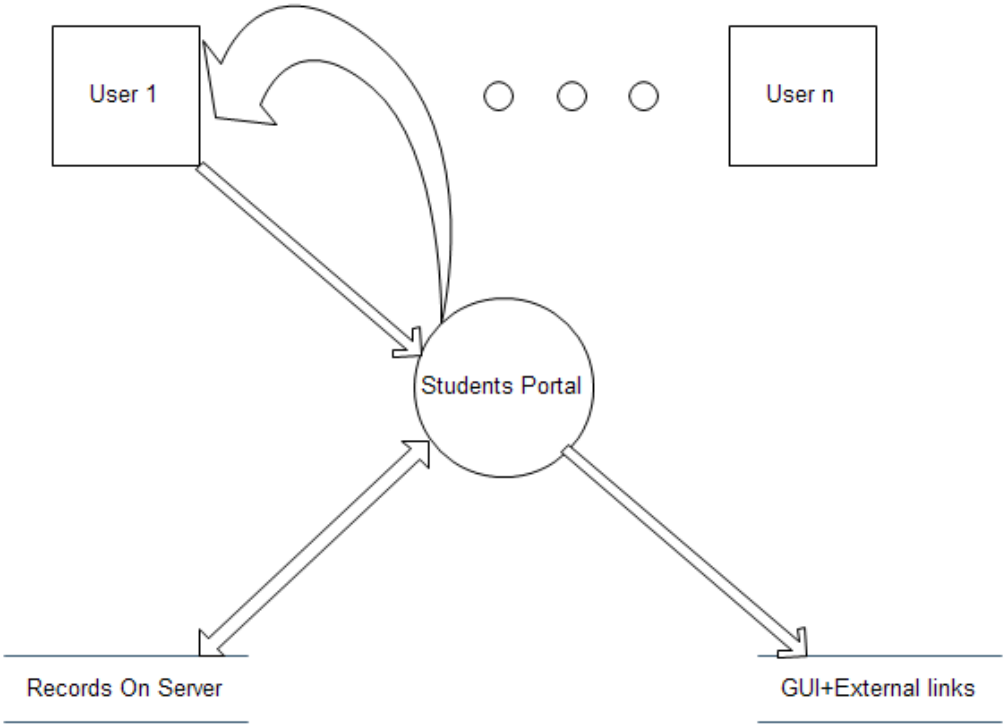


STUDENT

1.2.2 Data flow diagrams:-

The DFD represents the flow of data between different modules.

