ADipIT02– Object-Oriented Design and Programming

TOPIC: COLLEGE MANAGEMENT SYSTEM

Group Name: Infinity Group

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1. Description and Application

1.1. Description

This project contains details of the information management system of the college like Student, Staff (Technical or Non-technical) create login and password, using these staff, student can upload or download some information like college materials published by staff. From this project student and staff can easily access their important data like coursework and submit their project work. Easily for maintaining the record of the student and staff. Easily access student their result and attendances. Searching of the student or staff data will be easily carried out comparison to manual searching. Reduces the cost and time of the college.

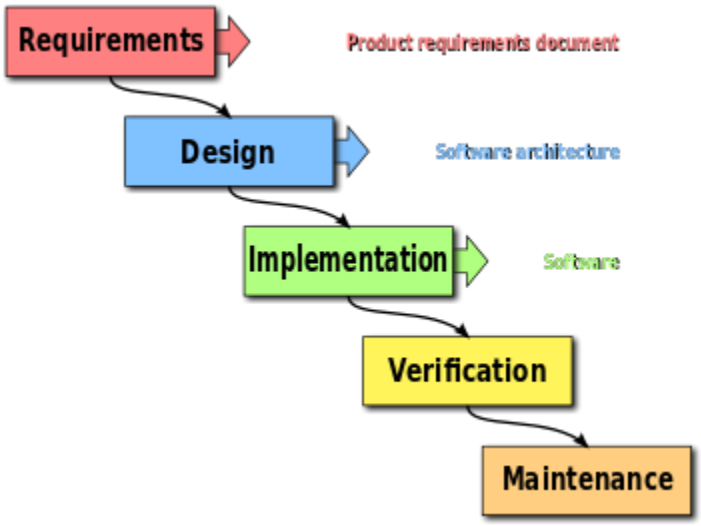
1.2. Application

Education management system

2. Methodology

2.1. SDLC process models

2.1.1. Classical Waterfall



Requirement:

1) User Class and Administration
   - Administrator :
     The admin keeps track of admission of new students to the department, entries of new staff to the department, entry of attendance information. Admin can modify the data.
   - User:
     User can retrieve the information from database by sending the queries.

2) Functional Requirement
   - Entry of new student to the department.
   - Entry of new Staff to the department.
   - Entry of attendance information.
   - Entry of examination marks.
   - Provide individual and class-wise report.
   - Update the student profile depending on attendance and exam status.

3) Non- Functional Requirement
   - The system should be easy to handle
   - System should give expected performance results
   - The response time should be as small as possible.
   - Database should be secured
   - Database backup is required for safety(Only in case of OS failure or Virus attack)
   - Admin can also modify and append the data whereas Users can only retrieve the information about database.

4) External Interface Requirement
   User Interface:
   - A login screen for entering the username and password.
   - Screen for displaying the major tasks like delete, add and view details of student
   - Separate forms for performing the above major tasks
   - Another separate screen for users to view the information.

   Software Interface

   - Operating System: Windows XP, Vista, 7, 8 and Higher
   - Platform: .NET
   - Database: SQL server
   - Language: Visual Studio 2013 or higher

