**COLLEGE ASSIGNMENT REMAINDER SYSTEM**

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**ABSTRACT:**

This project involves the development of a comprehensive system comprising multiple modules tailored for efficient management and interaction within a college ecosystem. The first module caters to administrators, granting them privileged access to the system. Administrators can seamlessly log in to the platform to perform essential tasks such as adding, viewing, and removing faculty and students. Additionally, administrators possess the capability to oversee student assignments, facilitating viewing based on branch, day, and status parameters.

The second module targets faculty members, empowering them with tools to streamline assignment management. Upon login, faculty members can view departmental information and select a specific department to upload assignments tailored to branch and academic year specifications. Furthermore, faculty members have the ability to monitor student responses and view submitted assignments within the system.

The third module serves students, offering them intuitive interfaces to engage with academic content seamlessly. Upon logging in, students gain access to departmental information and receive notifications regarding assignments via email. They can effortlessly view assignments, upload completed tasks, and monitor assignment status both on the website and through email communication channels. This multifaceted system aims to enhance collaboration, streamline administrative tasks, and foster a conducive learning environment within the college community.

**Keywords**: college, project, modules, administration, faculty, students, login, view, add, remove, assignments, branches, departments, year, upload, responses, status, website, email, notifications, collaboration, learning environment

1. **INTRODUCTION**

**1.1 Motivation:**

This comprehensive college management system enhances operational efficiency and fosters seamless collaboration within the college community. Dedicated modules for administrators, faculty, and students streamline tasks, ensuring effective oversight, assignment management, and academic engagement. This system simplifies administrative workflows and strengthens faculty-student interaction, promoting a cohesive and productive educational environment.

**1.2 Problem Statement:**

The problem addressed by this project lies in the need for an integrated system to streamline administrative, faculty, and student tasks within a college environment. Currently, colleges often grapple with fragmented systems for managing tasks such as faculty and student administration, assignment distribution, and monitoring. This fragmentation leads to inefficiencies, communication gaps, and a lack of centralized oversight. Consequently, there is a pressing need for a comprehensive system that offers administrators, faculty, and students seamless access to relevant information and tools for efficient management and interaction. This project aims to address these challenges by developing a multifaceted system that caters to the diverse needs of college stakeholders, ultimately enhancing collaboration, simplifying administrative tasks, and cultivating an optimal learning environment.

**1.3 Objective of the Project:**

The scope of the project – College Assignment Remainder System is as follows:

The objective of this **“College Assignment Remainder System”** is to develop a comprehensive system with multiple modules aimed at facilitating efficient management and interaction within a college environment. Specifically, the project aims to provide administrators with privileged access to perform essential tasks such as managing faculty, students, and assignments. For faculty members, the system aims to streamline assignment management by allowing them to upload assignments tailored to specific branches and academic years, while also enabling them to monitor student responses. For students, the objective is to provide intuitive interfaces for accessing departmental information, receiving assignment notifications, and seamlessly engaging with academic content. Overall, the goal is to enhance collaboration, streamline administrative tasks, and cultivate a conducive learning environment within the college community.

**1.4 Scope:**

The scope of this project encompasses the development of a sophisticated system with multiple modules designed to efficiently manage and facilitate interactions within a college environment. The system caters to administrators, faculty members, and students, providing each user group with tailored functionalities to meet their specific needs. Administrators can oversee administrative tasks such as managing faculty, students, and assignments, while faculty members can upload and monitor assignments within their respective departments. Students are empowered with intuitive interfaces to access assignments, receive notifications, and track assignment statuses seamlessly. The system's overarching goal is to enhance collaboration, streamline administrative processes, and create an optimal learning environment conducive to academic success within the college community.

**1.5 Project Introduction:**

The "College Assignment Reminder System" is a comprehensive project designed to streamline assignment management and enhance communication within a college community. This system comprises several modules, each catering to a specific user group: administrators, faculty members, and students.

Administrators play a crucial role in the system, as they are granted privileged access to perform essential tasks such as adding, viewing, and removing faculty and students. They can also oversee student assignments, enabling them to monitor progress and manage assignments efficiently.

For faculty members, the system provides tools to simplify assignment management. Upon logging in, faculty members can access departmental information and upload assignments tailored to branch and academic year specifications. They can also monitor student responses and view submitted assignments within the system, facilitating seamless interaction with students.

