



**Ahmedabad
University**

CSE300 - Software Engineering

AUVisionX - Ahmedabad University Integrated Resource System

Submitted to: Prof. Khushru Doctor

Design Document

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1.1 Purpose of this document:-

In developing the software design document for our university course registration system, we aim to provide a comprehensive guide for the development team. This document outlines the system's architecture, functionality, and interactions, fostering clear understanding and effective collaboration. It serves as a blueprint, detailing modules, data flow, and user interfaces, ensuring a robust and user-friendly system. Moreover, it acts as a valuable reference for future maintenance and updates, facilitating scalability and adaptability to evolving university requirements. Our goal is to create a well-documented design that aligns with the specific needs of our university's course registration process.

1.2 Document Scope:-

This document meticulously elaborates on the architectural design of the project, serving as a foundational reference for developers and maintainers. By analyzing various system aspects, it ensures a clear and concise understanding of the proposed architecture. The document primarily focuses on the project's technical elements, including programming languages, development tools, platform design overview, system architecture, and the operational environment for the software. Its purpose is to provide a clear and precise comprehension of the proposed architecture, effectively guiding project stakeholders.

1.3 Intended Audience:-

1.3.1 University Administrators:

- System for overall management
- Oversight of course creation and scheduling
- Resource allocation and optimization

1.3.2 Academic Staff:

- Features for grading and assessment
- Attendance tracking tools
- Communication functionalities with students

1.3.3 Students:

- Course registration capabilities
- Access to personalized schedules
- Monitoring academic progress and grades

1.3.4 Developers/Maintainers:

- Utilization of detailed system architecture
- Implementation guidance for effective development
- Maintenance reference for continuous system upkeep

2. System Architecture:-

2.1 General Overview:-

In response to the evolving needs of Ahmedabad University's student concerns, since the course registration platform AURIS has its own set of limitations, we are trying to prepare a platform that can somehow solve the concerns arising. Acknowledging the dynamic nature of student registration, the software aims to facilitate a seamless experience for both students and university administrators.

2.2 Current Challenges:-

The current course registration system has many things that could be improved regarding capacity transparency for a certain course, concurrency issues, and the PHP backend slows down during the initial phases of the registration. Moreover, if any problem arises until you contact the admin or any higher authority, it is too late and the schedule for the next entire semester is ruined.

2.3 Goals and Guidelines:-

The solution should be such that all the requirements stated in the requirements document both functional as well as non-functional, should be accomplished. Also, the software should be coded in such a way that it could incorporate required future changes

2.4 Developed Environment:-

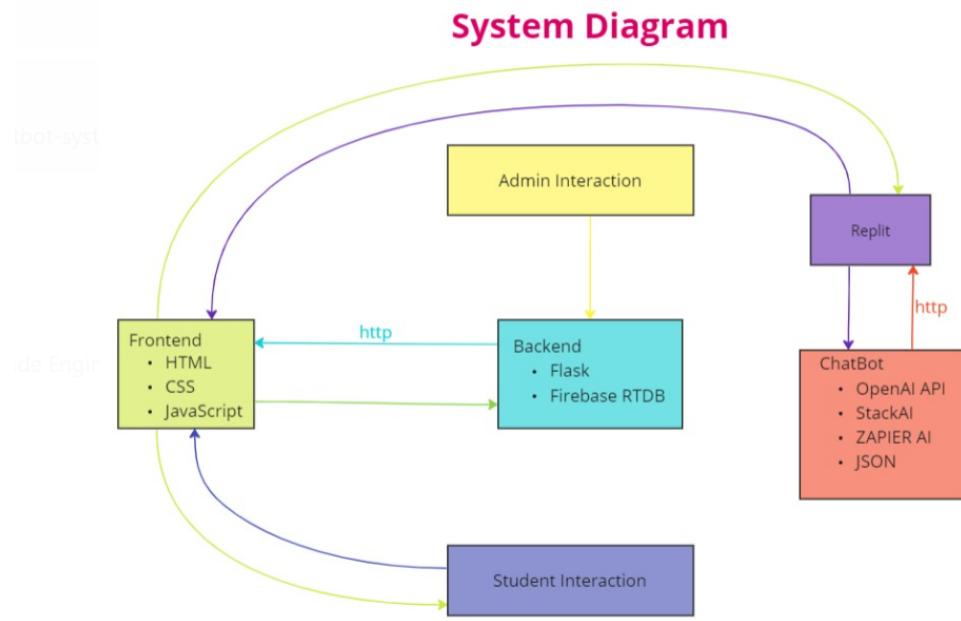
Software	Description
Firebase	Realtime Database
Flask	Backend Server
Python	Server Side Language
HTML, CSS, JS	Programming Frameworks for Web
OpenAI, Zapier AI	Chatbot

2.5 System Architecture:-

Frontend: AUVisionX's frontend, crafted with HTML, CSS, and JavaScript, ensures a visually appealing and responsive user interface. Through these technologies, students effortlessly navigate the system, accessing features like course registration, virtual campus tours, and event updates with ease.