   Hardware Interface

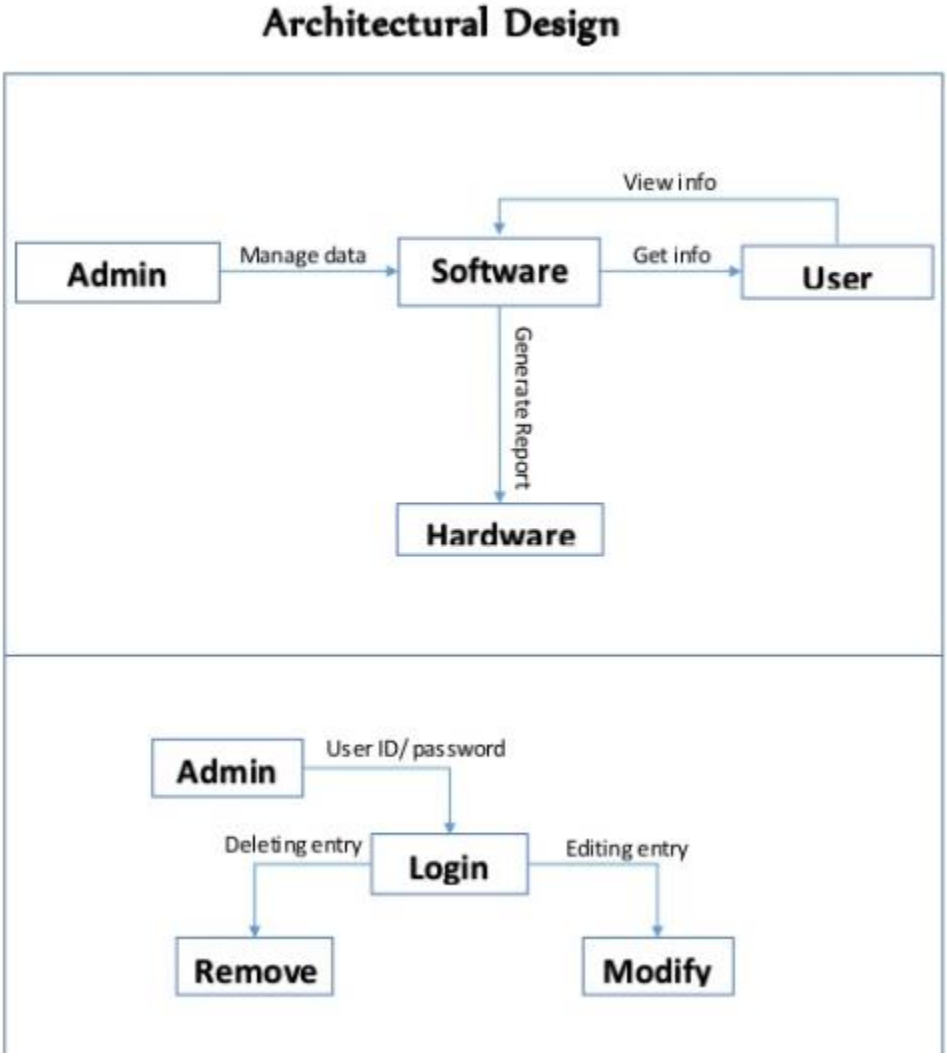
   - Intel Pentium 4 or Higher
   - 1.5 GHz
   - 512 MB of RAM or Higher

5) Software System Attributes
   - The application is easy to interact and communicate with user.
   - This application provides better user interface for ease of working.

System Design:-

System is the process by which an agent creates a specification of a system, intended to accomplish goals. The objective of the system design is to deliver the needs as specified. Software design usually involves problem solving and planning a software solution.

It involves logical design and physical design. The logical design describes the structure and characteristics of the features such as outputs, inputs, files, databases and procedures. Logical design specifies user need at the level of details that virtually determine the information flow into and out of the system and required data resources. Physical design is the actual implementation of the logical design. It is all about drawing how the system looks physically.



Implementation:-

It is the process in which actual implementation of the physical design takes place through coding. Proper coding and the development, proving and integration of the whole system are processed.

Testing:-

The code is then handed over to the testing team. Testers check the program for all possible defects, by running test cases either manually or by automation. The client is involved in the testing phase as well, in order to ensure all requirements are met. All Flaws and bugs detected during this phase are fixed to ensure quality assurance.

Maintenance:-

This makes for the final phase of the waterfall model, where the software is deployed at the client's side, after it has undergone thorough testing. After the deployment of the software, routine maintenance work is carried out. Once the software has been deployed, in case the customer asks for any changes or enhancements, then the entire process is restarted.