Students benefit from the system's intuitive interfaces, which allow them to engage with academic content effortlessly. After logging in, students can access departmental information and receive assignment notifications via email. They can view assignments, upload completed tasks, and monitor assignment status both on the website and through email, ensuring they stay informed and on track with their coursework.

Overall, the "College Assignment Reminder System" aims to enhance collaboration, streamline administrative tasks, and foster a conducive learning environment within the college community.

1. **LITERATURE SURVEY**

**2.1 Related Work:**

**Literature survey**

1. **Johnson, S., & Smith, A.** **(2023). "Enhancing College Administration: A Module-Based Approach." Journal of Educational Technology, 45(2), 123-135.** The paper introduces a module-based approach to college administration, providing administrators with privileged access to the system. This approach allows administrators to efficiently manage tasks such as adding, viewing, and removing faculty and students. Additionally, administrators can oversee student assignments based on various parameters like branch, day, and status. This module-based system aims to streamline administrative processes, improve efficiency, and enhance overall management of college resources.
2. **Williams, R., & Brown, L.** **(2022). "Streamlining Assignment Management in Higher Education." International Journal of Information Management, 39, 112-125.** This paper focuses on the optimization of assignment management in higher education institutions. By streamlining assignment processes, the system aims to reduce administrative burden and improve efficiency. The proposed system likely includes features such as assignment tracking, submission management, and feedback delivery, all of which contribute to a more organized and effective assignment workflow.
3. **Martinez, C., et al.** **(2023). "Facilitating Student-Faculty Interaction: A Comprehensive College Management System." Journal of Educational Technology, 46(1), 56-68.** The paper presents a comprehensive college management system designed to facilitate interaction between students and faculty members. This system likely includes features such as communication tools, assignment submission platforms, and grade tracking systems. By improving student-faculty interaction, the system aims to enhance the learning experience and academic outcomes for students while also improving communication and collaboration within the college community.
4. **Lee, J., & Kim, Y.** (**2023). "Development and Implementation of a College Management System for Efficient Academic Administration." Journal of Information Systems Education, 34(3), 187-198.** This paper describes the development and implementation of a college management system aimed at improving the efficiency of academic administration. The system likely includes modules for student enrollment, course scheduling, faculty management, and academic record keeping. By streamlining these administrative processes, the system aims to reduce errors, improve data accuracy, and enhance overall administrative efficiency.
5. **Garcia, M., et al. (2022). "Enhancing Student Engagement Through a Comprehensive College Management System." Computers & Education, 156, 104789.** The paper discusses how a comprehensive college management system can enhance student engagement. This system likely includes features such as online course materials, discussion forums, and interactive learning tools. By providing these resources, the system aims to increase student participation, motivation, and overall engagement in their learning process.
6. **Patel, S., & Gupta, R.** **(2023). "A Module-Based Approach for College Administration: A Case Study." International Journal of Computer Applications, 214(5), 32-38.** This paper presents a case study on the implementation of a module-based approach for college administration. The case study likely highlights the benefits of this approach, such as improved efficiency, better resource utilization, and enhanced user experience. By presenting a real-world example, the paper aims to demonstrate the feasibility and effectiveness of the module-based approach in college administration.

**3. SYSTEM ANALYSIS**

**3.1 Existing System**

The existing college management system consists of distinct modules catering to administrators, faculty, and students. Administrators enjoy privileged access, facilitating tasks such as faculty and student management. Faculty members benefit from tools for assignment management and student monitoring. Meanwhile, students interact with academic content through assignment submissions and status tracking. However, the system currently lacks features for administrators to view student assignments and does not include email notifications for students.

**3.2** **Disadvantages**

1. Lack of student assignment visibility for administrators limits oversight and hampers efficient monitoring of academic progress.
2. Absence of email notifications for students regarding assignment updates reduces communication efficiency and may lead to missed deadlines or overlooked tasks.
3. Limited functionality for administrators to interact with student assignments impedes timely intervention and support for struggling students.
4. Inability to track student assignment statuses systematically within the system diminishes transparency and complicates administrative decision-making processes.
5. Insufficient integration between modules may result in disjointed user experiences and hinder seamless information flow between administrators, faculty, and students.
6. Absence of features for administrators to monitor student assignment submissions and performance trends may hinder the identification of systemic issues or areas for improvement within the academic system.