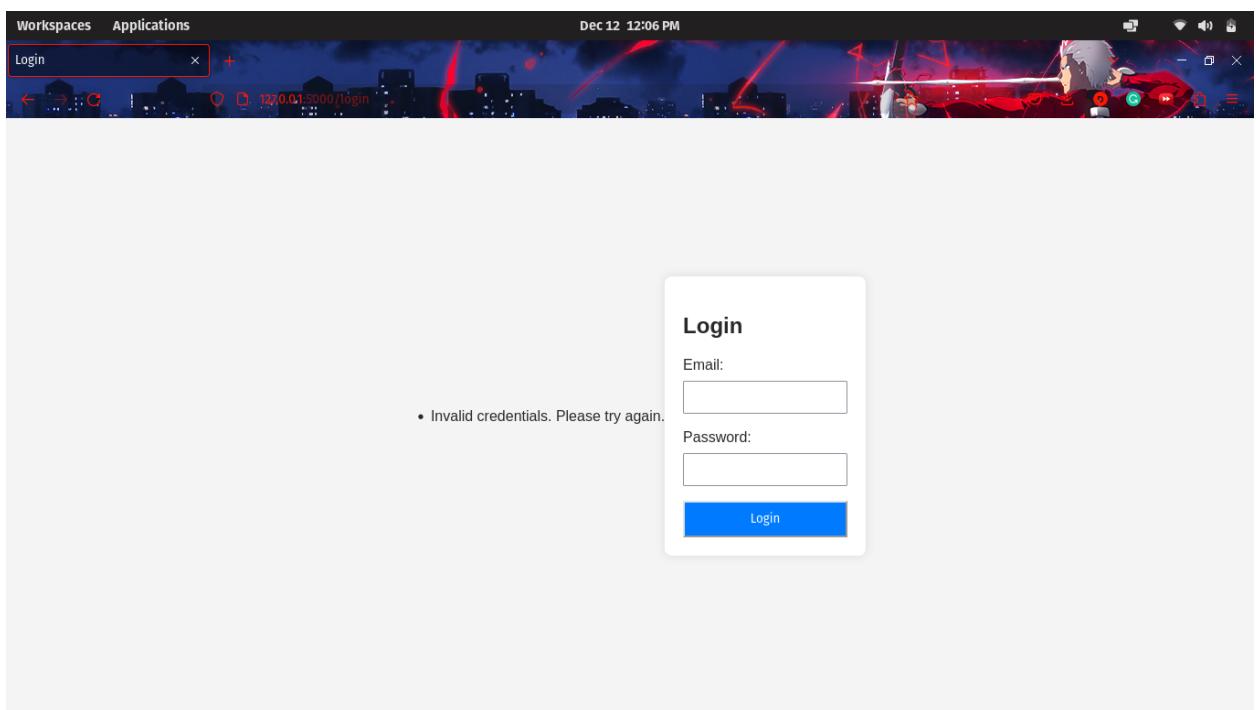
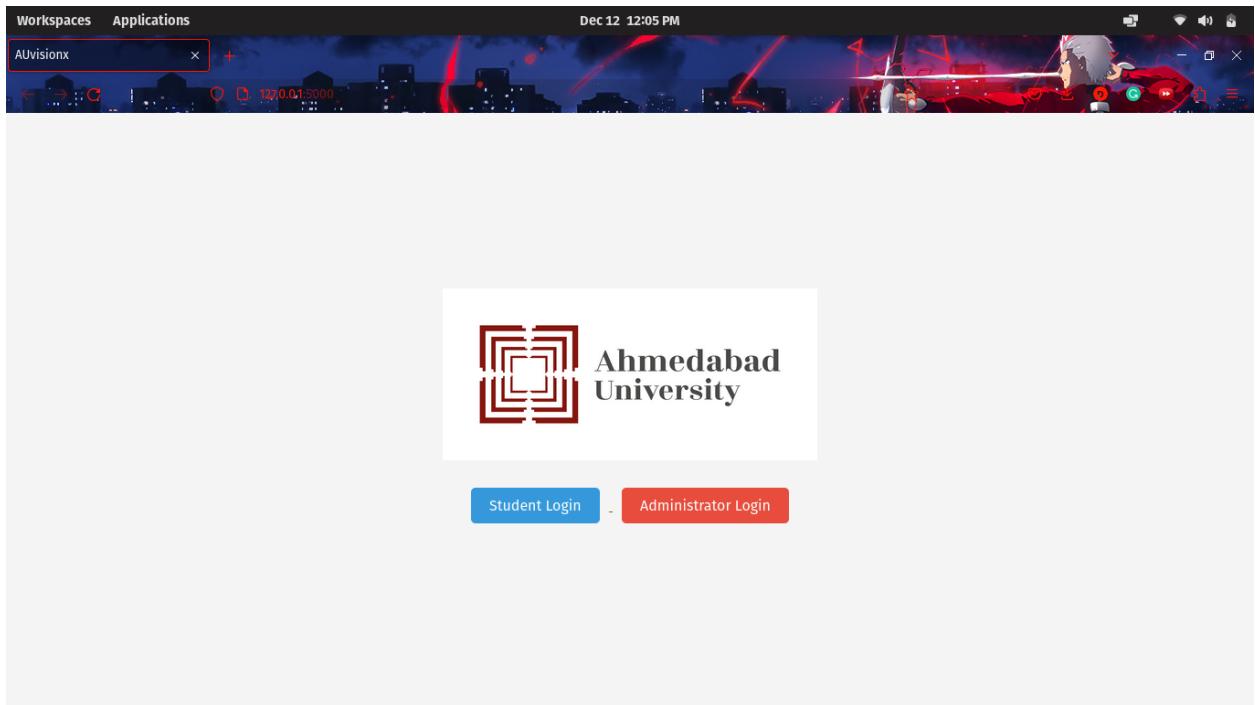
Backend: Powered by Flask and Python, AUVisionX's backend orchestrates the system's functionality seamlessly. Flask facilitates quick development, while Python ensures robust processing capabilities. This backend synergy enables efficient data management, user authentication, and dynamic content delivery.