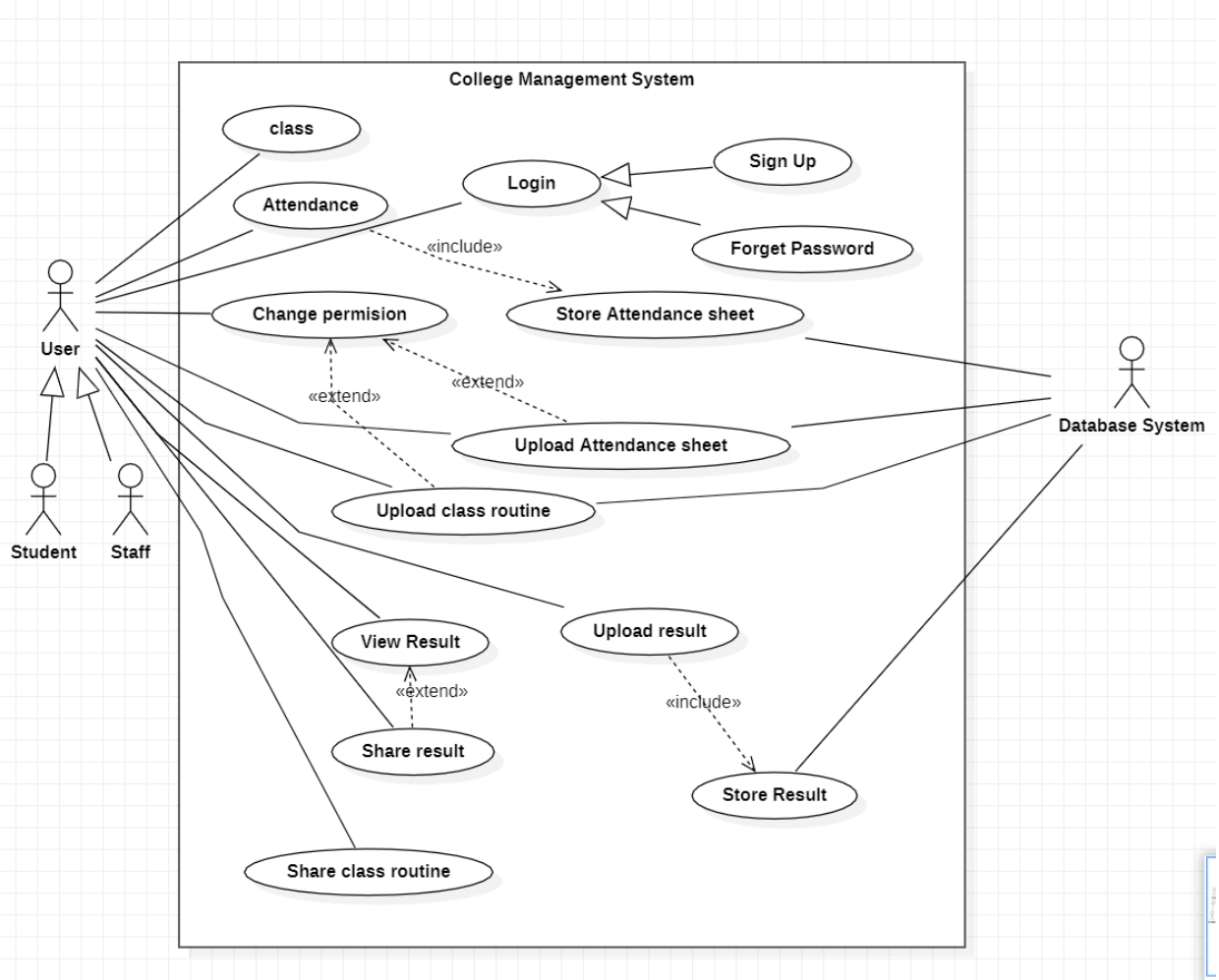
Advantages of waterfall model

- Simple and easy to understand and use.
- It allows for departmentalization and managerial control.
- Waterfall model works well for smaller projects where sequence is very well understood.
- Phases are processed and completed one at a time.
- The tasks remain as stable as possible throughout the development process.

Disadvantages of waterfall model

- It does not allow for much reflection or revision.
- High amounts of risk and uncertainty.
- Poor model for long and going projects.
- Not a good model for complex and object-oriented projects.
- Errors can be fixed only during the phase.

2.2. Usecase diagram



2.3. Class Diagram