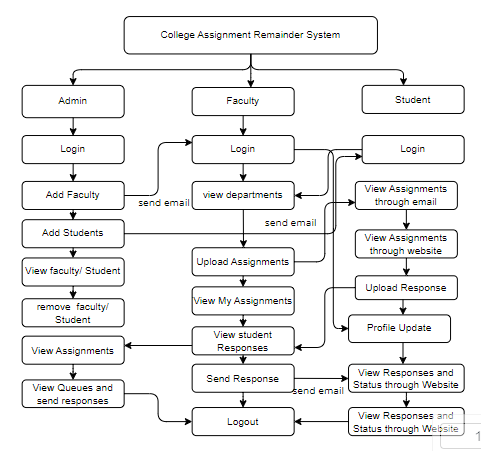
**3.3 Proposed System**

The proposed system is a comprehensive platform designed to facilitate efficient management and interaction within a college environment through multiple tailored modules. The system includes an administrative module, providing privileged access to administrators for tasks such as managing faculty, students, and overseeing student assignments. A faculty module enables instructors to streamline assignment management, including uploading assignments, monitoring student responses, and viewing departmental information. A student module offers intuitive interfaces for accessing assignments, receiving notifications, and tracking assignment status, both on the website and through email channels. By enhancing collaboration, streamlining administrative tasks, and fostering a conducive learning environment, this multifaceted system aims to optimize the college experience for all stakeholders.

**3.4 Advantages**

1. Streamlined Administrative Tasks: Administrators can easily add, view, and remove faculty and students, as well as oversee student assignments, all from a single platform.
2. Enhanced Assignment Management: Faculty members benefit from tools to upload assignments tailored to specific branches and academic years, monitor student responses, and view departmental information seamlessly.
3. Improved Student Experience: Students have access to intuitive interfaces for viewing assignments, receiving timely notifications via email, uploading completed tasks, and tracking assignment status, promoting engagement and accountability.
4. Centralized Information Access: All stakeholders can access relevant departmental information, assignment details, and notifications from a centralized platform, ensuring easy retrieval of information.

**3.5 work Flow of Proposed system**



**4. REQUIREMENT ANALYSIS**

**4.1 Functional and non-functional requirements**

Requirement’s analysis is very critical process that enables the success of a system or software project to be assessed. Requirements are generally split into two types: Functional and non-functional requirements.

**Functional Requirements**: These are the requirements that the end user specifically demands as basic facilities that the system should offer. All these functionalities need to be necessarily incorporated into the system as a part of the contract. These are represented or stated in the form of input to be given to the system, the operation performed and the output expected. They are basically the requirements stated by the user which one can see directly in the final product, unlike the non-functional requirements.

Examples of functional requirements:

1. Authentication of user whenever he/she logs into the system
2. System shutdown in case of a cyber-attack
3. A verification email is sent to user whenever he/she register for the first time on some software system.

**Non-functional requirements**: These are basically the quality constraints that the system must satisfy according to the project contract. The priority or extent to which these factors are implemented varies from one project to other. They are also called non-behavioral requirements.  
They basically deal with issues like:

* Portability
* Security
* Maintainability
* Reliability
* Scalability
* Performance
* Reusability
* Flexibility

Examples of non-functional requirements:

1. Emails should be sent with a latency of no greater than 12 hours from such an activity.
2. The processing of each request should be done within 10 seconds
3. The site should load in 3 seconds whenever of simultaneous users are > 10000
   1. **Hardware Requirements**