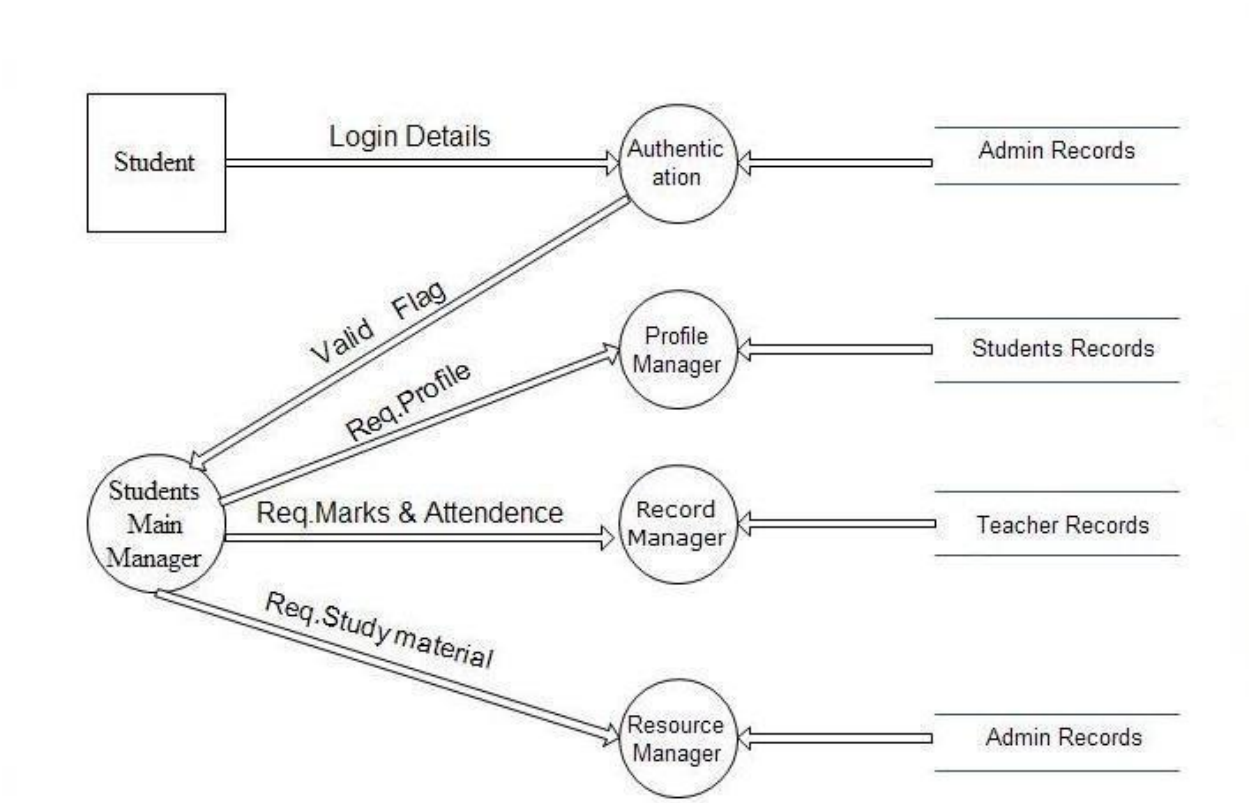
DFD for Portal



Students Portal 0-Level DFD

This is the abstract form of the portal service which represents the entire portal as a single process serving multiple users by using the server records along with the front end GUI and the external links.

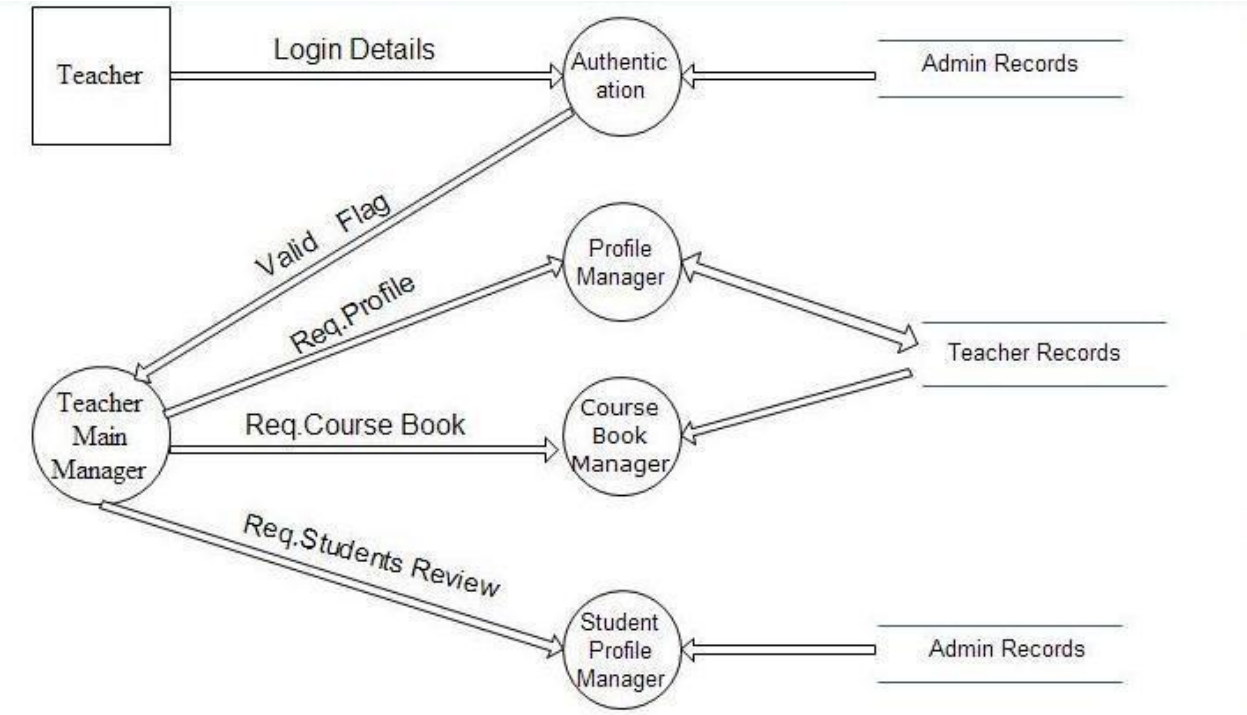
DFD for entity: Student



DFD Entity: STUDENT

This is the DFD for the entity student where the login details (username and password) are initially submitted by the user which is then matched with those in the records by the "Authentication Module". The valid user is then given the rights of request and these requests are handled by the "Students Main Manager" and forwarded to either "Profile Manager" or "Record Manager" or "Resource Manager" modules.