Database: AUVisionX leverages Firebase for its database, ensuring real-time data storage and retrieval. Firebase's NoSQL structure allows for quick and scalable data operations, providing instantaneous updates for course registrations and enhancing overall system responsiveness.



2.6 System Descriptions:-

Framework Tools	Application	Description
Firebase	Database	Contains all the data regarding course contents, course schedule, and course capacity.
Flask	Backend Server	Plays a major role in HTTP request handling, User Authentication, Session Management, Scalability
Python	Server-side language	Streamline the development process and provide tools for handling web-related tasks, including routing, authentication, and database integration.
Html, CSS & Js	Frameworks for web	Helps in form handling, user authentication, AJAX requests, and error handling.
OpenAI, Zapier AI	Chatbot	Serves as support assistant to handle primary queries of students. Uses OpenAI API, StackAI, ZapierAI, and Replit for deployment



Workspaces Applications

Dashboard Dec 12 12:06 PM

127.0.0.1:8000/dashboard

[VIEW ALL COURSES](#) [VIEW YOUR COURSES](#) [ENROLL TO COURSE](#) [LOGOUT](#)



Workspaces Applications

All Courses Dec 12 12:07 PM

127.0.0.1:8000/courses/all

[Back to Dashboard](#)

All Courses

SE592

Capacity: 20

Start Date: 2023-05-03

End Date: 2023-06-28

Professor: [adsf]

SE593

Capacity: 0

Start Date: 2023-05-03

End Date: 2023-06-28

Professor: [manthu]

Workspaces Applications

Enrolled Courses Dec 12 12:07 PM

127.0.0.1:8000/courses/enrolled

[Back to Dashboard](#)

Enrolled Courses

SE607 Drop Course

Capacity: 22

SE592 Drop Course

Capacity: 20

SE611 Drop Course

Capacity: 17

Drop Course



Workspaces Applications

Courses Not Enrolled Dec 12 12:07 PM

127.0.0.1:8000/courses/not-enrolled

[Back to Dashboard](#)

Not Enrolled Courses

Login successful!

SE593 Enroll

Capacity: 0
Start Date: 2023-05-03
End Date: 2023-06-28
Has Prerequisites: 0

SE594 Enroll

Capacity: 11
Start Date: 2023-07-11
End Date: 2023-08-28
Has Prerequisites: 0

SE608 Enroll

Capacity: 15
Start Date: 2023-09-08
End Date: 2023-12-05
Has Prerequisites: 1

SE614 Enroll

Capacity: 22
Start Date: 2023-09-08
End Date: 2023-12-05
Has Prerequisites: 1



Workspaces Applications Courses Not Enrolled Dec 12 12:07 PM

Back to Dashboard

Not Enrolled Courses

Enrollment successful!

