Software Design Document
Automatic Admission System Application

Automatic Admission System Application
Team:- <Elite Force>
<PES University>
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1. Introduction

1.1 Purpose

This SRS describes the software requirements for the Admissions Automation System (AAS), release 1.0. The AAS is a software system aims to automate and streamline the admission process for students participating in the COMEDK examination. The system covers the entire admission lifecycle, starting from the application for the COMEDK exam and concluding with the admission of students to respective colleges.

1.2 Product Scope

AAS efficiently manages the entire journey, from application submission to seat allocation, improving accuracy, speed, and user experience. The software's core objectives include automating validation, generating rankings, allowing college preferences, and implementing a fair and systematic seat allotment process. The AAS will be a web-based application that will be accessible to applicants, admissions staff, and faculty members.

1.3 Definitions, Acronyms and Abbreviations

Acronym	Meaning
AAS	Admission Automation System
COMEDK	Consortium of Medical, Engineering and Dental Colleges of Karnataka
PCM	Physics, Chemistry, Mathematics
PCMB	Physics, Chemistry, Mathematics, Biology
API	Application Programming Interface

1.4 References

1. https://www.comedk.org/

2. https://www.shiksha.com/engineering/comedk-uget-exam

2. System Overview

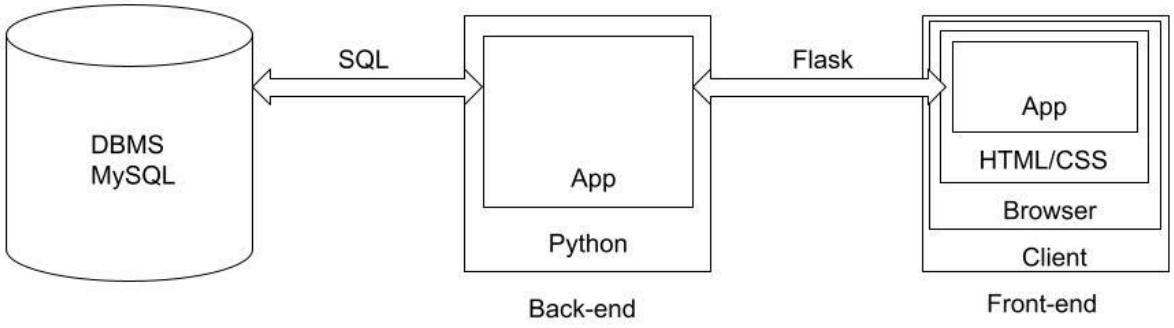


FIGURE 1

Figure 1 above represents the architectural structure we have chosen for the development of the AAS. The backend will be incharge of communicating and retrieving information from all the APIs that the AAS system is dependent on. We decided to go with MySQL as our framework as it provides fast and efficient. MySQL is also very scalable which will allow the system to grow further and accommodate a wider range of applicants. The AAS will be storing information about its users, exam details, rank, college preferences and number of seats amongst other factors. It reduces manual work and minimizes human errors as well. This system streamlines and automates the entire admission process for educational institutions (colleges and universities), ensuring efficiency, accuracy, and transparency. The Admission Automation System is a powerful tool that revolutionizes the admission process, ensuring a seamless experience for both applicants and educational institutions.