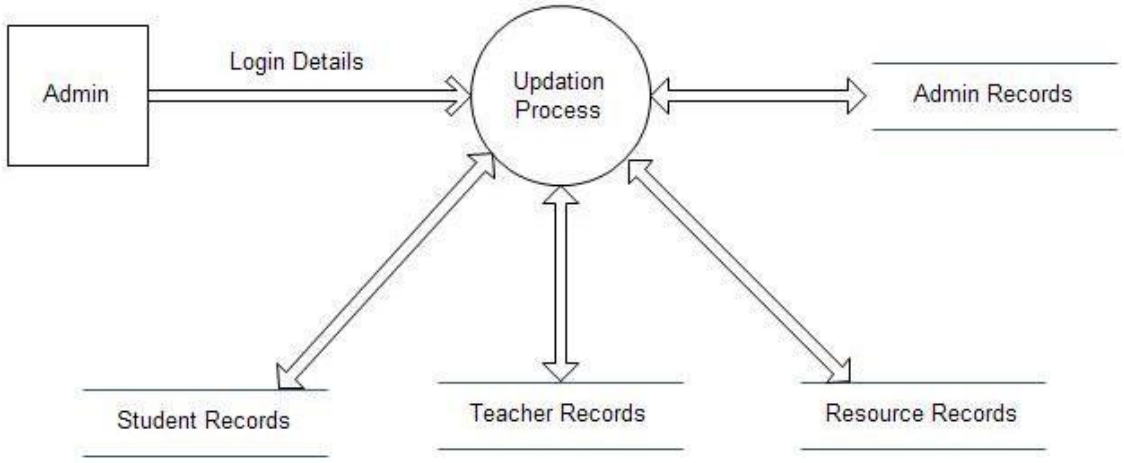
DFD for entity: Teacher



DFD Entity: TEACHER

This is the DFD for the entity student where the login details (username and password) are initially submitted by the user which is then matched with those in the records by the "Authentication Module". The valid user is then given the rights of request and these requests are handled by the "Teacher Main Manager" and forwarded to either "Profile Manager" or "Student Profile Manager" or "Course Book Manager" modules.