SE593

Capacity: 0
Start Date: 2023-05-03
End Date: 2023-06-28
Has Prerequisites: 0

[Enroll](#)

SE608

Capacity: 15
Start Date: 2023-09-08
End Date: 2023-12-05
Has Prerequisites: 1

[Enroll](#)

SE614

Capacity: 22
Start Date: 2023-09-08
End Date: 2023-12-05
Has Prerequisites: 1

[Enroll](#)



Workspaces Applications Courses Not Enrolled Dec 12 12:07 PM

Back to Dashboard

Not Enrolled Courses

Course is full. Cannot enroll.

SE593

Capacity: 0
Start Date: 2023-05-03
End Date: 2023-06-28
Has Prerequisites: 0

[Enroll](#)

SE608

Capacity: 15
Start Date: 2023-09-08
End Date: 2023-12-05
Has Prerequisites: 1

[Enroll](#)

SE614

Capacity: 22
Start Date: 2023-09-08
End Date: 2023-12-05
Has Prerequisites: 1

[Enroll](#)



Workspaces Applications

Dashboard Dec 12 12:09 PM

127.0.0.1:8000/dashboard

AURIS GPT Our virtual assistant is here to help you.

Today

Join the Ahmedabad University Family!

Feel free to ask more if you need more information.

How should I contact programme office

It looks like you want to submit a ticket!

What is the email that you placed the order with?

Message...

This screenshot shows a desktop environment with a workspace interface. In the top left, there are tabs for 'Workspaces' and 'Applications'. A window titled 'Dashboard' is open, displaying a dark-themed interface with a city skyline background. At the bottom of this window are four buttons: 'VIEW ALL COURSES', 'VIEW YOUR COURSES', 'ENROLL TO COURSE', and 'LOGOUT'. To the right of the workspace, a floating window for 'AURIS GPT' is visible, with the message 'Our virtual assistant is here to help you.' Below this, a timestamp 'Today' is shown, followed by several conversational messages. The messages include: 'Join the Ahmedabad University Family!', 'Feel free to ask more if you need more information.', 'How should I contact programme office', 'It looks like you want to submit a ticket!', and 'What is the email that you placed the order with?'. A text input field labeled 'Message...' is at the bottom of the floating window.

Workspaces Applications

Login Dec 12 12:09 PM

127.0.0.1:8000/login

Login

Email:

• Logged out successfully!

Password:

Login

This screenshot shows a desktop environment with a workspace interface. In the top left, there are tabs for 'Workspaces' and 'Applications'. A window titled 'Login' is open, displaying a dark-themed interface with a city skyline background. The window contains a 'Login' form with fields for 'Email' (an empty input field) and 'Password' (an empty input field). Below the form, a message states '• Logged out successfully!'. A large blue 'Login' button is at the bottom of the form. The background of the workspace shows a blurred view of other windows and icons.

Workspaces Applications Dec 12 12:10 PM

Admin Course Management + 127.0.0.1:5000/admin

Course Management

Login successful!

Add Course

Course ID:

Course Name:

Course Capacity:

Course Start Date:

 dd / mm / yyyy

Course End Date:

 dd / mm / vvvv

SE89

new_course

18

13 / 12 / 2023

13 / 06 / 2024

No

Add Course

Workspaces Applications

Admin Course Management +

Dec 12 12:11 PM

127.0.0.1:8000/admin

Course Management

Course SE89 added successfully.

Add Course

Course ID:

Course Name:

Course Capacity:

Course Start Date:

 dd / mm / yyyy

Course End Date:

 dd / mm / yyyy

Workspaces Applications Dec 12 12:11 PM

Admin Course Management + 127.0.01:8000/admin

Course Capacity:

Course Start Date: dd / mm / yyyy [Calendar](#)

Course End Date: dd / mm / yyyy [Calendar](#)

Has Prerequisites: No [Down arrow](#)

[Add Course](#)

Delete Course

Course ID to Delete: SE89

[Delete Course](#)



Workspaces Applications Dec 12 12:11 PM

Admin Course Management + 127.0.01:8000/admin

Course Management

Course SE89 deleted successfully.