3. System Components

3.1 Decomposition Description

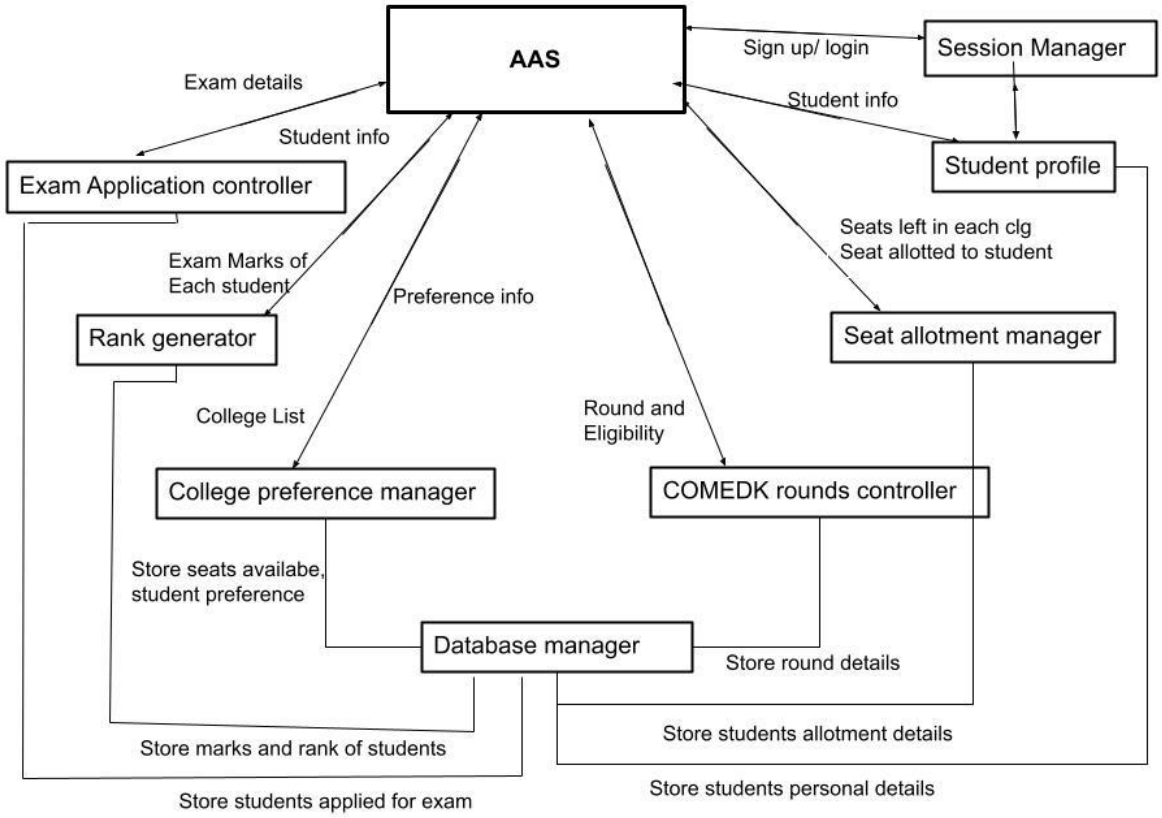


Figure 2 shows how the project is decomposed into multiple components, each responsible for distinct aspects of the system. These components include the Exam Application Controller, Rank Generator, College Preference Manager, COMEDK Rounds Controller, Seat Allotment Manager, Student Profile, Database Manager