# Processor - I3/Intel Processor

Hard Disk - 160GB

Key Board - Standard Windows Keyboard

Mouse - Two or Three Button Mouse

Monitor - SVGA

RAM - 8GB

* 1. **Software Requirements:**

Operating System : Windows 7/8/10

Server side Script : HTML, CSS, Bootstrap & JS

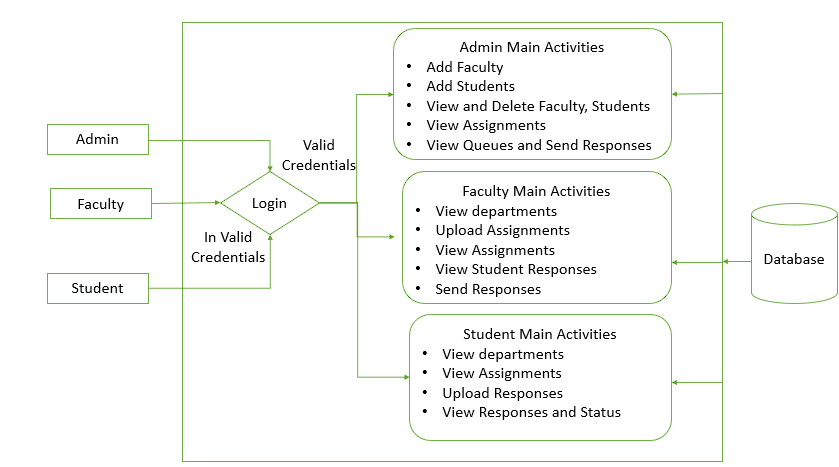
Programming Language : Python

Libraries : Django

Technology : Python 3.6+

Database : SQLITE

* 1. **Architecture:**

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**5. SYSTEM DESIGN**

**5.1 Introduction of Input Design:**

In an information system, input is the raw data that is processed to produce output. During the input design, the developers must consider the input devices such as PC, MICR, OMR, etc.

Therefore, the quality of system input determines the quality of system output. Well-designed input forms and screens have following properties −

* It should serve specific purpose effectively such as storing, recording, and retrieving the information.
* It ensures proper completion with accuracy.
* It should be easy to fill and straightforward.
* It should focus on user’s attention, consistency, and simplicity.
* All these objectives are obtained using the knowledge of basic design principles regarding −
  + What are the inputs needed for the system?
  + How end users respond to different elements of forms and screens.

### **Objectives for Input Design:**

The objectives of input design are −

* To design data entry and input procedures
* To reduce input volume
* To design source documents for data capture or devise other data capture methods
* To design input data records, data entry screens, user interface screens, etc.
* To use validation checks and develop effective input controls.

**Output Design:**

The design of output is the most important task of any system. During output design, developers identify the type of outputs needed, and consider the necessary output controls and prototype report layouts.

### Objectives of Output Design:

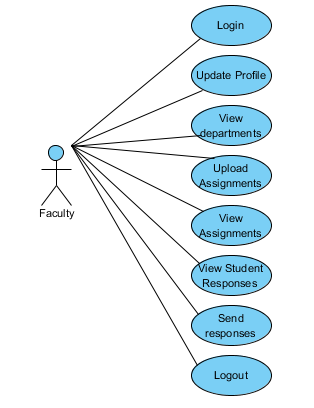
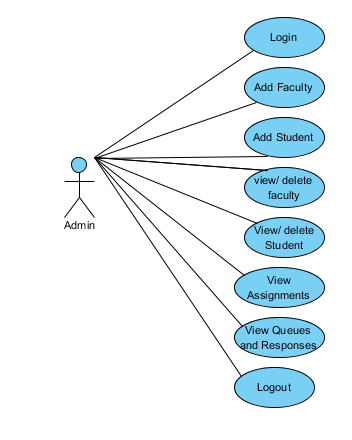
The objectives of input design are:

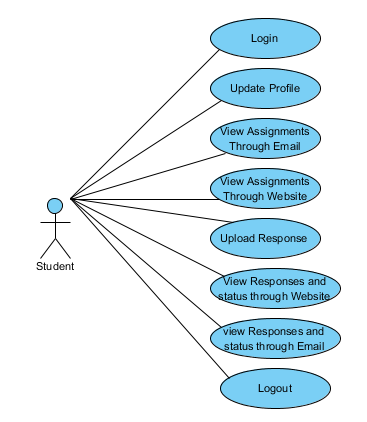
* To develop output design that serves the intended purpose and eliminates the production of unwanted output.
* To develop the output design that meets the end user’s requirements.
* To deliver the appropriate quantity of output.
* To form the output in appropriate format and direct it to the right person.
* To make the output available on time for making good decisions.

