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Project Report:

AirAcademia - A Comprehensive Educational Management App for University Students

Introduction

In today's digital landscape, there is a growing need for innovative educational tools. Universities, serving as centers of knowledge and development, need robust platforms to support students' academic and extracurricular activities. AirAcademia is a mobile application tailored for students at Air University. This app is designed to simplify academic processes, offer convenient access to vital resources, and improve the overall student experience by incorporating cutting-edge technological features

About the App

AirAcademia is a one-stop solution for university students to manage their academic tasks and keep themselves updated with the latest announcements from the university. The application brings together functionality, user-friendliness, and real-time data accessibility to provide a robust platform tailored for university requirements.

Key Features

1. **Login Page:**
   - Secure login functionality connected to Firebase authentication for seamless and secure access.
2. **AI Integration:**
   - An AI search engine designed to assist students in quickly and efficiently locating relevant information
3. **Notepad Page:**
   - A digital notepad integrated into the system that enables students to take notes during lectures or while studying.
4. **Timetable Page:**
   - Dedicated sections for students to check and manage their class schedules, ensuring punctuality and organization.

5. **Home Activities Page:**
    - A feature showcasing classwork activities to encourage student participation.

6. **Course Guidebooks Page:**
    - Easy access to detailed course guidebooks, providing clarity and support for academic planning.

7. **Past Papers Page:**
    - A set of past exam papers designed to help students prepare and grasp the patterns of the course

8. **Complaints Page:**
    - A platform that allows students to submit feedback or complaints directly to the administration for quick resolution.

9. **Announcements Page:**
    - A dedicated area for showcasing university-wide updates, news, and important announcements

10. **Google Classroom:**
    - Integrated GCR with button that students can easily navigate to GCR to monitor their performance.

11. **Dictionary Integration:**
    - Dictionary is integrated to assist students to enhance their vocabulary and quickly and efficiently locating relevant information.

Data Management and Connectivity

AirAcademia uses Firebase and Fire store Database for real-time updates and storage of data. This ensures that students always have access to the most current information, creating a dynamic and reliable educational environment.

With cutting-edge technology and a student-centered design philosophy, AirAcademia is on the cusp of revolutionizing how students at Air University will navigate their academic journey. The app not only enhances efficiency but also brings about a sense of community within the university.

Mobile Application Development: Top 10 Factors to Consider

When developing AirAcademia, the following essential steps were adhered to, ensuring a smooth and efficient development process:

1. **Research:**

- Identified key needs and requirements for university students to ensure the app delivers practical solutions.

2. Identify Target Audience:

- Designed the app specifically for Air University students, addressing their academic and extracurricular challenges.

3. Right Platform Selection:

- Choose Flutter, an open-source framework, along with the Dart programming language for cross-platform development. This decision ensures compatibility across both Android and iOS devices while providing a consistent user experience

4. Set Plan of Action:

- Established a clear development roadmap that outlines the process from ideation to deployment, including specific milestones for each feature. Regular reviews were conducted to ensure alignment with project goals.

5. Know Your Budget:

- Managed resources effectively by utilizing open-source tools like Firebase for backend services and real-time database management, which helped maintain high performance without going over budget.

6. Think Out of the Box:

- Introduced innovative features like AI and dictionary search to enhance usability and provide a cutting-edge experience.
- Combined all essential tools and resources (like notepads, schedules, guidebooks, and announcements) into a single app, making it easier for students to manage their academic lives and enhancing convenience

7. Smooth & Efficient:

- Emphasized intuitive design and performance enhancement to provide a smooth user experience. Every feature was crafted with a focus on speed and dependability

8. User Experience:

- Focused on creating user-friendly interfaces and enhancing accessibility. We conducted internal tests on design prototypes to guarantee simplicity and smooth navigation.

9. Focus on Marketing Strategy:

- Intended to launch the app to students via university emails and social media channels. Set up informational sessions to help students get acquainted with its features.

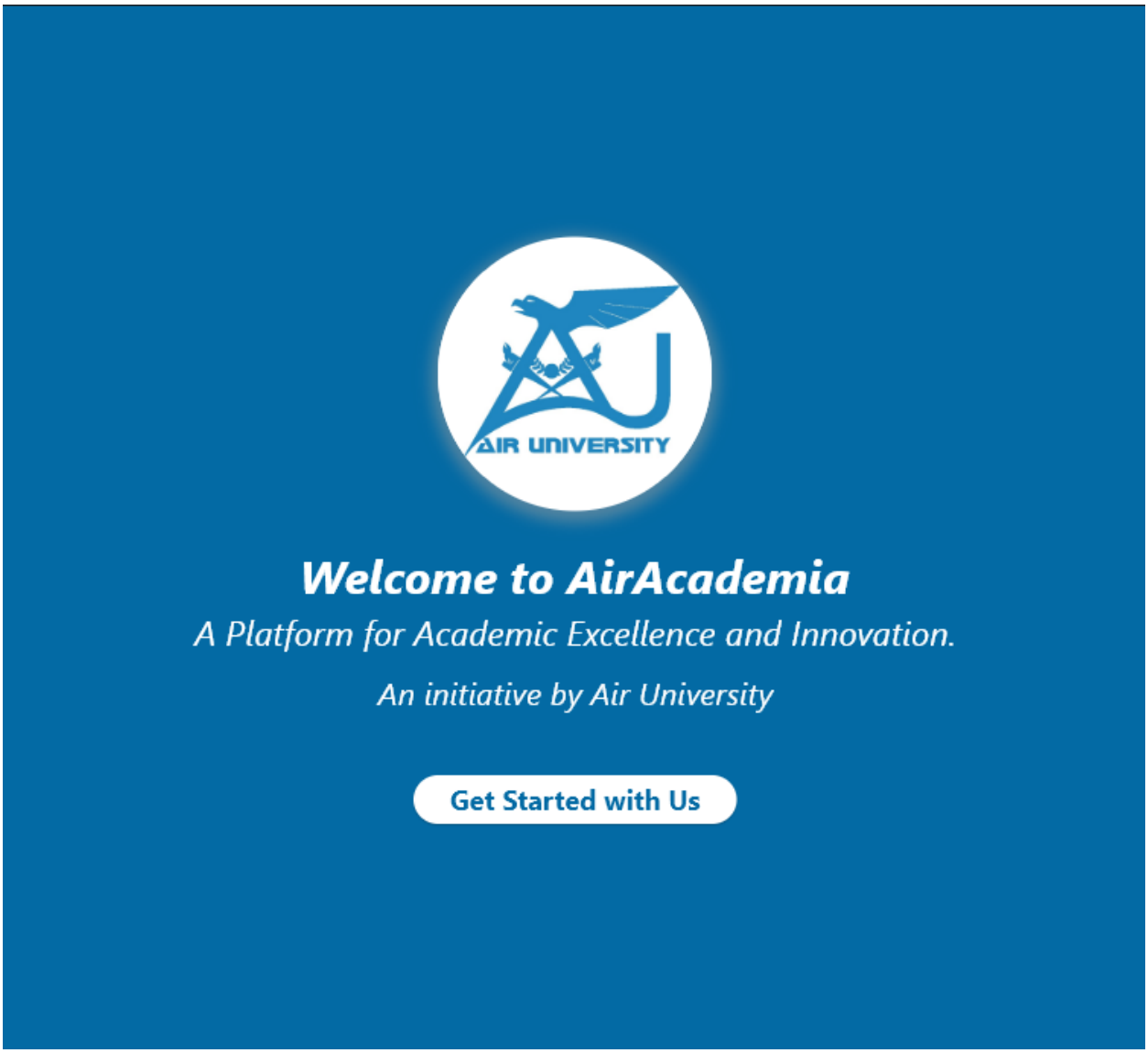
10. Testing:

- Performed functional and performance tests to pinpoint and resolve any issues. Made sure all features operated correctly prior to release, giving priority to feedback from initial users.