3.2 Dependency Description

Figure 3:-

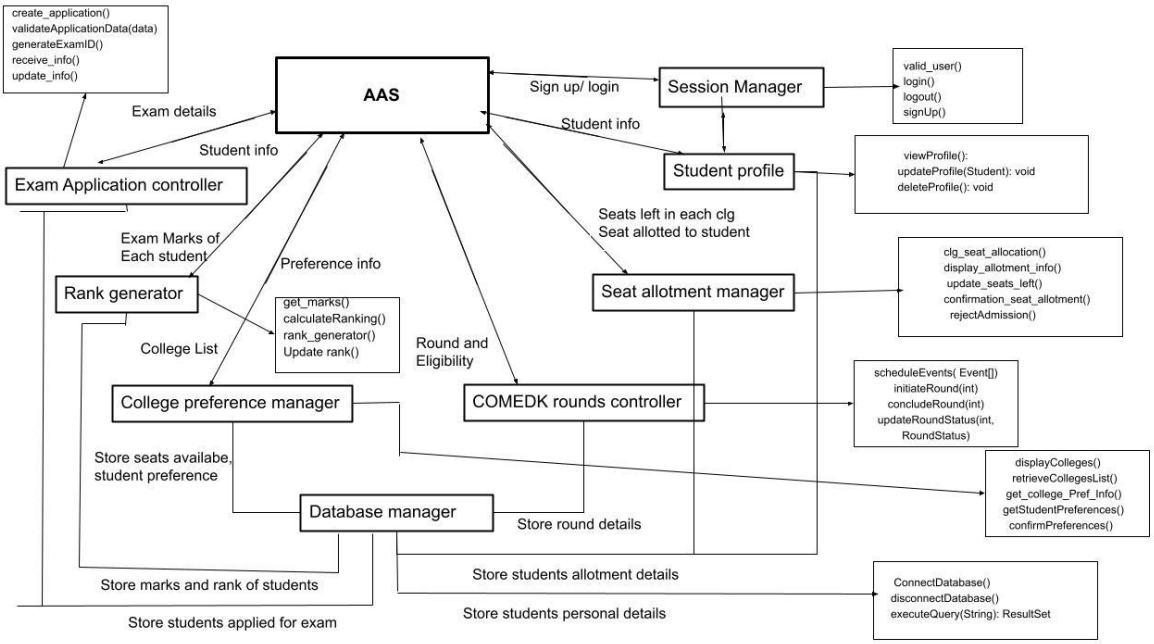
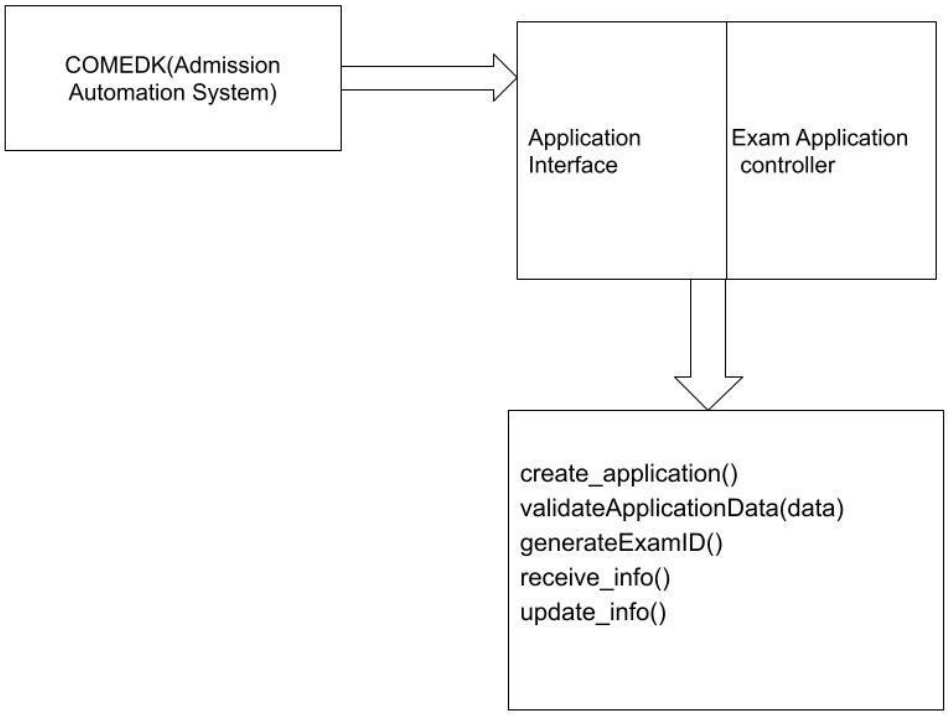


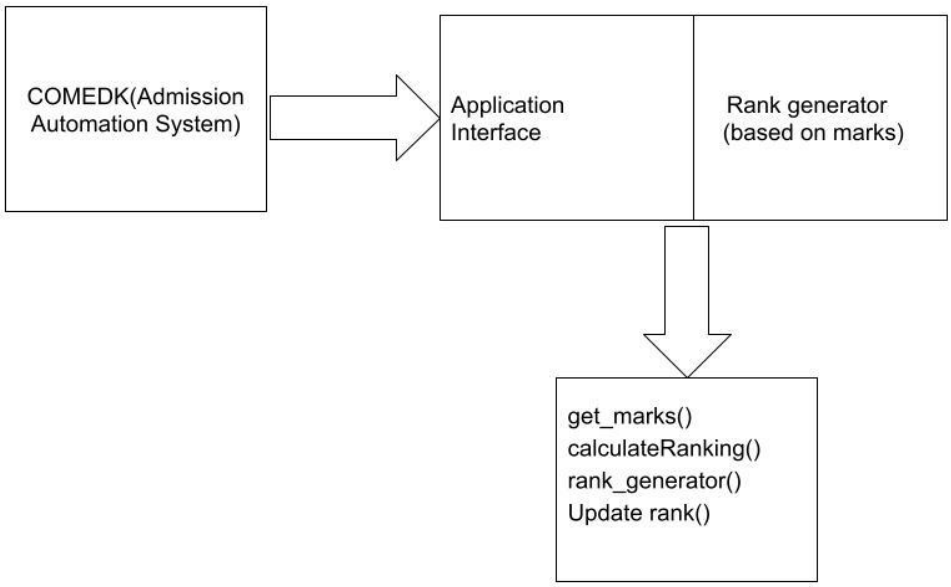
Figure 3 above represents the component diagram of the AAS system and how each module is dependent on another for its functionality. The student signs up by creating an account, or logs in to their existing account via session manager. The student then enters their personal information, academic information, and admission preferences into the Student info module. Each student will then select the colleges that they want to apply to from the College List and can manage their college preferences via preference manager. The details of students who applied for the admission exam is stored in database and regulated by the Exam Application controller module. The student's marks in the exam are stored in the 'Exam Marks of Each student' and a rank is generated for each student based on their marks via the Rank generator module. The student's eligibility for each round of the admission process is determined using the Round and Eligibility module and the different rounds of the admission process are controlled via the COMEDK rounds controller. The number of seats available in each college and the student's college preferences are stored in the 'Store seats available' and 'student preference' respectively. The student is allotted a seat in a college based on their rank, preferences, and the availability of seats using the Seat allotment manager module. The seat that has been allotted to the student is stored in the Seat allotted to student module and the student can view their seat allotment status.