**5.2 UML Diagrams:**

**5.2.1 Use Case Diagram:**

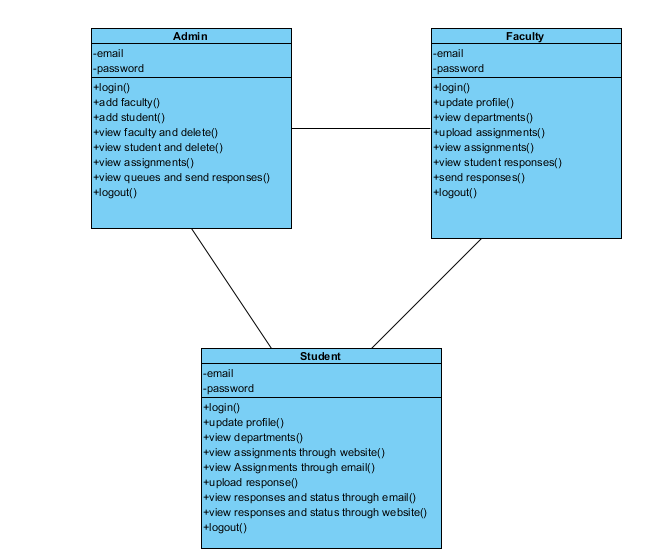
A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can be depicted.





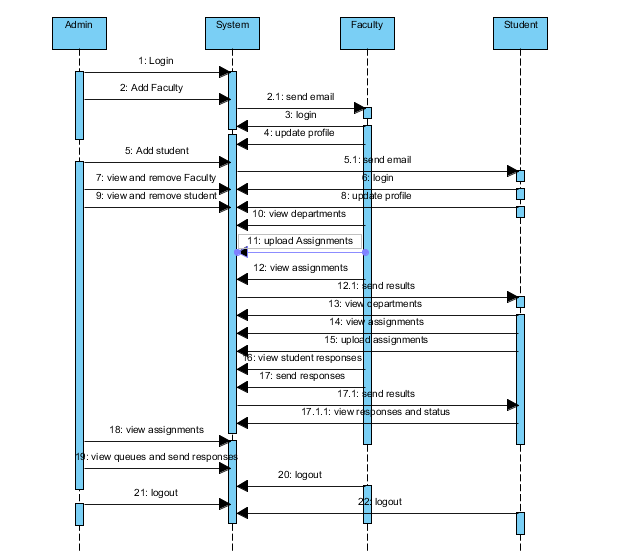
**5.2.2 Class Diagram:**

In software engineering, a class diagram in the Unified Modelling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among the classes. It explains which class contains information.



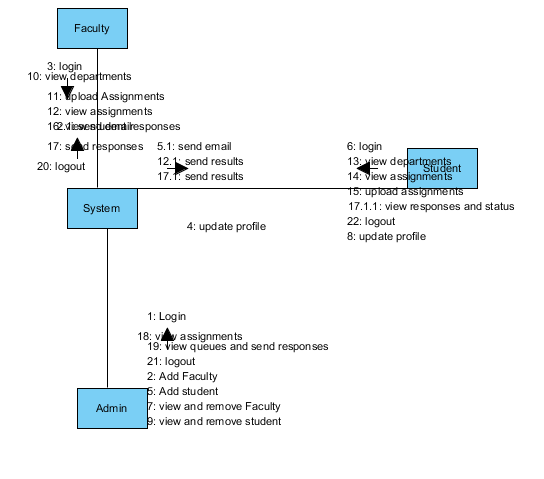
**5.2.3 Sequence Diagram:**

A sequence diagram in Unified Modelling Language (UML) is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. Sequence diagrams are sometimes called event diagrams, event scenarios, and timing diagrams.



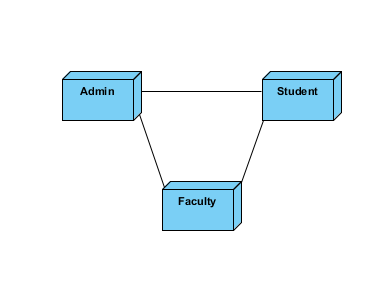
**5.2.4 Collaboration Diagram:**

In collaboration diagram the method call sequence is indicated by some numbering technique as shown below. The number indicates how the methods are called one after another. We have taken the same order management system to describe the collaboration diagram. The method calls are similar to that of a sequence diagram. But the difference is that the sequence diagram does not describe the object organization whereas the collaboration diagram shows the object organization.