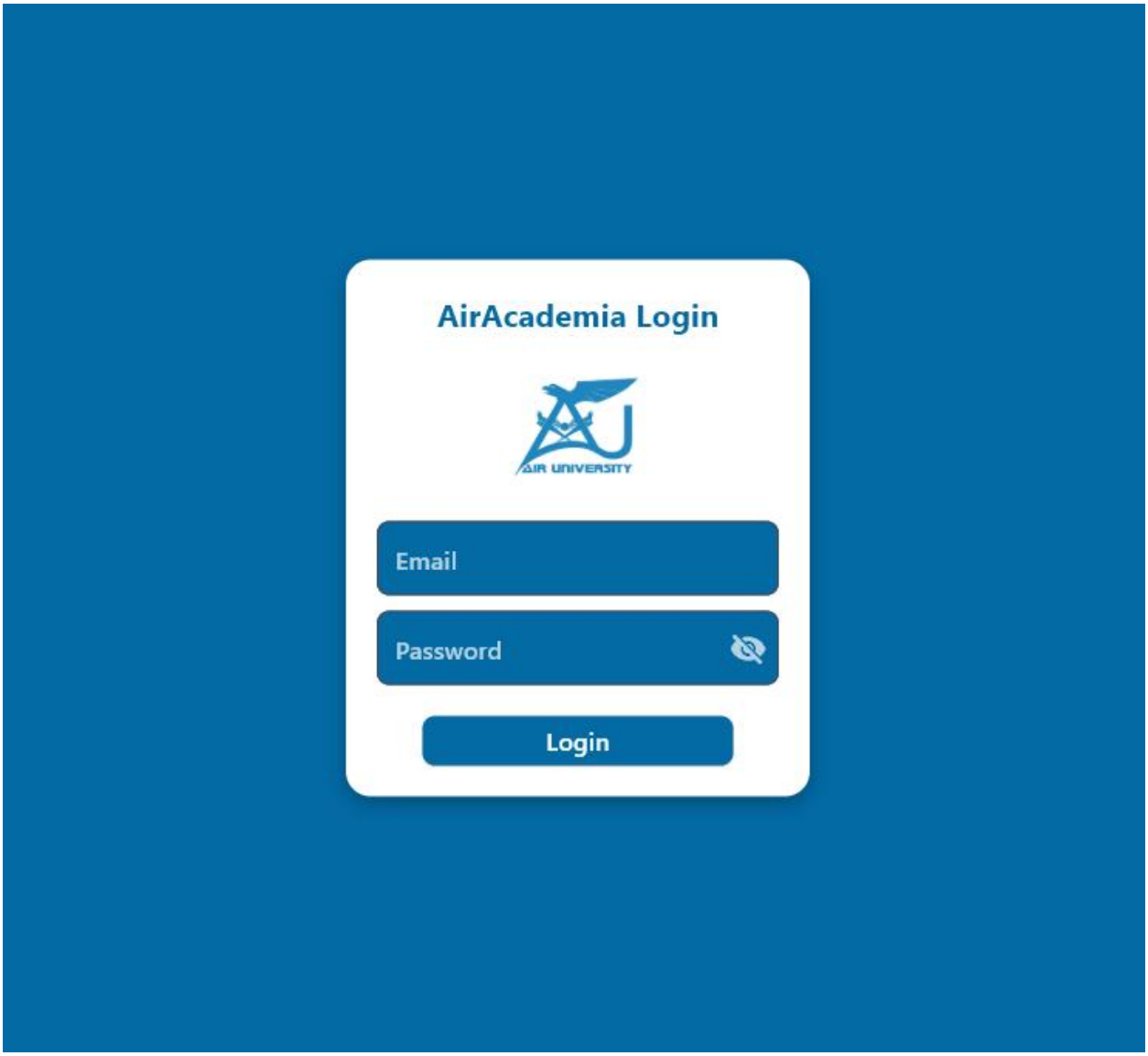
Screenshots of AirAcademia

To illustrate the progress and design of AirAcademia, screenshots of the app's primary pages (Login, Dictionary, Notepad, Timetable, etc.) have been included below:

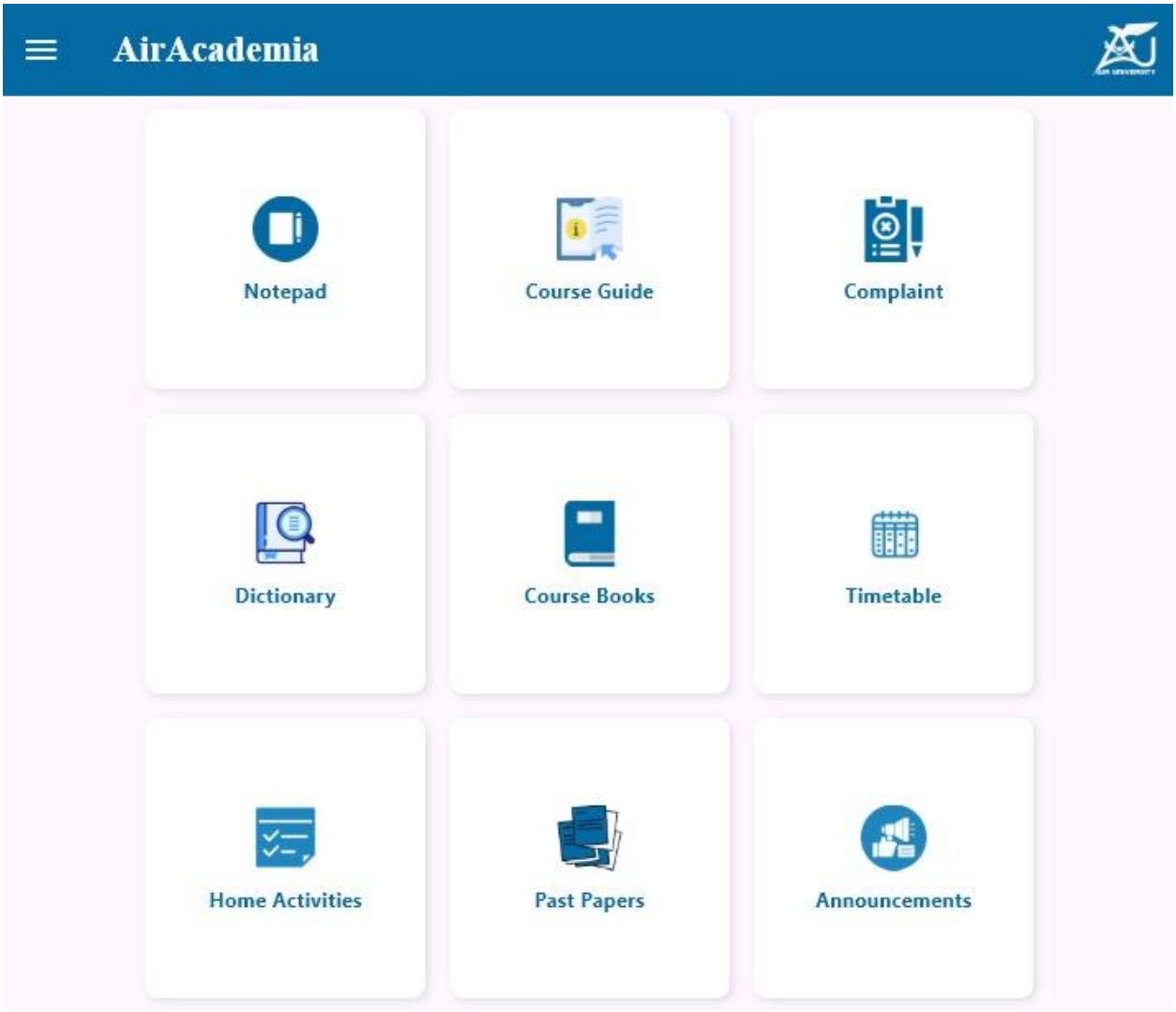
Welcome Screen

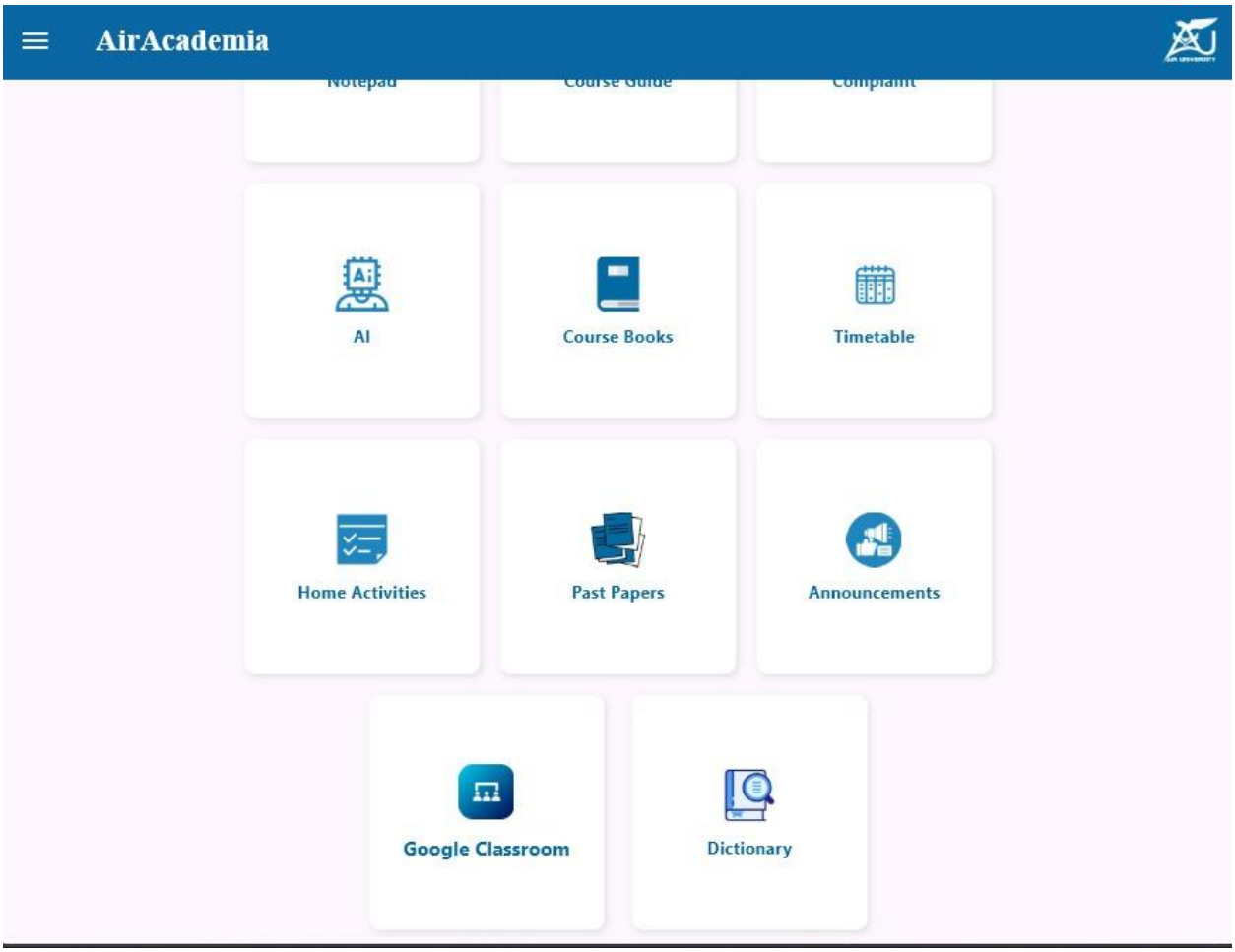


Login Page

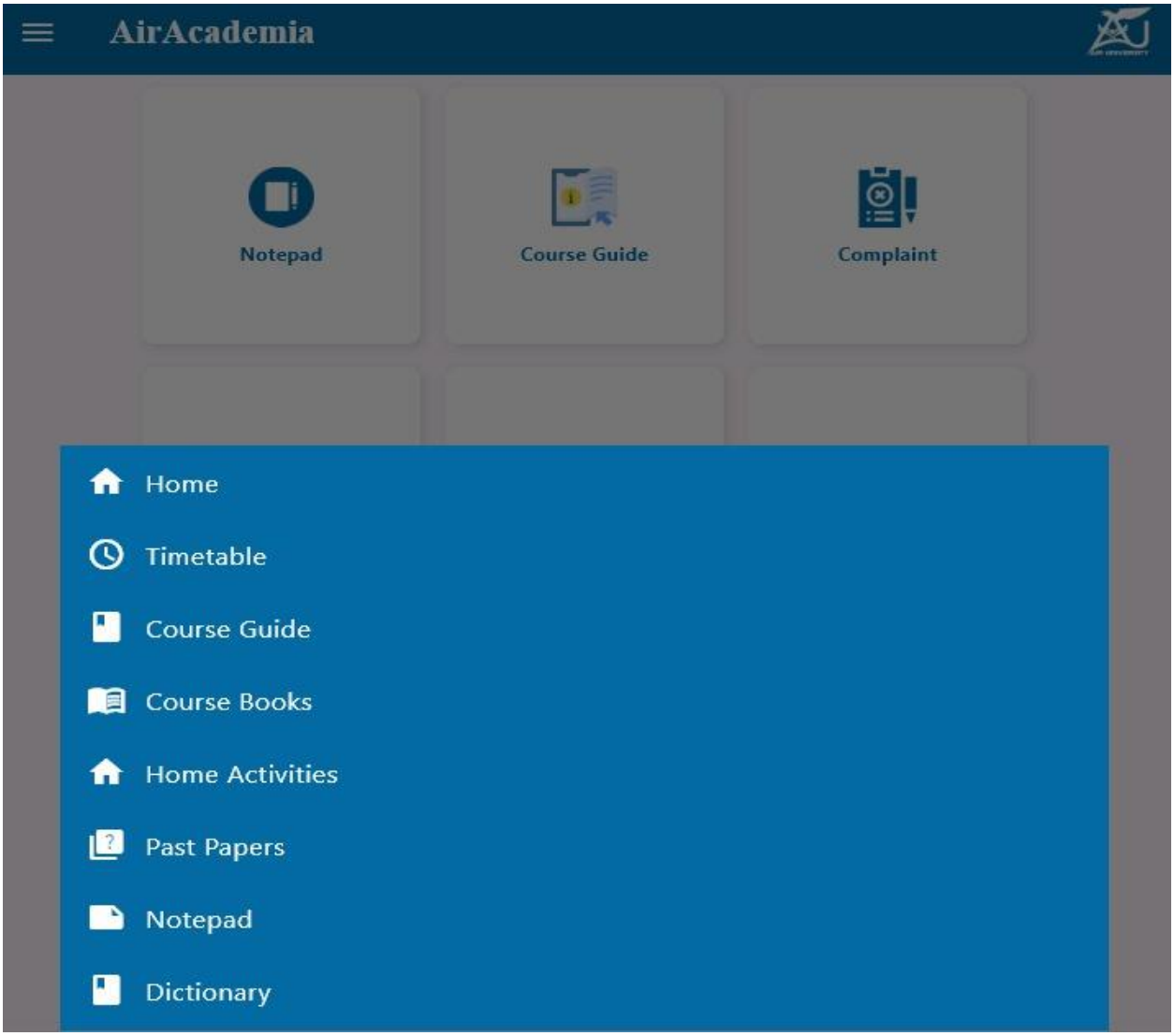


HomePage

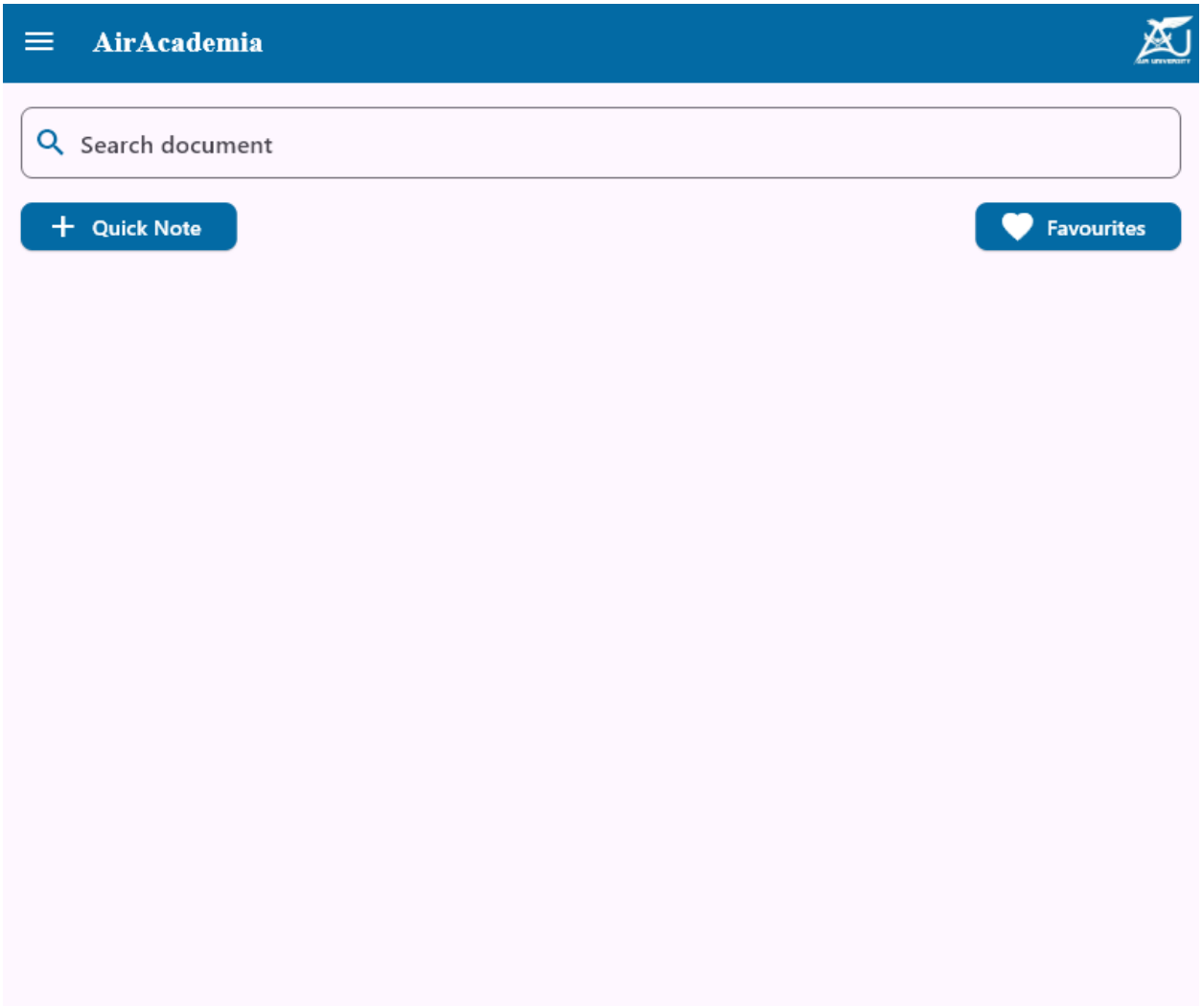

AirAcademia
Notepad
Course Guide
Complaint
Dictionary