3.3 Interface Description

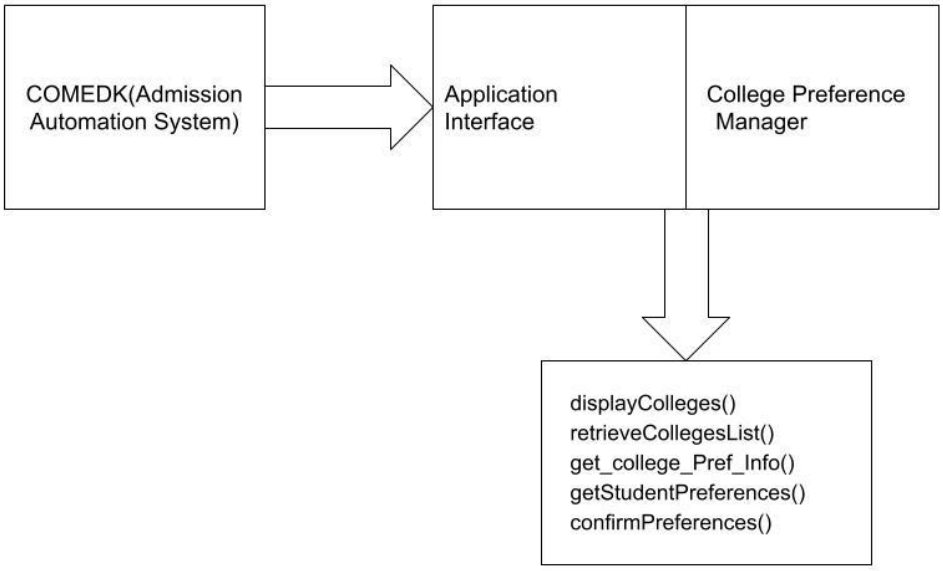
3.3.1 AAS to Exam Application Controller