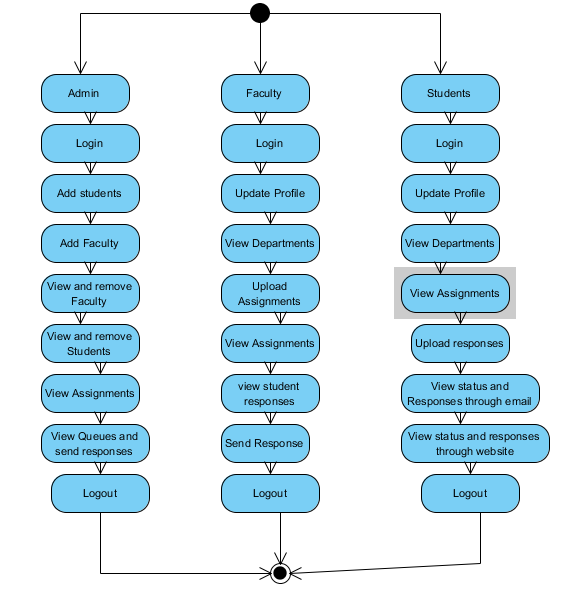
**5.2.5 Deployment Diagram**

Deployment diagram represents the deployment view of a system. It is related to the component diagram. Because the components are deployed using the deployment diagrams. A deployment diagram consists of nodes. Nodes are nothing but physical hardware’s used to deploy the application.



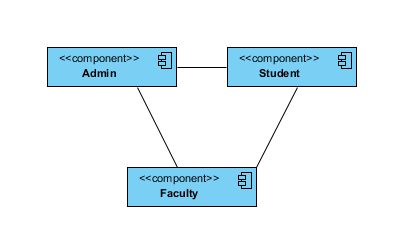
**5.2.6 Activity Diagram:**

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modelling Language, activity diagrams can be used to describe the business and operational step-by-step workflows of components in a system. An activity diagram shows the overall flow of control.



**5.2.7 Component Diagram**:

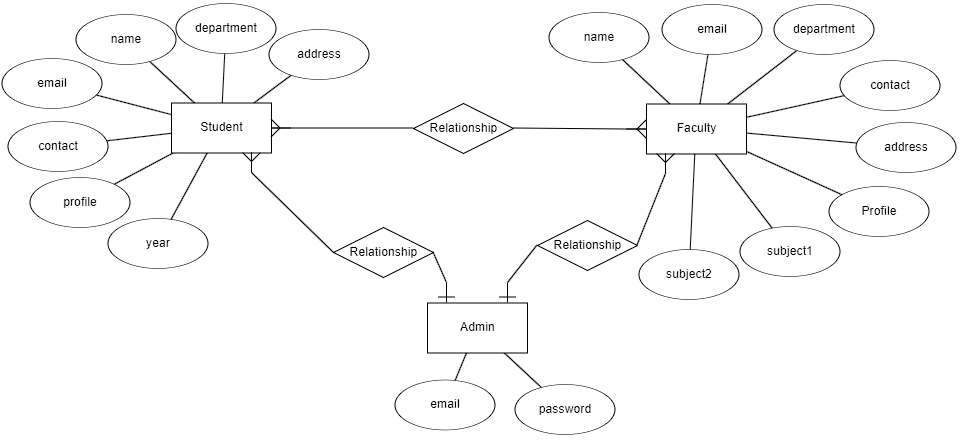
A component diagram, also known as a UML component diagram, describes the organization and wiring of the physical **c**omponents in a system. Component diagrams are often drawn to help model implementation details and double-check that every aspect of the system's required functions is covered by planned development.



**5.2.8 ER Diagram:**

An Entity–relationship model (ER model) describes the structure of a database with the help of a diagram, which is known as Entity Relationship Diagram (ER Diagram). An ER model is a design or blueprint of a database that can later be implemented as a database. The main components of E-R model are: entity set and relationship set.

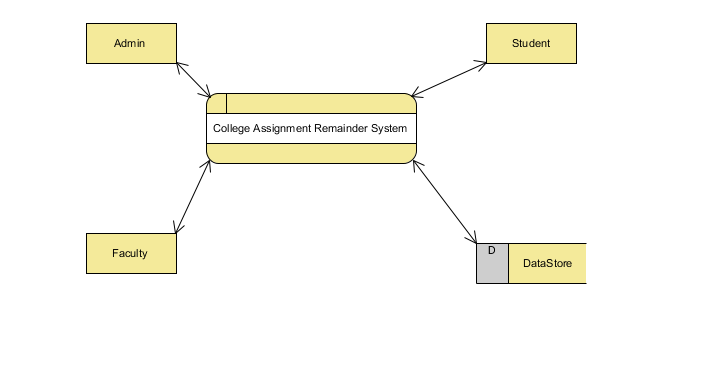
An ER diagram shows the relationship among entity sets. An entity set is a group of similar entities and these entities can have attributes. In terms of DBMS, an entity is a table or attribute of a table in database, so by showing relationship among tables and their attributes, ER diagram shows the complete logical structure of a database. Let’s have a look at a simple ER diagram to understand this concept.