Course Books
Timetable
Home Activities
Past Papers
Announcements

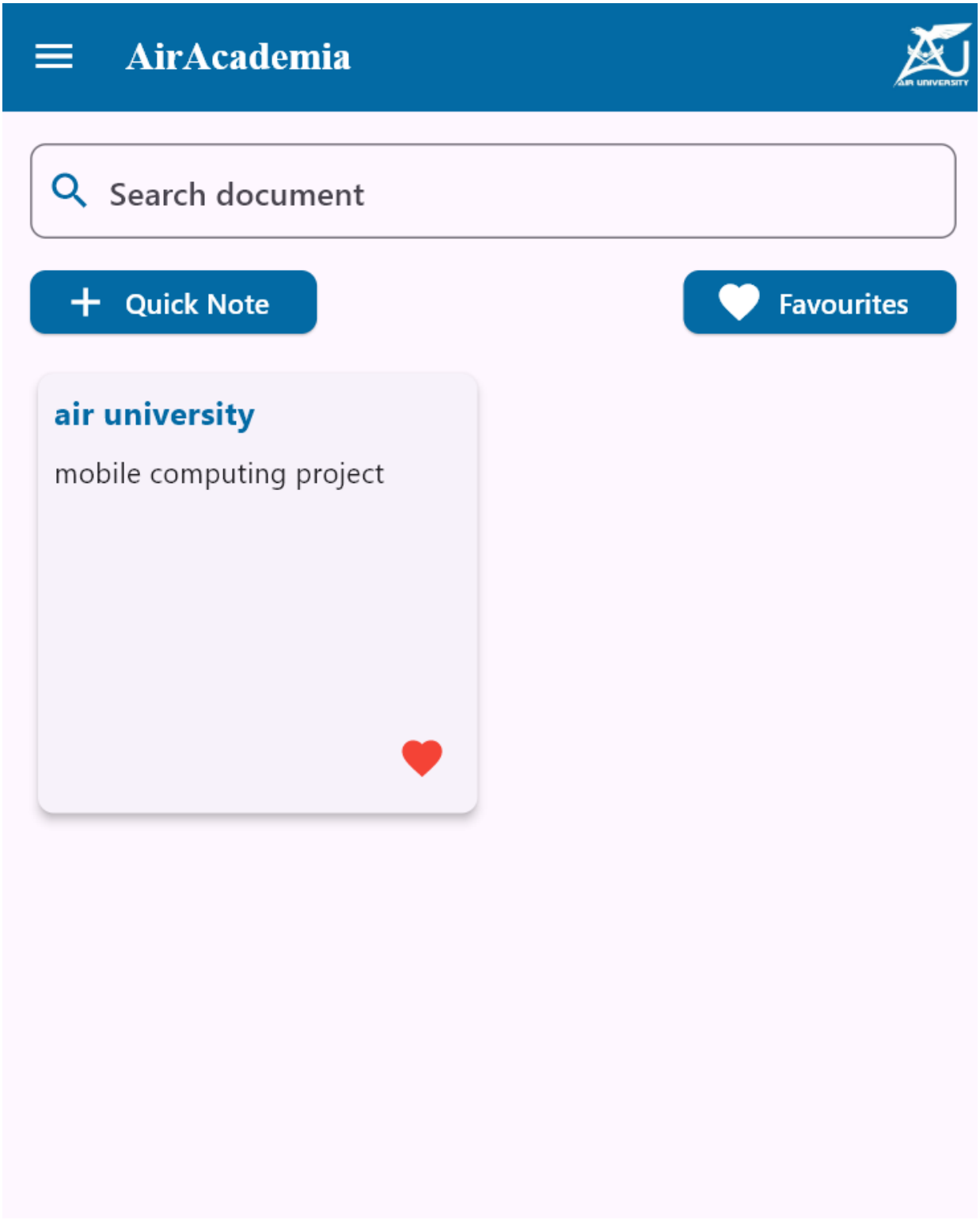

AirAcademia
Notepad
Course Guide
Complaint
AI
Course Books
Timetable
Home Activities
Past Papers
Announcements
Google Classroom
Dictionary

Grid menu:

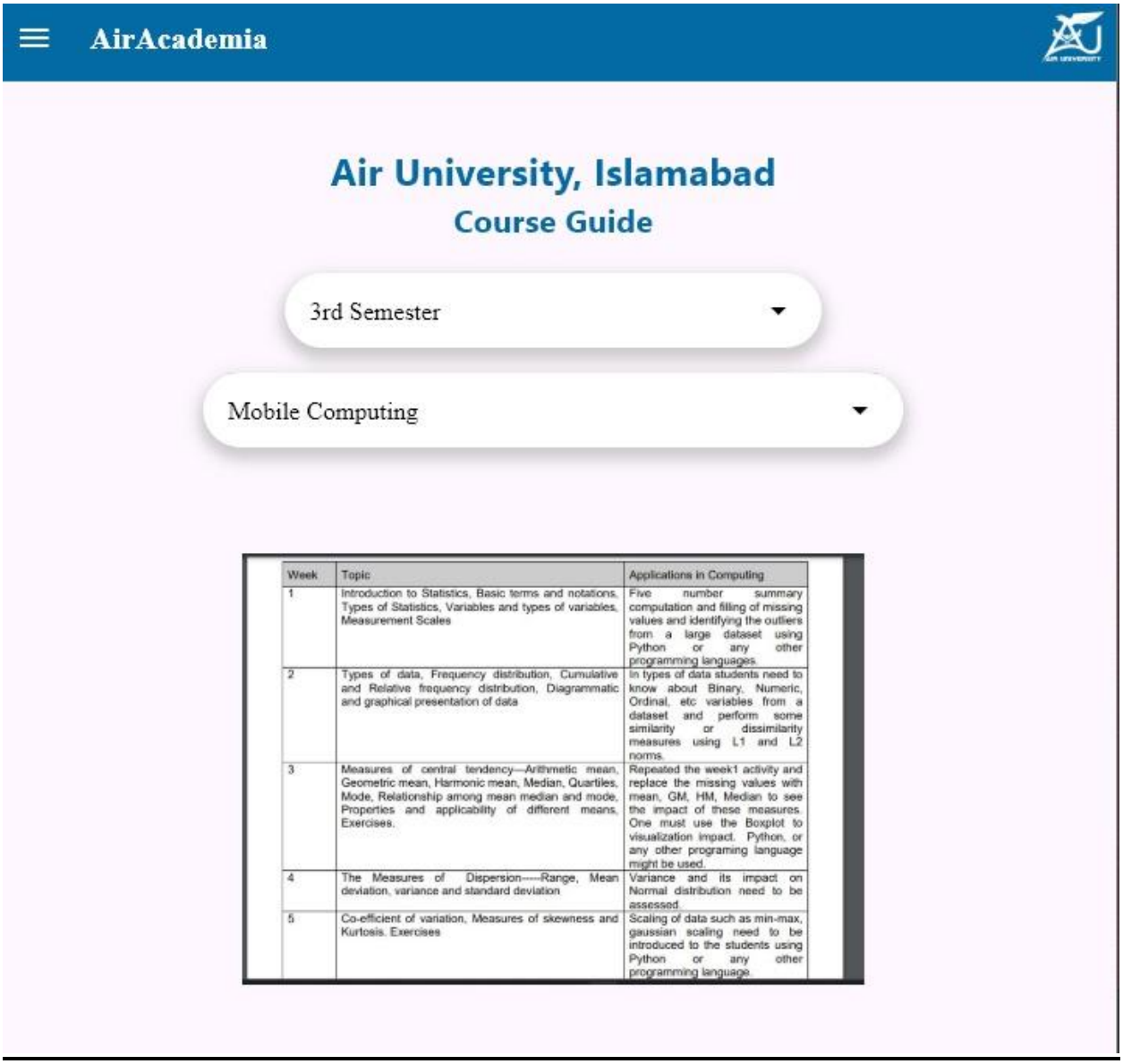

AirAcademia
Notepad
Course Guide
Complaint
Home
Timetable
Course Guide
Course Books
Home Activities
Past Papers
Notepad
Dictionary

Notepad Page



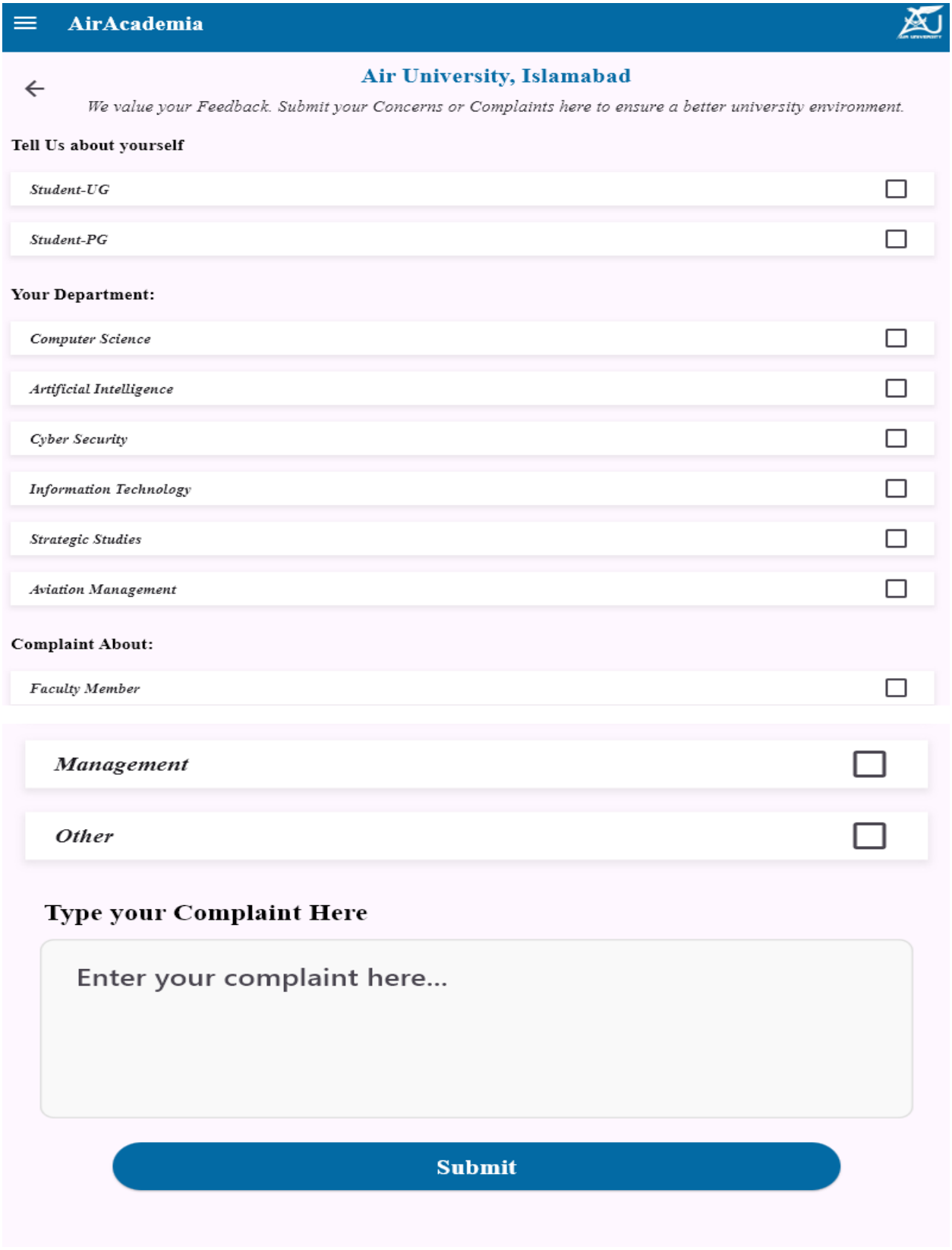

AirAcademia
Search document
Quick Note
Favourites
air university
mobile computing project

Course Guide Page:



Week	Topic	Applications in Computing
1	Introduction to Statistics, Basic terms and notations. Types of Statistics, Variables and types of variables, Measurement Scales	Five number summary computation and filling of missing values and identifying the outliers from a large dataset using Python or any other programming languages.
2	Types of data, Frequency distribution, Cumulative and Relative frequency distribution, Diagrammatic and graphical presentation of data	In types of data students need to know about Binary, Numeric, Ordinal, etc variables from a dataset and perform some similarity or dissimilarity measures using L1 and L2 norms.
3	Measures of central tendency—Arithmetic mean, Geometric mean, Harmonic mean, Median, Quartiles, Mode, Relationship among mean median and mode, Properties and applicability of different means, Exercises.	Repeated the week1 activity and replace the missing values with mean, GM, HM, Median to see the impact of these measures. One must use the Boxplot to visualization impact. Python, or any other programing language might be used.
4	The Measures of Dispersion-----Range, Mean deviation, variance and standard deviation	Variance and its impact on Normal distribution need to be assessed.
5	Co-efficient of variation, Measures of skewness and Kurtosis. Exercises	Scaling of data such as min-max, gaussian scaling need to be introduced to the students using Python or any other programming language.

Complaint Page:

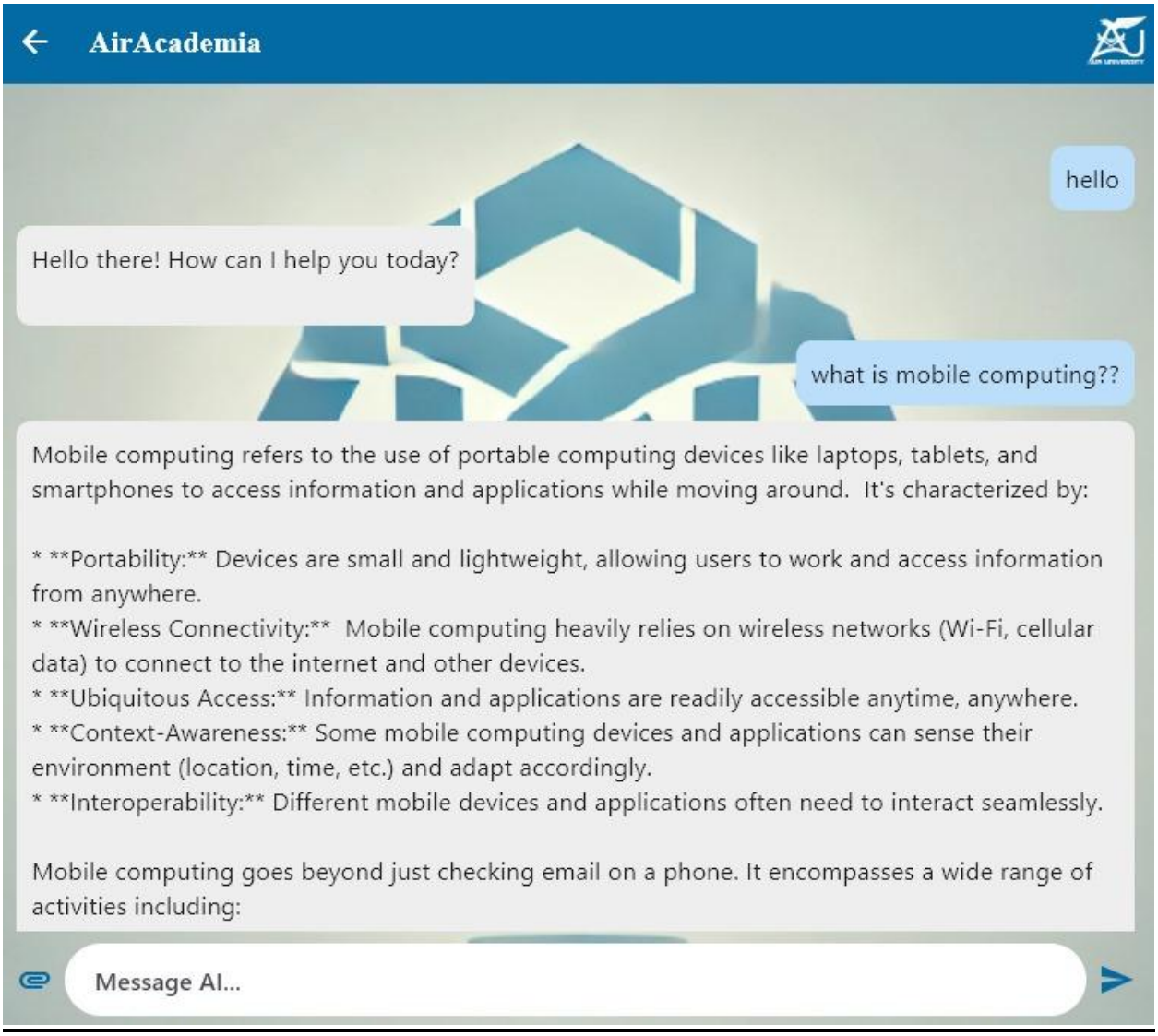


AirAcademia

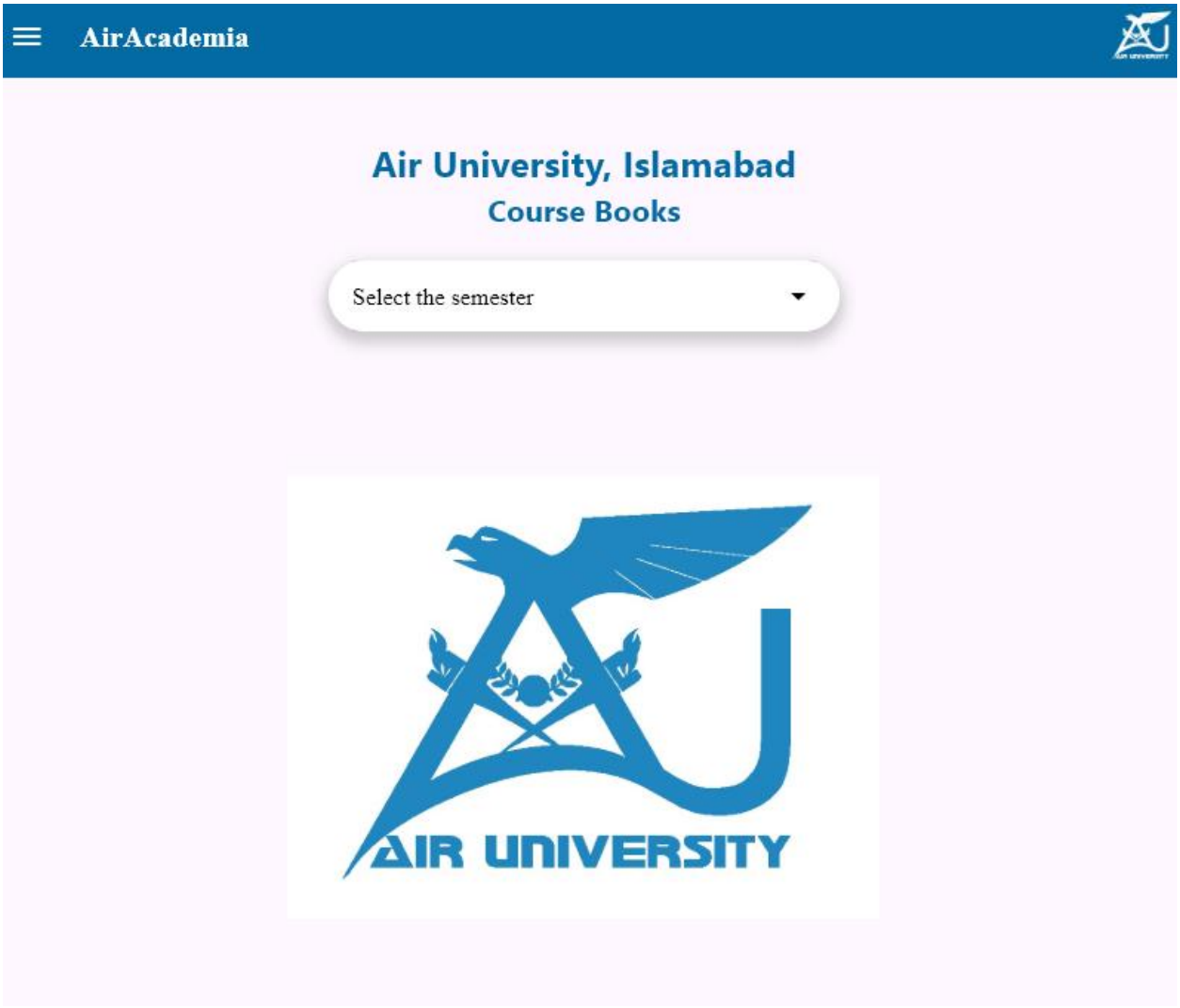
Your complaint has been successfully submitted
We will address it promptly.