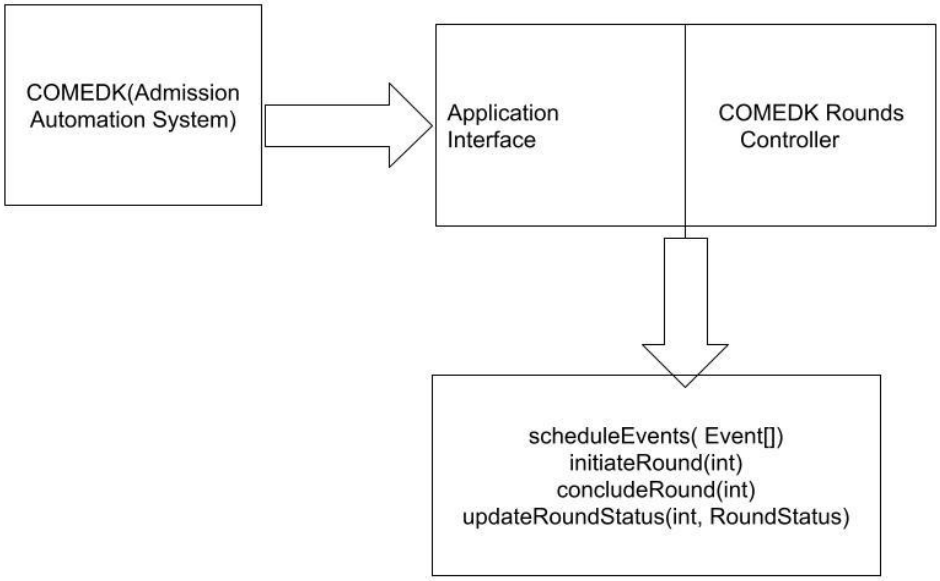
3.3.2 AAS to Rank Generator



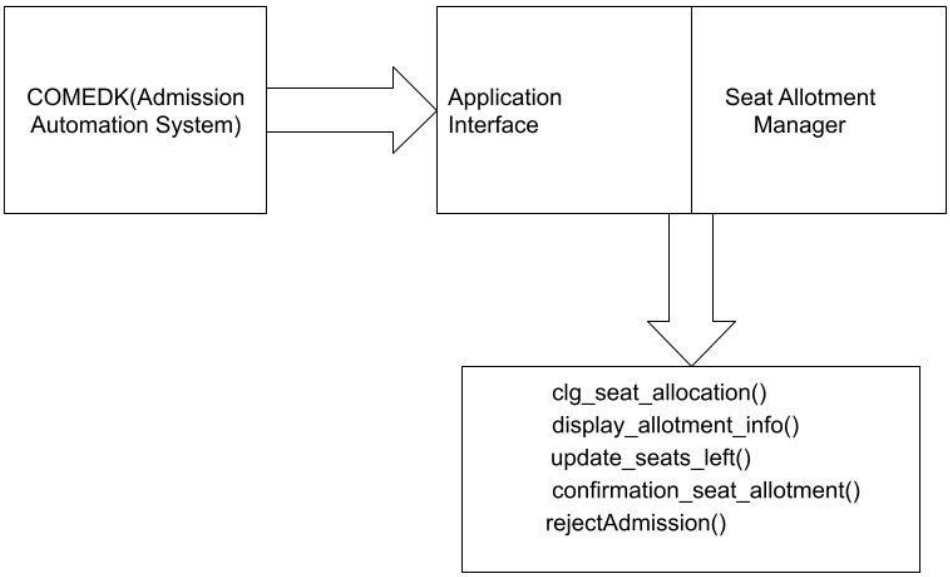
3.3.3 AAS to College Preference Manager



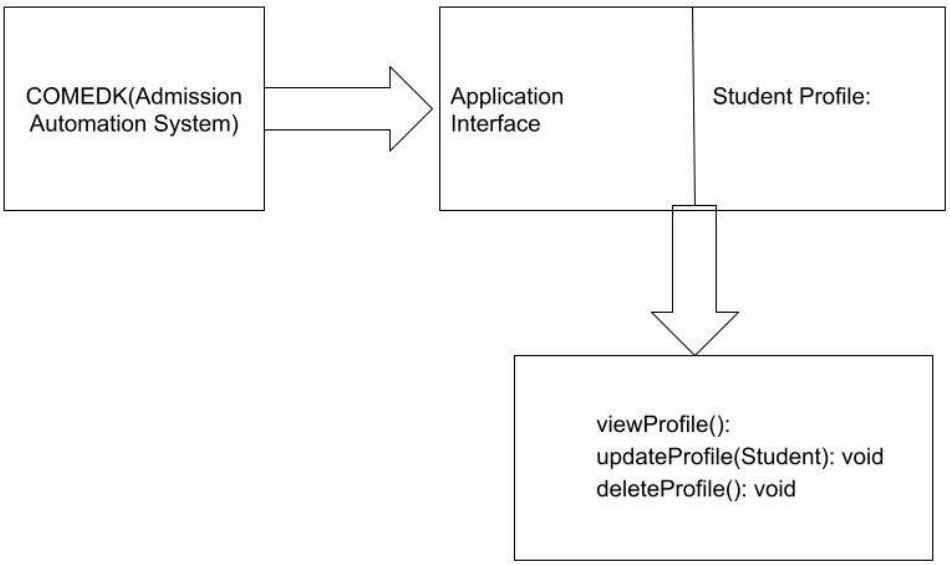
3.3.4 AAS to COMEDK Rounds Controller



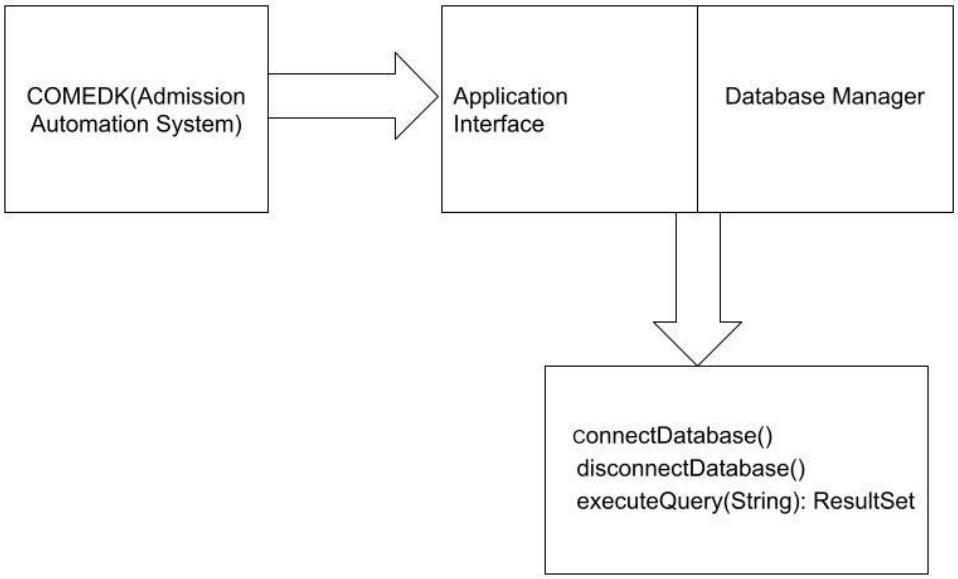
3.4.5 AAS to Seat Allotment Manager



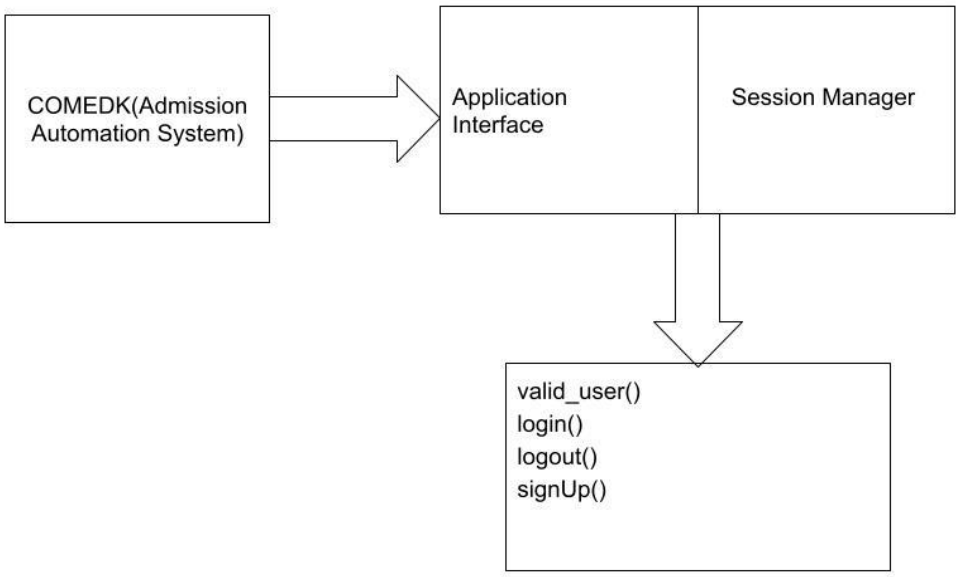
3.3.6 AAS to Student Profile



3.4.7 AAS to Database Manager



3.4.8 AAS to Session Manager



3.4 Module Interfaces

1)Exam Application Controller:

Functions**:** Manages application creation, validation, ID generation, data reception, and updates.
Purpose: Controls application process and applicant data.

2)Rank Generator:

Functions: Get student marks, calculate rankings.

Purpose: Generates rankings for seats.

3)College Preference Manager:

Functions: Set/get student preferences.

Purpose: Manages student college choices.

4)COMEDK Rounds Controller:

Functions: Start/end admission rounds.

Purpose: Controls admission process stages.

5)Seat Allotment Manager:

Functions: Allocate seats, generate reports.

Purpose: Assigns seats to students.

6)Student Profile:

Functions: View/update student data.