DFD for entity: Administrator

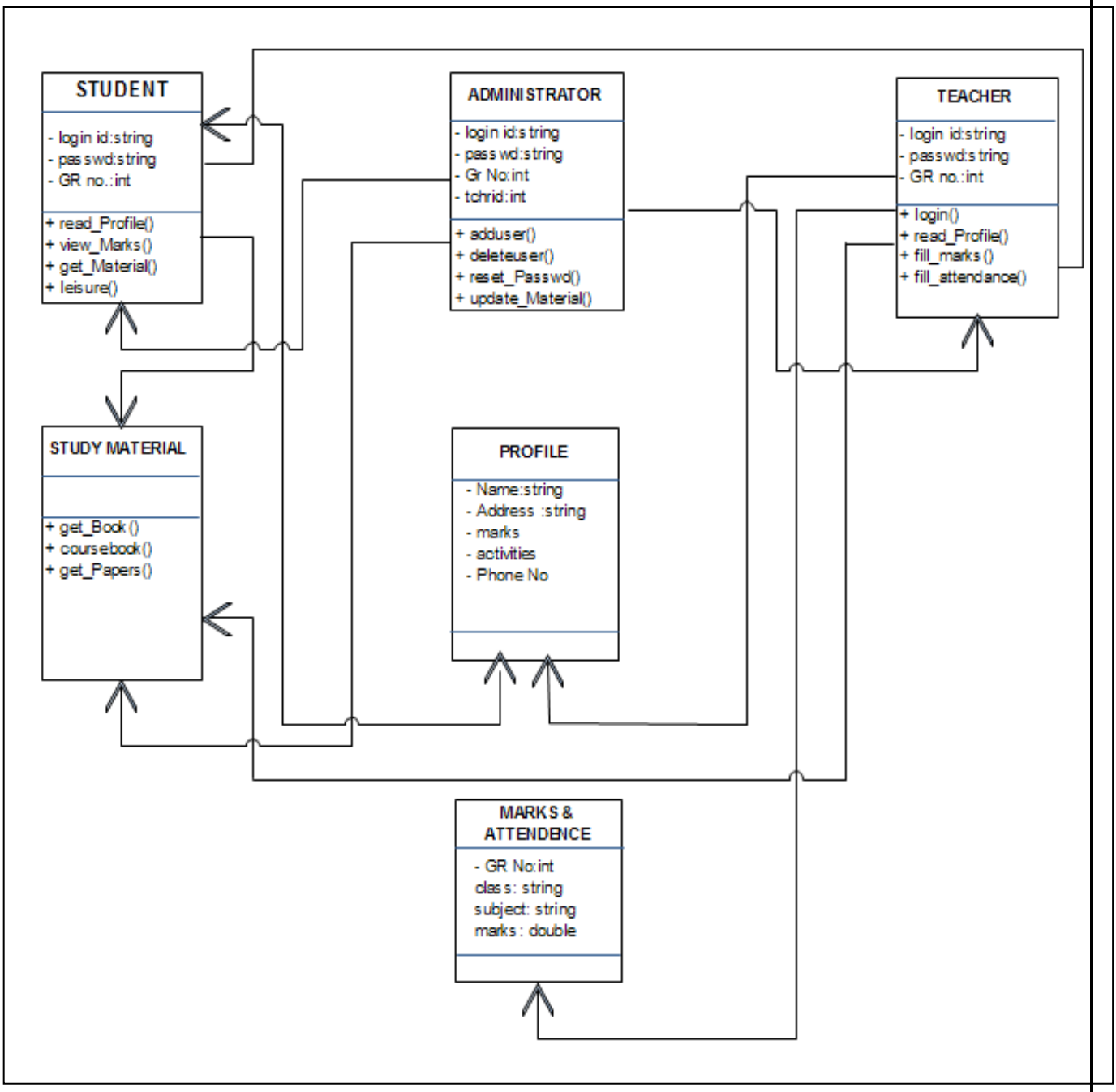


DFD Entity: ADMINISTRATOR

This is the DFD for the entity student where the login details (username and password) are initially submitted by the user which is then matched with those in the records by the "Authentication Module". The valid user is then advanced to "Updation Process" module which handles all the modifications on the records.