Done

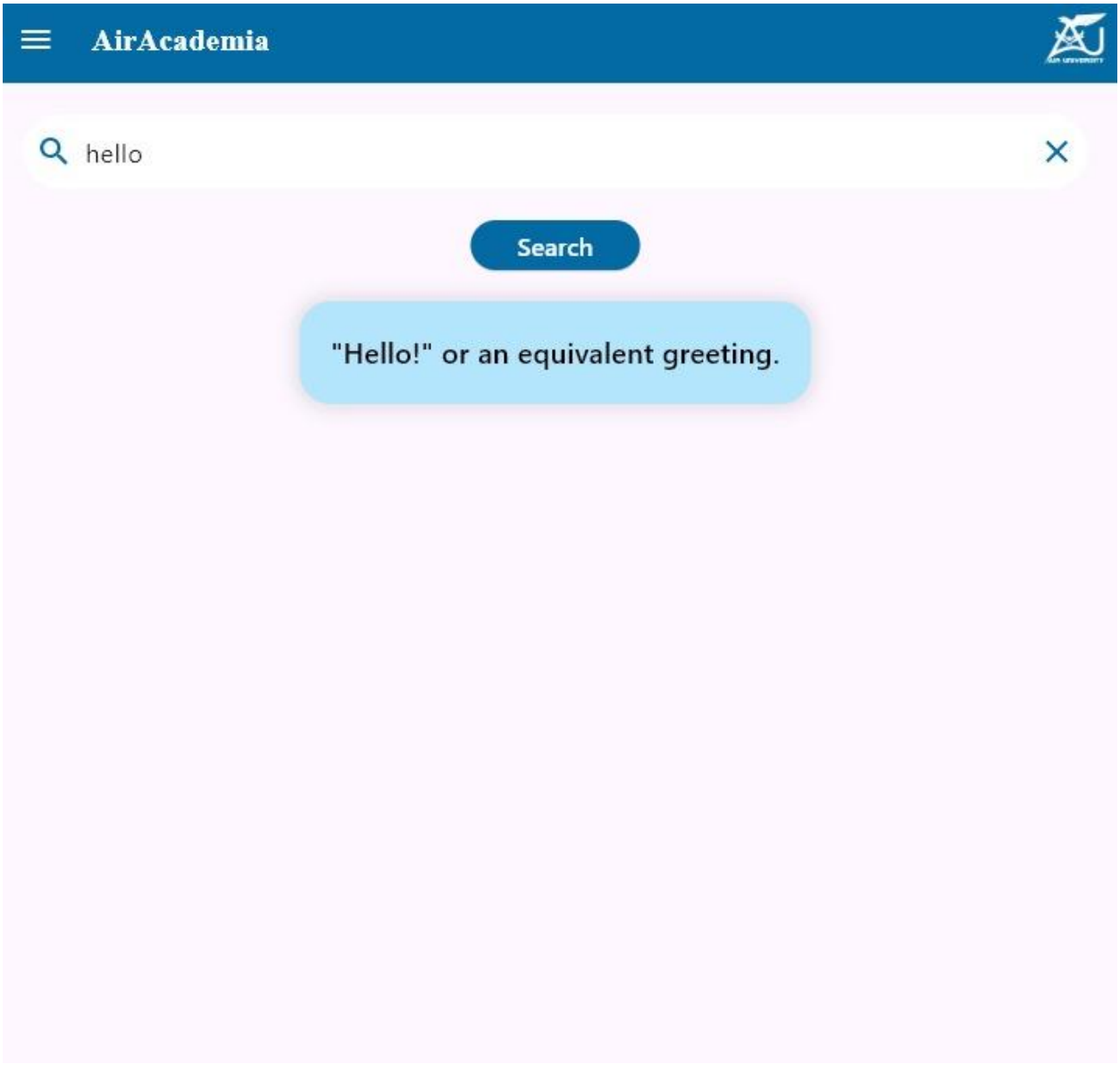
AI Page


AirAcademia
hello
Hello there! How can I help you today?
what is mobile computing??
Mobile computing refers to the use of portable computing devices like laptops, tablets, and smartphones to access information and applications while moving around. It's characterized by:
* **Portability:** Devices are small and lightweight, allowing users to work and access information from anywhere.
* **Wireless Connectivity:** Mobile computing heavily relies on wireless networks (Wi-Fi, cellular data) to connect to the internet and other devices.
* **Ubiquitous Access:** Information and applications are readily accessible anytime, anywhere.
* **Context-Awareness:** Some mobile computing devices and applications can sense their environment (location, time, etc.) and adapt accordingly.
* **Interoperability:** Different mobile devices and applications often need to interact seamlessly.
Mobile computing goes beyond just checking email on a phone. It encompasses a wide range of activities including:
Message AI...