Purpose: Manages student profiles.

7)Database Manager:

Functions: Store/retrieve admission data.

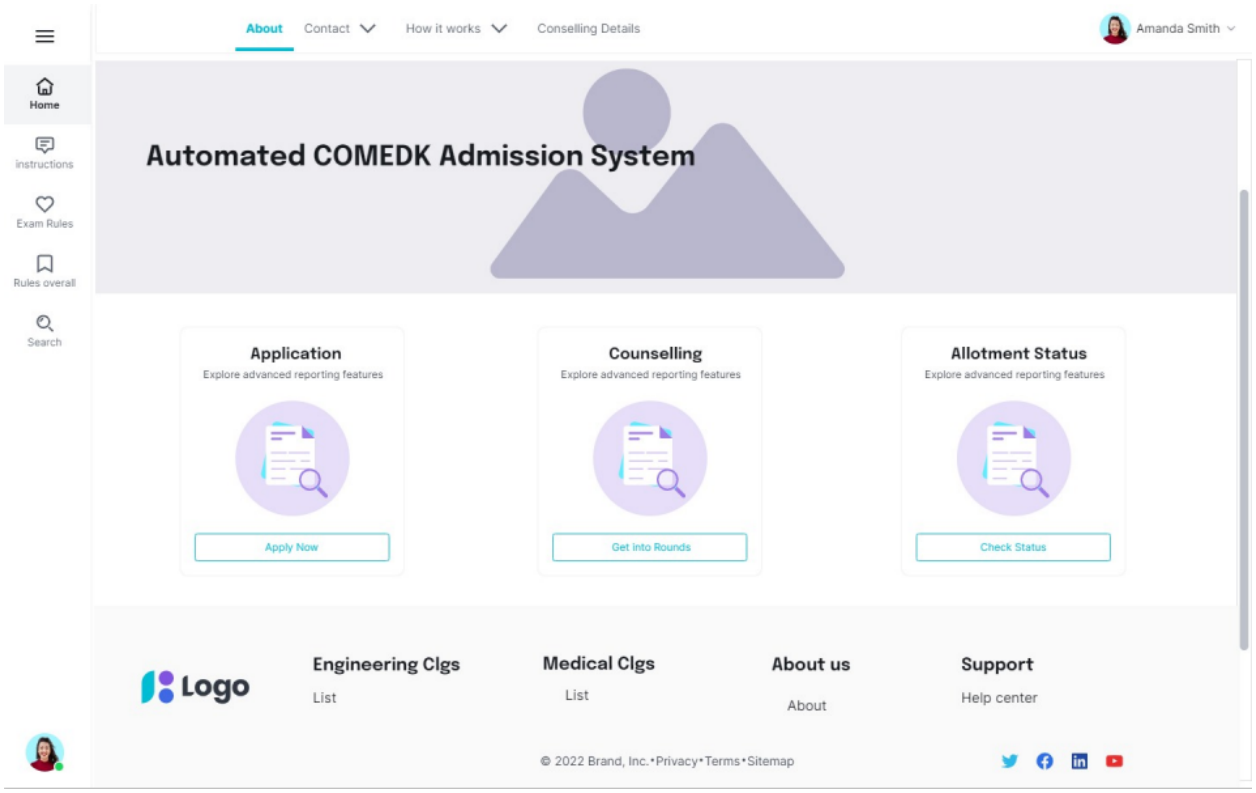
Purpose: Handles data storage.

8)Session Manager:

Functions: Validate/login/logout/signup.

Purpose: Manages user sessions

3.5 User Interfaces (GUI)



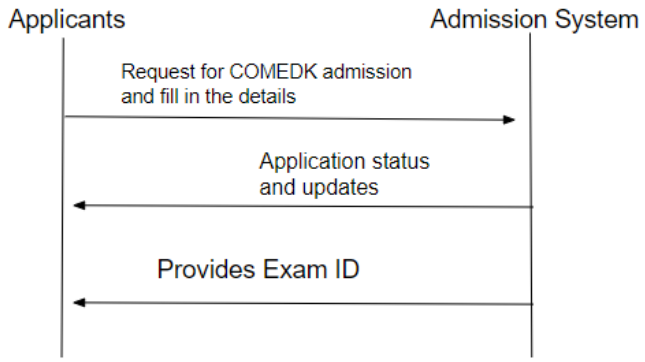
When first time users visit the Automatic COMEDK Admission website, they will be presented with an initial landing page as shown above in the figure. This homepage screen displays the different functionalities a student can explore, which includes creating an application, applying for the various rounds of counseling and monitoring its status, and checking the seat allotment status of their preferred college/university as well. One can apply either for engineering or medical colleges depending on their preference. Contact and support options are also available in case of any assistance required by the students.