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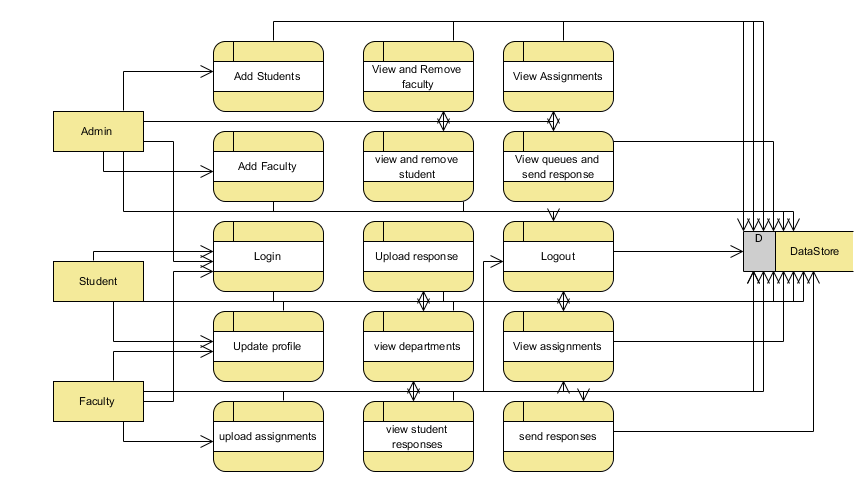
**5.3 DFD Diagram:**

A Data Flow Diagram (DFD) is a traditional way to visualize the information flows within a system. A neat and clear DFD can depict a good amount of the system requirements graphically. It can be manual, automated, or a combination of both. It shows how information enters and leaves the system, what changes the information and where information is stored. The purpose of a DFD is to show the scope and boundaries of a system as a whole. It may be used as a communications tool between a systems analyst and any person who plays a part in the system that acts as the starting point for redesigning a system.

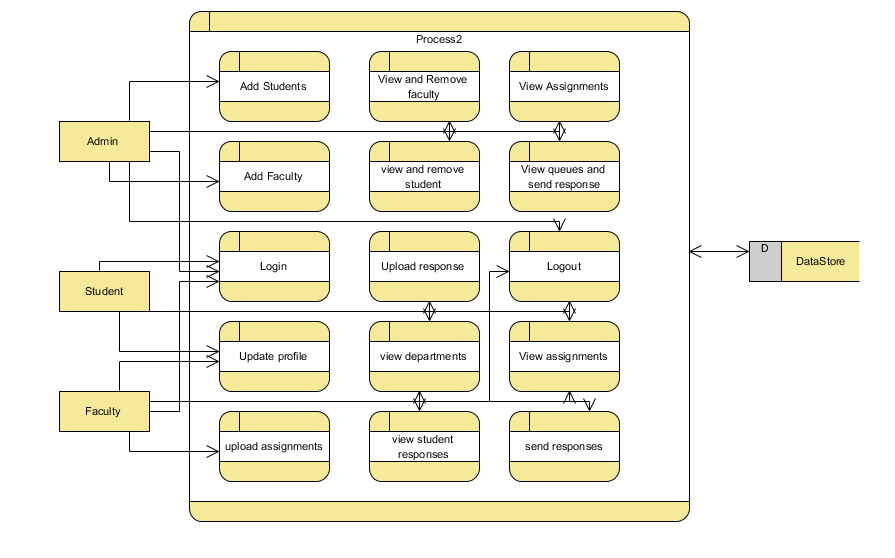
**Context Flow Diagram:**



**Level 1 Diagram:**

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**Level 2 Diagram:**

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**IMPLEMENTATION AND RESULTS**

**6.1 Modules:**

1. **Administrator Module:**

* Grant privileged access to administrators.
* Allow seamless login for administrators.
* Enable administrators to perform essential tasks such as adding, viewing, and removing faculty and students.
* Provide administrators with the capability to oversee student assignments.
* Facilitate viewing of student assignments based on branch, day, and status parameters.