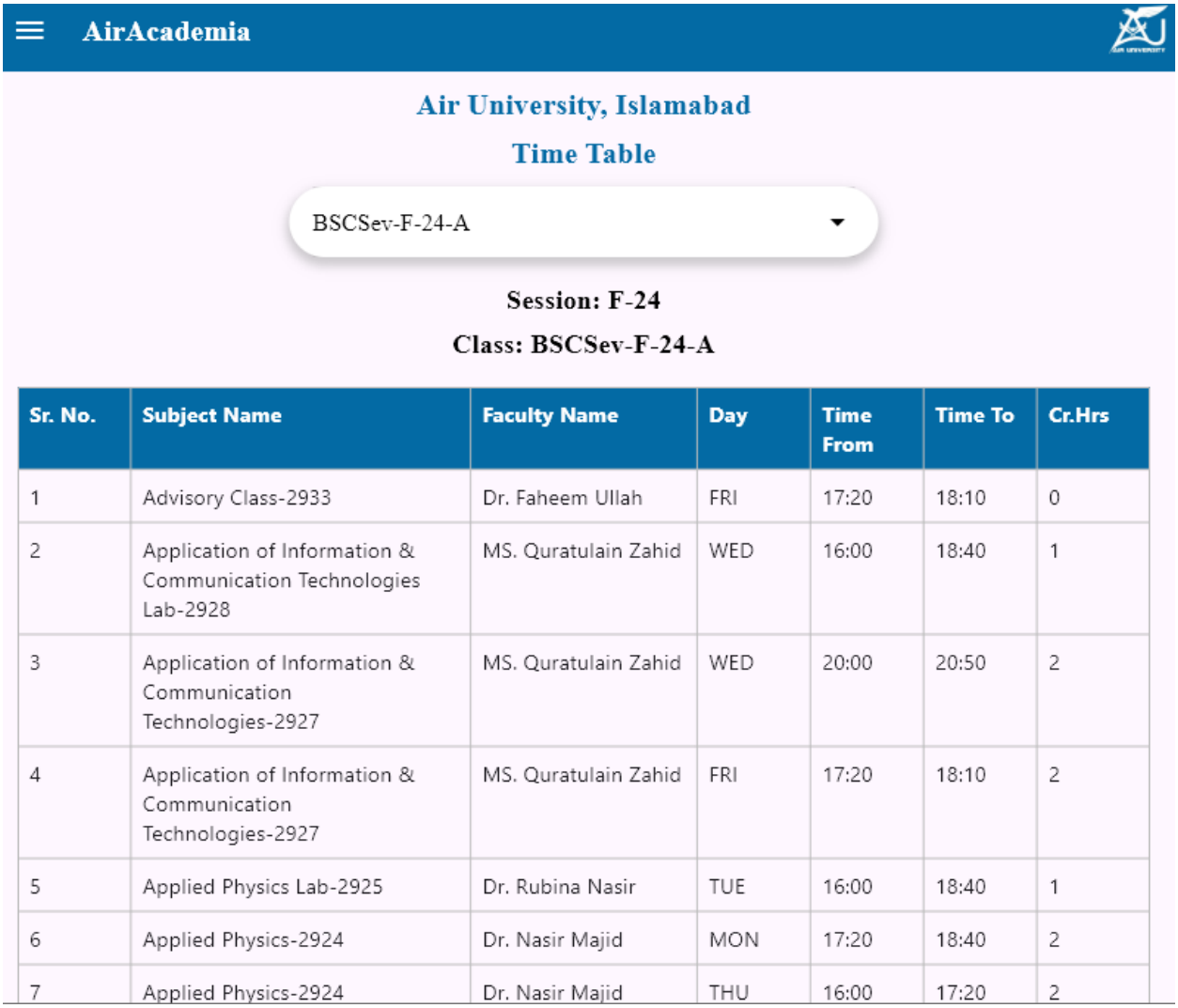
Course Books Page



Dictionary Page



Timetable Page



AirAcademia

Air University, Islamabad

Time Table

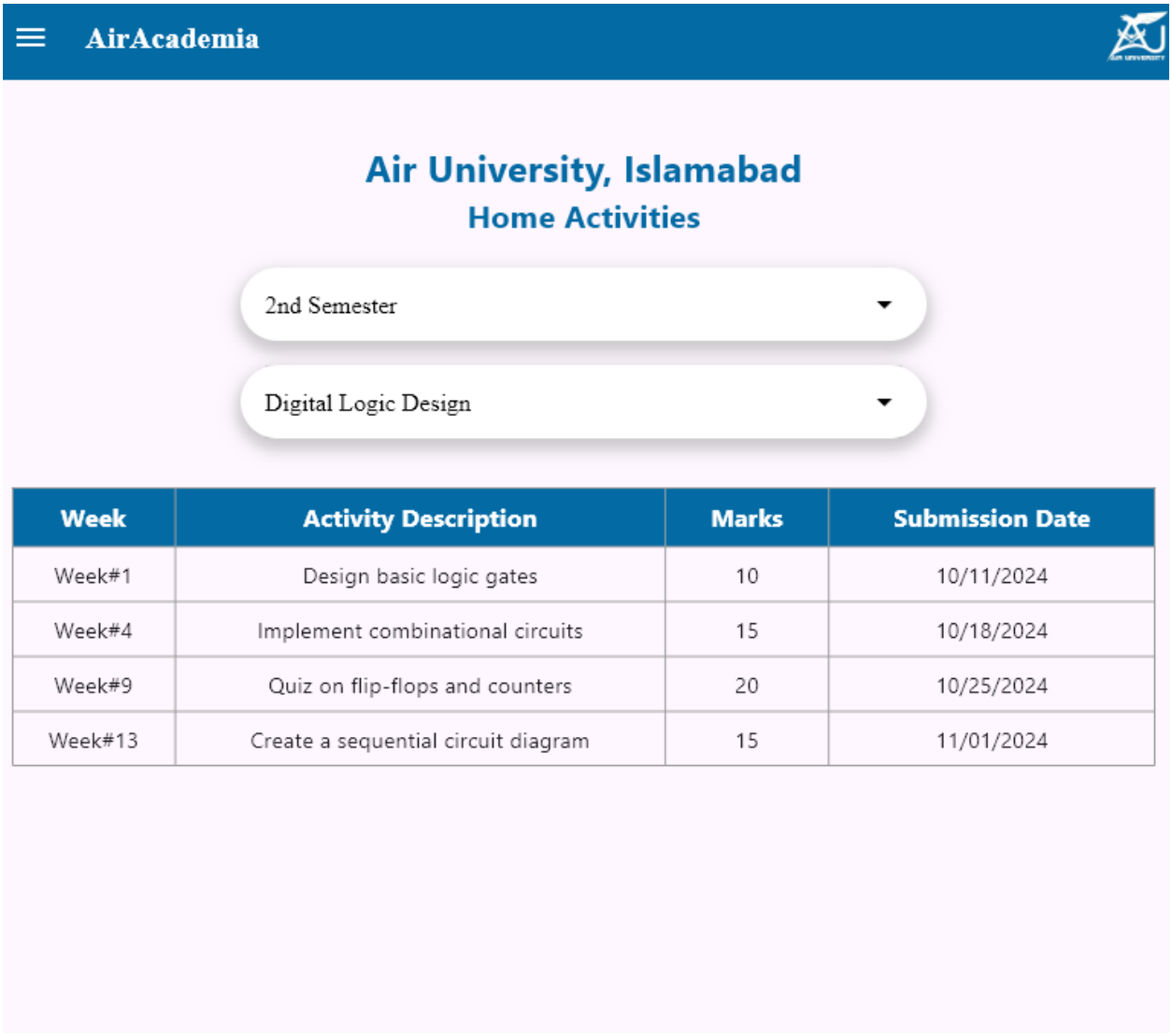
BSCSev-F-24-A

Session: F-24

Class: BSCSev-F-24-A

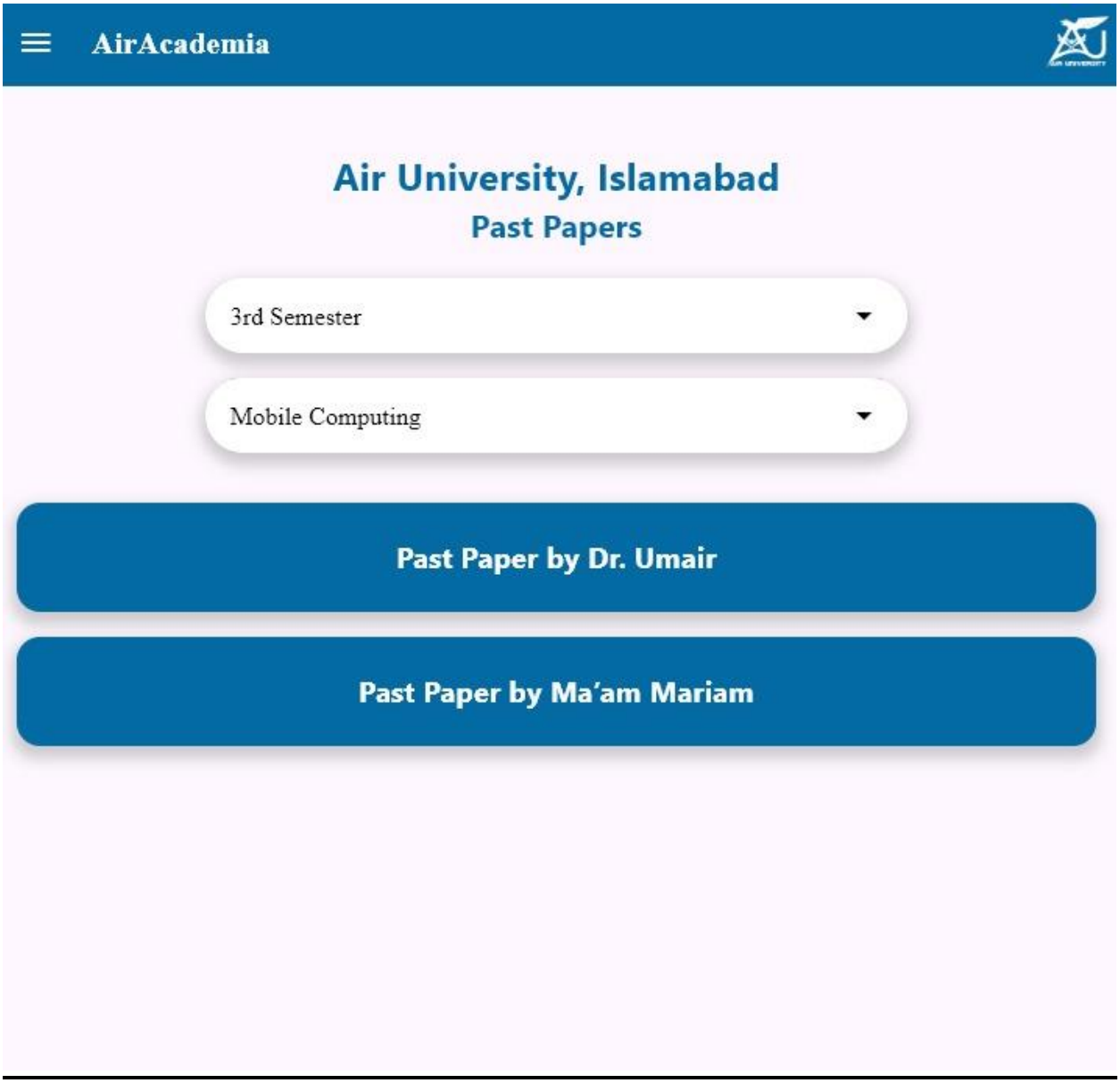
Sr. No.	Subject Name	Faculty Name	Day	Time From	Time To	Cr.Hrs
1	Advisory Class-2933	Dr. Faheem Ullah	FRI	17:20	18:10	0
2	Application of Information & Communication Technologies Lab-2928	MS. Quratulain Zahid	WED	16:00	18:40	1
3	Application of Information & Communication Technologies-2927	MS. Quratulain Zahid	WED	20:00	20:50	2
4	Application of Information & Communication Technologies-2927	MS. Quratulain Zahid	FRI	17:20	18:10	2
5	Applied Physics Lab-2925	Dr. Rubina Nasir	TUE	16:00	18:40	1
6	Applied Physics-2924	Dr. Nasir Majid	MON	17:20	18:40	2
7	Applied Physics-2924	Dr. Nasir Majid	THU	16:00	17:20	2

Home Activities Page



Week	Activity Description	Marks	Submission Date
Week#1	Design basic logic gates	10	10/11/2024
Week#4	Implement combinational circuits	15	10/18/2024
Week#9	Quiz on flip-flops and counters	20	10/25/2024
Week#13	Create a sequential circuit diagram	15	11/01/2024

Past Papers Page



Total Marks: - 100
Class: - BS (CS)
Semester: 3rd
FM Name: - Ms. Arcebah Mubarak, Ms. Kainat Nazir, Mr. Danial
Date: -

Subject: - Mobile Computing

Course Code: - CS 281
Time Allowed: - 2 Hours
Section: - A,B,C
FM Signature: -
Time: -

Instructions:

1. Be precise in your answers. Writing unnecessary details will cost you marks.
2. Understanding the question is part of exam, if anything is unclear, make an assumption, clearly mark it and proceed the question according to that assumption.

Question#1	CLO-1	GA-2	C2 (Understand)	Marks: 25

You are building a simple Flutter app where users can enter their contact information (name, phone number, and address) using a StatefulWidget. The form includes basic validation to ensure all fields are filled out. There is a "Submit" button that users click to save the information.
Explain how the initState(), build(), and dispose() methods of a StatefulWidget help manage the form's state and validation in this app. Additionally, why does Hot Reload work faster during development when using Just-In-Time (JIT) compilation, and how would this differ if Ahead-of-Time (AOT) compilation were used?

Question# 2	CLO-2	GA-3	C3(Apply)	Marks: 25X3=75

1- You are developing a mobile application in Dart where you have two classes: User and Admin. Both classes need to implement common functionality for logging activities, such as logging the time of actions taken by the user or admin. Instead of duplicating the logging code in both classes, you decide to use a mixin. Write the Dart code to apply the mixin to both the User and Admin classes? (30)

Specifications:

- Implement the logActivity() method in the mixin so that it logs a message including the date, time, and a brief action description.
- Demonstrate how each class (User and Admin) can customize the logging behavior to suit their specific needs.
- Finally, explain how using a Mixin improves code reusability and allows for the flexibility of extending or modifying the logging behavior in different classes without code duplication.

Announcements Page