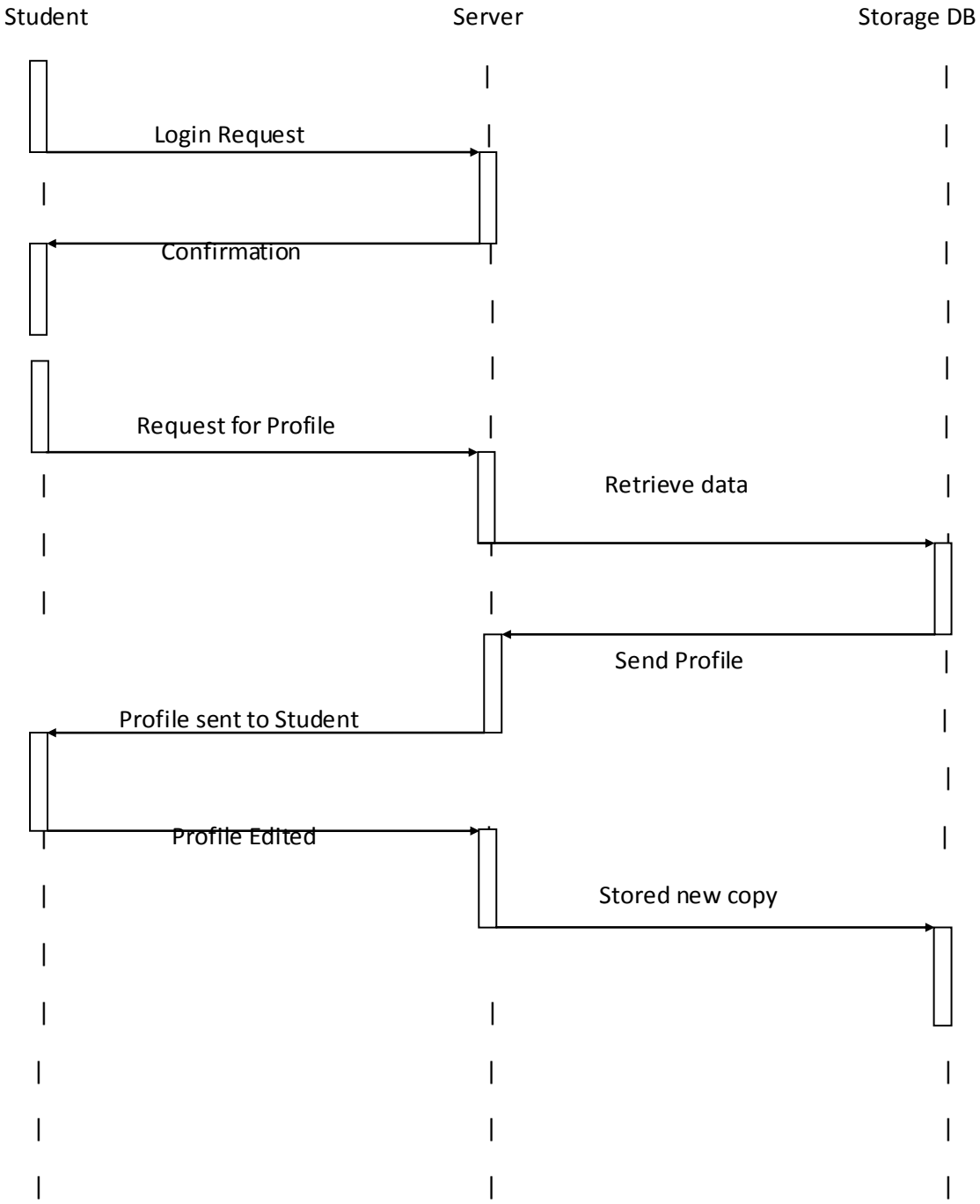
2. System Design

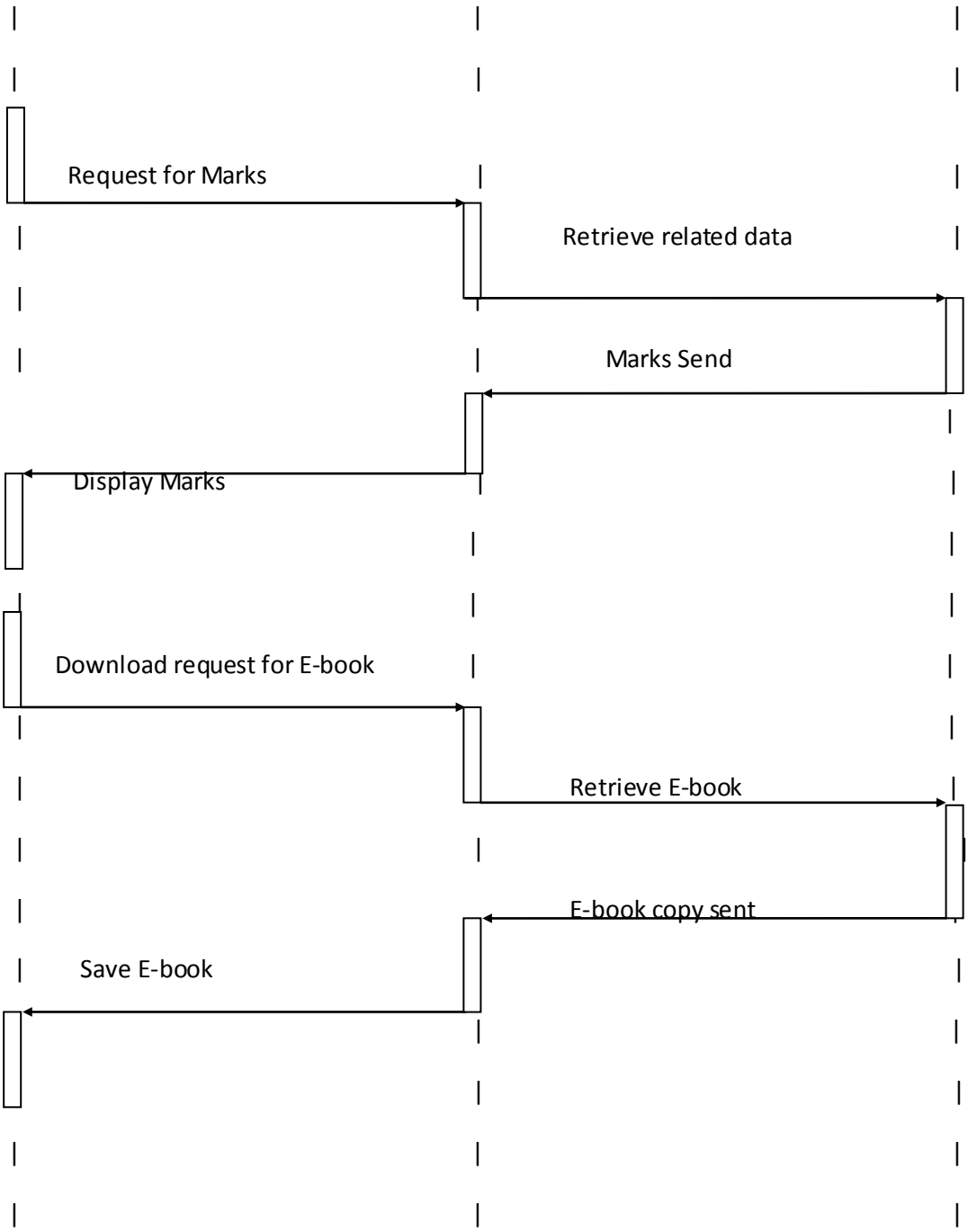
2.1 Class Diagram



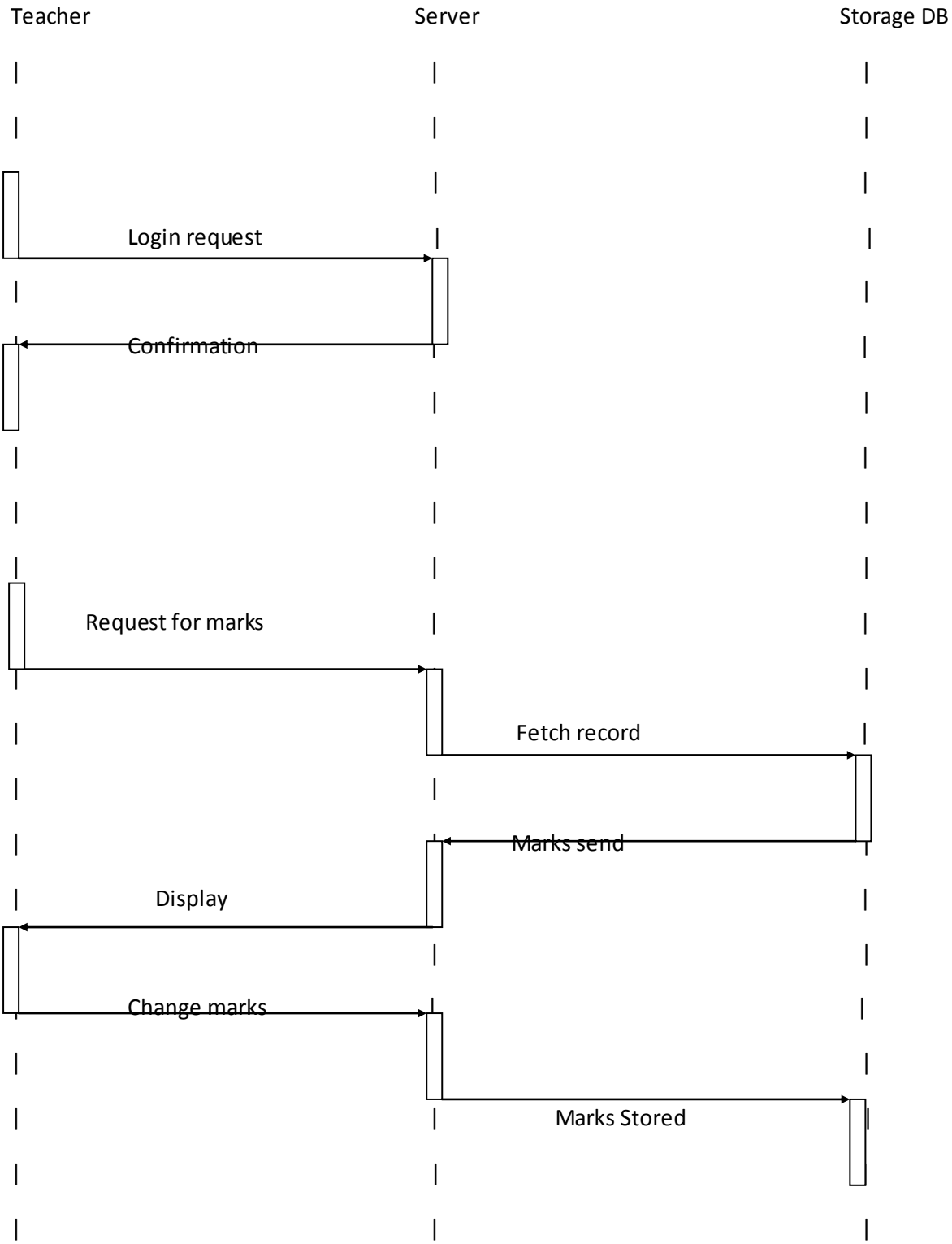
2.2 Sequence Diagram

1) STUDENT

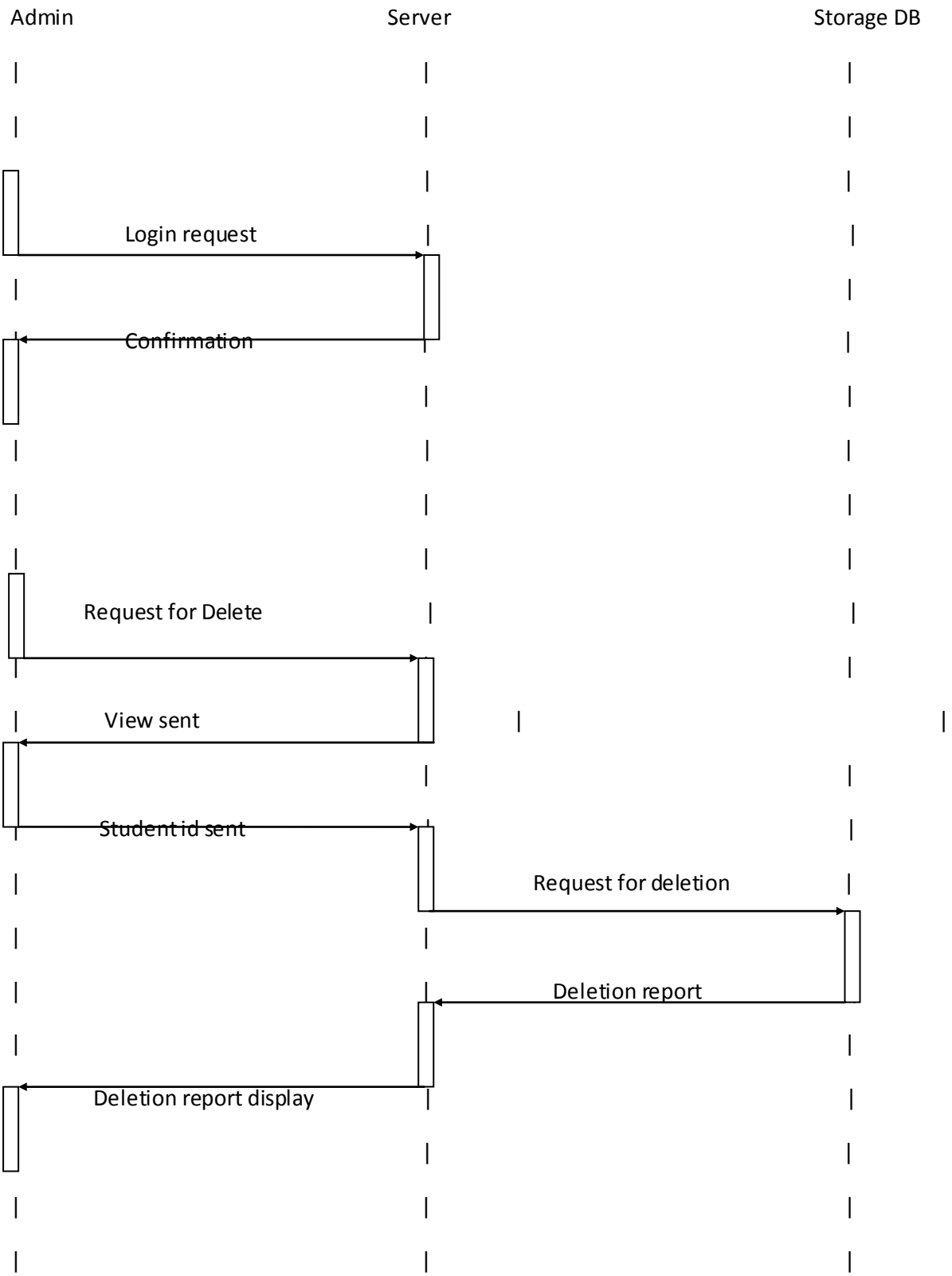



Request for Marks
Retrieve related data
Marks Send
Display Marks
Download request for E-book
Retrieve E-book
E-book copy sent
Save E-book

2) Teacher


Teacher
Server
Storage DB
Login request
Confirmation
Request for marks
Fetch record
Marks send
Display
Change marks
Marks Stored

3) Administrator



2.3 Future Extension:

The proposed portal can be extended on a broader scale by attaching it as a part of the college website thereby making it a global system rather than limited to the local intra network.

3. Database Design

3.1 Data Dictionary

STUDENT

- GR.NO.
- Name
- Address
- Gender
- Birth date
- Department id
- Class id
- Roll No
- e-mail id
- Phone No