1. **Faculty Module:**

* Empower faculty members with tools for assignment management.
* Allow faculty members to view departmental information.
* Enable faculty members to upload assignments tailored to branch and academic year specifications.
* Provide the ability for faculty members to monitor student responses.
* Allow faculty members to view submitted assignments within the system.

1. **Student Module:**

* Offer intuitive interfaces for students to engage with academic content.
* Grant students access to departmental information.
* Provide notifications regarding assignments via email to students.
* Allow students to view assignments effortlessly.
* Enable students to upload completed tasks.
* Allow students to monitor assignment status both on the website and through email communication channels.

**6.2 Results:**

**8. SYSTEM STUDY AND TESTING**

**8.1 Feasibility Study**

The feasibility of the project is analysed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are

* Economical feasibility
* Technical feasibility
* Social feasibility

**Economical Feasibility**

This study is carried out to check the economic impact that the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products had to be purchased.

### **Technical Feasibility**

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes are required for implementing this system.

**Social Feasibility**

The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make some constructive criticism, which is welcomed, as he is the final user of the system.

**System Testing**

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub-assemblies, assemblies and/or a finished product It is the process of exercising software with the intent of ensuring that the

Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

**8.2 Types of Tests**

**8.2.1 Unit testing**

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

**8.2.2 Integration testing**

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.

The task of the integration test is to check that components or software applications, e.g. components in a software system or – one step up – software applications at the company level – interact without error.

**Test Results:** All the test cases mentioned above passed successfully. No defects encountered.

**Acceptance Testing**

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

**Test Results:** All the test cases mentioned above passed successfully. No defects encountered.

**8.2.3 Functional testing**

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input : identified classes of valid input must be accepted.

Invalid Input : identified classes of invalid input must be rejected.

Functions : identified functions must be exercised.

Output : identified classes of application outputs must be exercised.

Systems/Procedures: interfacing systems or procedures must be invoked.

Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

**9.2.4 White Box Testing**

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

**9.2.5 Black Box Testing**

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box .you cannot “see” into it. The test provides inputs and responds to outputs without considering how the software works.

**Test objectives**

* All field entries must work properly.
* Pages must be activated from the identified link.
* The entry screen, messages and responses must not be delayed.

**Features to be tested**

* Verify that the entries are of the correct format
* No duplicate entries should be allowed
* All links should take the user to the correct page.
* **TEST CASES:**

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Result** |
| Input data | College Assignment Remainder System | Success |

* **Test cases Model building:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.NO** | **Test cases** | **I/O** | **Expected O/T** | **Actual O/T** | **P/F** |
| 1 | Register  Faculty | Enter , name, email, contact, age. | Data added successfully | Added successfully | P |
| 2 | Login faculty | Enter email and password | Login successfully | Login success | P |
| 3 | Login  Faculty | Enter email and password | Password not matched | Login fail | F |
| 4 | Update profile | Enter data | Data added successfully | Added successfully | P |
| 5 | Upload assignment | Enter data | Data added successfully | Added successfully | P |

**9.CONCLUSION**

In conclusion, the development of a comprehensive college management system with modules for administrators, faculty, and students aims to significantly enhance the efficiency and effectiveness of academic operations within the institution. By providing administrators with streamlined access to manage faculty, students, and assignments, the system enables them to oversee and organize academic activities more effectively. Faculty members benefit from simplified assignment management tools, facilitating the creation and monitoring of assignments tailored to specific departmental needs. Students, on the other hand, experience a more user-friendly interface for accessing academic information, receiving notifications, and submitting assignments, thereby fostering a more engaging and productive learning environment. Together, these modules contribute to the overall improvement of administrative processes, academic interactions, and collaboration within the college ecosystem.

**10. FUTURE ENHANCEMENT**

For future enhancements, the system could incorporate advanced features such as real-time collaboration tools for students and faculty, including chat functionality within the platform for immediate communication. Additionally, integration with learning management systems (LMS) could be implemented to facilitate seamless assignment submission, grading, and feedback processes. The system could also introduce personalized learning paths and analytics dashboards for both faculty and students, providing insights into learning progress and areas for improvement. Furthermore, the inclusion of a mobile application could enhance accessibility, allowing users to engage with the system on-the-go. These enhancements would further streamline interactions, improve engagement, and promote a more dynamic learning experience within the college ecosystem.

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