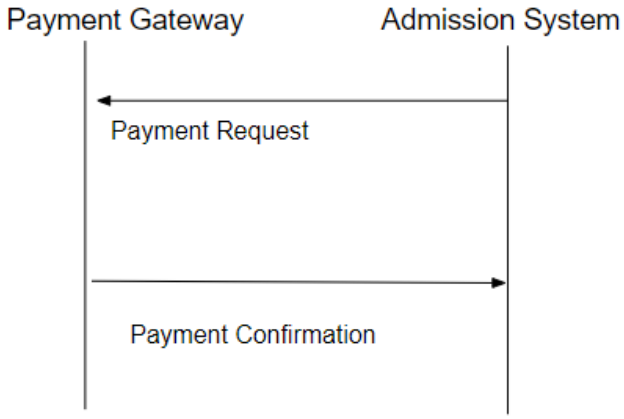
4. Detailed Design

4.1 Module Detailed Design

4.1.1 Mark Current Location

Sequence Diagrams





Pseudocode:-

Start

Function ApplyForExam():

Display "Welcome to COMEDK Admission Automation System"

Prompt "Enter your credentials (username and password)"

```
    ValidateCredentials(username, password)
    If Credentials are valid:
        Display "Application Form"
        FillApplicationForm()
        ValidateApplicationData()
        If ApplicationData is valid:
            GenerateUniqueApplicationID()
            StoreApplicationDataInDatabase()
            Display "Application submitted successfully. Application ID: [ApplicationID]"
Function GenerateRankings():
    For each student in ExamApplications:
        CalculateRankingForEngineering()
        CalculateRankingForMedical()
        StoreRankingsInDatabase()

Function SelectCollegePreferences():
    Display "Available Colleges List"
    DisplayColleges()
    For each student in ExamApplications:
        Prompt "Enter your preferred colleges (multiple choices allowed)"
        ValidateCollegePreferences()
        StoreCollegePreferencesInDatabase()

Function PerformSeatAllotment():
    RoundNumber = 1
    While RoundNumber <= 3:
        For each student in ExamApplications:
            CheckSeatAvailability()
            AllocateSeatsBasedOnRankingsAndPreferences()
            StoreSeatAllotmentResultsInDatabase()
        RoundNumber = RoundNumber + 1
```

```
Function ViewApplicationStatus():
    Prompt "Enter your application ID"
    DisplayApplicationStatus(applicationID)
    If ApplicationStatus == "Accepted":
        Display "Congratulations! You have been admitted to [CollegeName]"
Function Main():
    Display "Welcome to COMEDK Admission Automation System"
    Prompt "Select an option:"
        1. Apply for Exam
        2. View Application Status
        3. Exit
    If Option == 1:
        ApplyForExam()
    ElseIf Option == 2:
        ViewApplicationStatus()
    ElseIf Option == 3:
        Exit
End
```

4.2 Data Detailed Design

4.3 RTM

Requirement-ID	Requirement Description	Design Component	Test Cases #
4.1.1	Student access to website, login/signup	Session manager	3.1.1
4.1.2	Registers/ collects student details	Student Profile	3.1.2
4.1.3	Create and validate application data Generate an exam ID	Exam Application controller	3.2.1(for Exam Application Submission)

			3.2.2(for Exam Application Validation)
4.2.3	Get student marks Calculate ranking	Rank generator (based on marks)	3.3(for Rank Calculation)
4.3.3	Get and confirm student preferences for college	College preference manager	3.4(for College List Display) 3.5(for Preference Submission)
4.4.3(round 1) 4.5.3(round 2)	Initiate/control/update admission rounds	COMEDK rounds controller	3.6(for Seat Allotment - Round 1) 3.7 (for Seat Allotment - Round 2)
4.6.3(for final seat allotment)	Allocate and assign seats	Seat allotment manager	3.8 (for Final Seat Allotment - Round 3)
4.6.3.2	Stores all information Edit/adjust details	Database Manager	3.8.2