DEPARTMENT

- DEPT ID
- Name of Department
- HOD
- Total staff
- Total student

CLASS

- CLASS ID
- Name
- Class co-ordinator

ATTENDANCE

- GR.NO.
- Subject
- Month
- Percentage

MARKS

- GR.NO.
- Subject id
- Teacher id
- Test

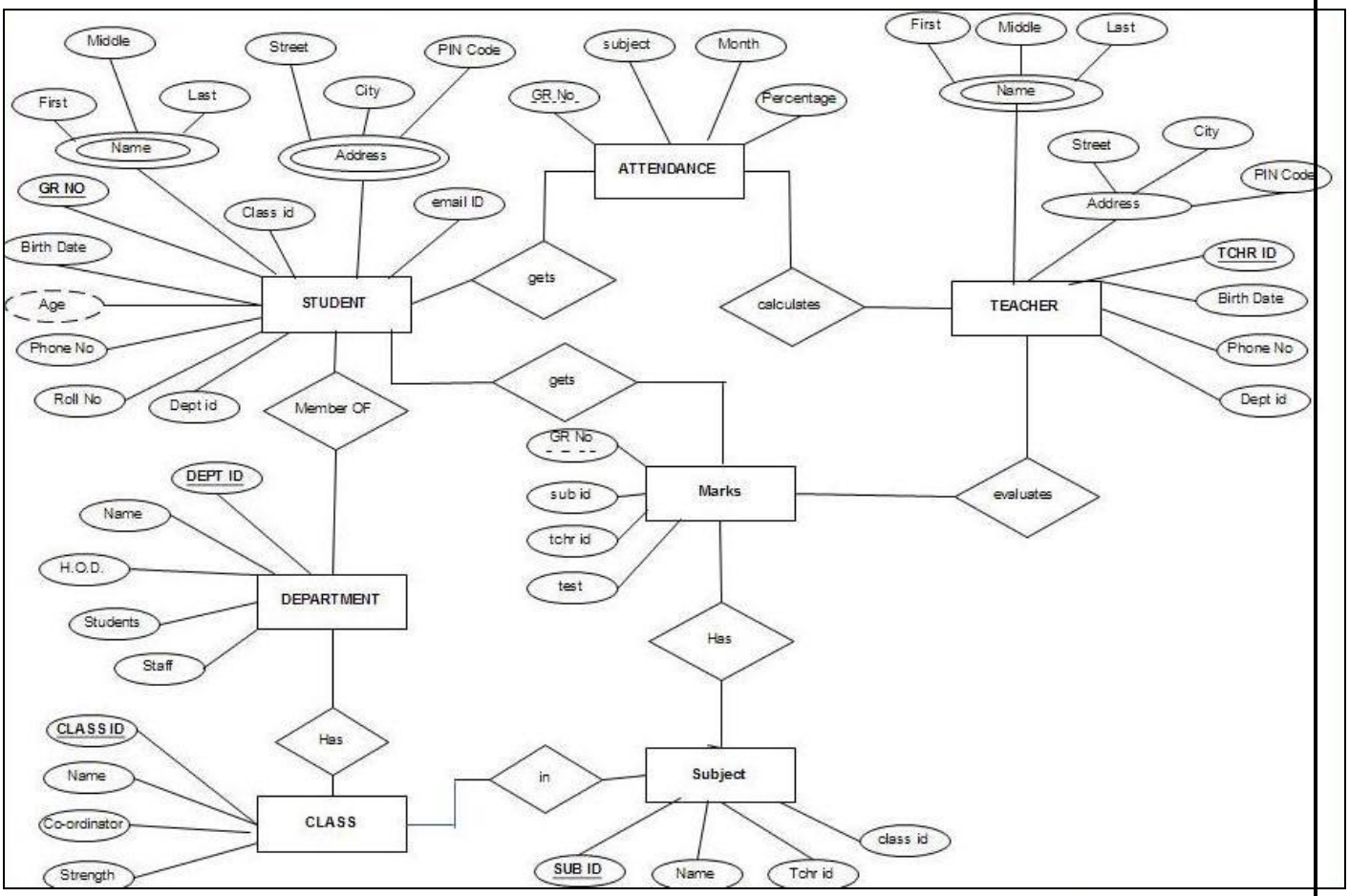
SUBJECT

- SUBJECT ID
- Name
- Teacher id
- Class id

TEACHER

- TCHR ID
- Name
- Address
- Gender
- Birth date
- Department id
- Phone No

3.2 ER Diagram



ER Diagram

3.3 Use Cases

Terminologies:

- Actors: A person or a system which uses the system being built for achieving some goal.
- Primary actor: The main actor for whom a use case is initiated and whose goal satisfaction is the main objective of the use case.
- Scenario: A set of actions that are performed to achieve a goal under some specified conditions.
- Main success scenario: Describes the interaction if nothing fails and all steps in the scenario succeed.
- Precondition: Specifies what the system will ensure before allowing the use cases to be initiated.

Using the above mentioned terminologies we list the possible use cases that are applicable to our system.

System Users:

- Student
- Teacher
- Administrator

***Use Case 1*: Requesting profile**

Primary Actor: Student

Precondition: Student has logged in.

Main Success Scenario:

1. Server displays the current profile to the student.
2. Student edits the profile as per the requirement.
3. Student saves the updated profile.
4. Server displays successful update.

Exception:

1. Student enters invalid data.

* Give appropriate corresponding error message.

2. Student left some fields blank.

*Prompt student to fill those blank fields.

***Use Case 2*: Downloading the study material**

Primary Actor: Student

Precondition: 1) Student has logged in.

2) Study material must exist.

Main Success Scenario:

1. Request to the server for downloading.
2. Download is initiated.
3. Download completes successfully.

Exception:

1. Downloading failure.

*Restart the download process.

***Use Case 3*: Updating marks**

Primary Actor: Teacher

Precondition: 1) Teacher has logged in.

2) Record to be updated must exist.

Main Success Scenario:

1. Teacher selects the record by selecting the class and id of the student.
2. Teacher enters the marks.
3. Teacher saves the changes.
4. Server confirms successful upload.

***Use Case 4*: Deletion of user**

Primary Actor: Administrator

Precondition: 1) Administrator has logged in.

2) User id must exist.

Main Success Scenario:

1. Administrator enters user id.
2. Record is deleted from database.
3. System confirms successful deletion.

Exception:

1) The user to be removed has already logged in.

*Notify administrator with the error message.

''- implies possible suggestion*

D) References:

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- University of Kent-Student Portal- www.kent.ac.uk
- Building an ASP.NET Intranet-Wrox Publication.
- http://bb.pelhamsd.org
- Microsoft .NET Framework 2.0 Web-based Client Development Training Kit-Microsoft Press.