Add Course

Course ID:

Course Name:

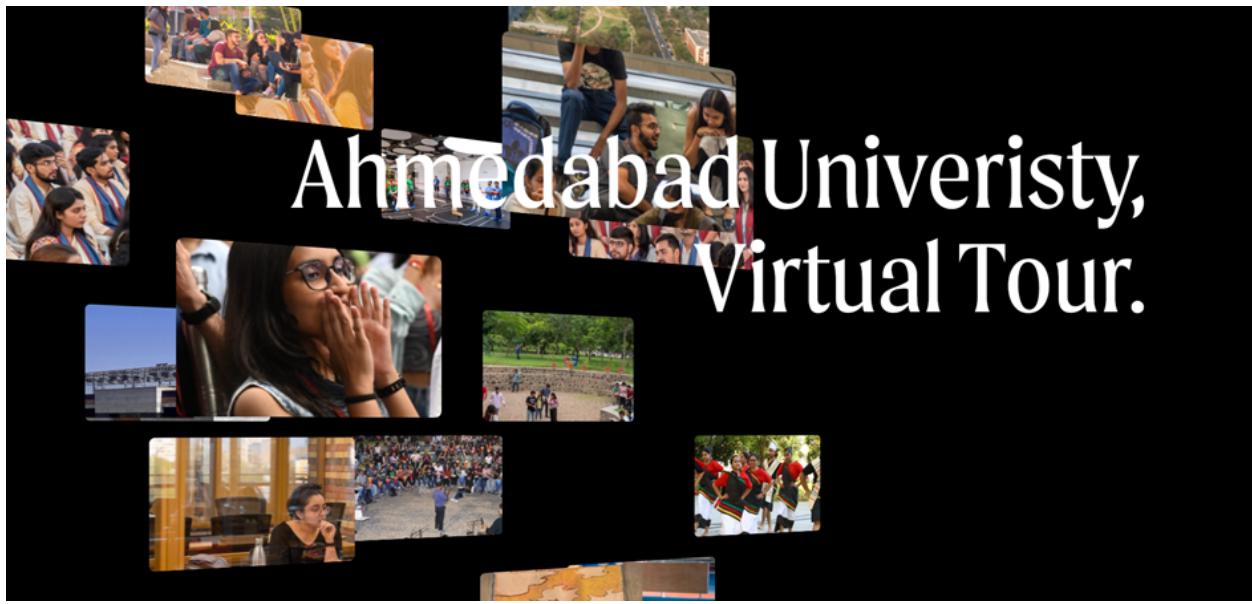
Course Capacity:

Course Start Date: dd / mm / yyyy [Calendar](#)

Course End Date: dd / mm / yyyy [Calendar](#)



Ahmedabad University, Virtual Tour.



Ahmedabad University is a
private, non-profit research
university.



Upcoming Events — 1 / 4 ← →

au website

auris

Batch of 2024

Date: 15 Dec
Time: 7pm
Location: GICT courtyard
[Registration Link](#)

Hola, Seniors we know this is last minute , but we would like to invite you to the Farwell of batch of 2024 . A small party to celebrate our seniors and their journey ,a night filled with laughter, fun and lots of memories .
You can pay via Paytm or Google Pay .
Amount : ₹ 100/- per person
Contact : +91 9876543210

Farewell Batch'24

YOU ARE SOLEMNLY INVITED
TO THE FAREWELL PARTY

DECEMBER | GICT COURTYARD | AT
15 | 7

**

Upcoming Events 2 / 4 < >

au website

Graduate Admission Events

Date: 16 December-7 January'24

Detailed Information on Ahmedabad University's academic structure and various programmes.

Dedicated time to meet and interact with faculty members to understand the courses on offer.

Campus Tour to help familiarise with various Schools and Centres of the University and check out the myriad facilities and laboratories.

University Upcoming Events 3 / 4 < >

au website

Dhun
IN QUEST OF
A LECTURE DEMONSTRATION
Pt. Kumar Gandharva
04 JANUARY 2023
REGISTER

Date: Thursday, January 4, 2023
Time: 6:00 PM
Venue: Room 314, The Black Box, School of Arts and Sciences
Register Now

Pt. Kumar Gandharva's engagement with the tradition was uncompromisingly authentic. Even when his renditions of raga-s and well-known bandishes departed from the norm, he was reconnecting with the tradition in a radical way. His musical creativity in his Khyal explorations had its origins in his quest for the dhun or the melodic kernel at the heart of every raga.

Upcoming Events 4 / 4 < >

au website

Economics Conference
Amrut Mody School of Management
Ahmedabad University
Call for Papers
2024
LAST DATE OF SUBMISSION: OCTOBER 2023

Date: January 5-6, 2024
Venue: Central Campus, Ahmedabad University.
Registration Link

The Annual Economics Conference by Amrut Mody School of Management of Ahmedabad University offers a global forum for dissemination of modern research in all areas of Economics and Finance.