Smart Course Scheduling System for University Students

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Problem Statement

University students often face difficulties when planning their course schedules each term. This can lead to unbalanced schedules, which negatively affect their grades, time management, and overall well-being. Most students lack a clear plan that fits their skills, abilities, and learning preferences. On the other hand, universities also struggle to predict how many students will register for each course, leading to offering either too many or too few sections. There is currently no effective system that helps both students and universities create optimal and balanced plans.

Persona

Name Mohammed

Age 20 Year Old

Major Computer Science

Academic Year Second Year

Goals

- To have a balanced schedule each term that avoids pressure, heavy workload, and fits his skills and abilities
- To maintain a high GPA
- To graduate within 5 years

Challenges

- Understanding the difficulty level of each course based on his own abilities
- Limited information about which courses will be offered in future semesters

Behaviors

- He asks other students who have taken the course before about its difficulty
- He consults his academic advisor to understand the full study plan

Needs

- A smart system that helps him assess how difficult each course is for him
- A tool that can build a full academic plan until graduation based on his preferences and skills

User Journey

Step	Action	Feeling
1	Creates an initial plan for next semester	Confused and worried because he's unsure if the plan fits him
2	Asks advice from advisor and older students	Curious and hopeful for useful information
3	Registers the courses	Nervous because the plan might not work out
4	Starts attending classes and feels overwhelmed	Stressed and mentally exhausted
5	Receives low grades	Disappointed and sad

Pain Points

- **Not enough knowledge about all available courses**

- **Struggles to get advice that matches his personal skills and academic level**

- **No guarantee he can register for the planned courses**

- **No backup plan if registration fails**

- **No clear plan for future semesters**

- **Hard to build a balanced schedule that suits his abilities**

Opportunities

- **Create a recommended plan based on student profile**

- **Provide smart advice that considers the student's skills and goals**

- **Help students build a strong registration strategy with alternatives**

- **Offer a clear view of available courses in future terms**

- **Improve GPA and reduce pressure through a personalized, balanced schedule**

Proposed Solution (1/3)

A smart system that uses artificial intelligence to suggest a personalized and balanced course schedule for students. The system analyzes different types of data to understand the difficulty of each course and the student's own abilities, goals, and preferences.

Main Features:

- Recommends the best set of courses based on student performance, course history, and difficulty level

- Helps students plan ahead for all terms until graduation

- Suggests backup options in case some courses are not available

- Gives students confidence by offering advice that fits their skills and learning style

Proposed Solution (2/3)

Data Sources:

1- Course Information (from departments):

- **Course difficulty (easy, medium, hard)**

- **Number of quizzes, exams, assignments**

- **Whether the course includes a lab or project**

- **Required pre-requisite courses**

- **Needed skills (e.g., problem-solving, memorization)**

- **Which terms the course is offered**

2- University Database:

- **Student GPA**

- **Grades in past courses**

- **Previous schedules**

- **Grades of all students who took the course in the past**

Proposed Solution (3/3)

Data Sources:

3- Student Inputs (via a form):

- **Courses the student wants to take**

- **Preferred number of credits**

- **Plan for one term or full graduation plan**

- **Number of projects or labs preferred**

- **Self-assessment of skills**

4- Surveys from Previous Students:

- **Their grades in the course**

- **Comments and impressions**

- **Their skills and study habits**

Business Model Canvas

Key Partnership

- University and academic departments

Key Activities

- Collect and analyze student and course data
- Design user-friendly interfaces
- Develop and improve AI algorithms

Key Resource

- AI development team
- Access to university course and student databases
- Cloud infrastructure (e.g., AWS)

Value Proposition

A smart AI system that helps students create personalized and balanced schedules based on their abilities, goals, and course difficulty

Customer Relationship

- Self-service with easy-to-use interface
- Optional technical support for questions and help

Channels

- University website
- Student portals

Customer Segments

- University students
- Academic departments
- Student affairs offices

Cost Structure

- AI system development
- Maintenance and support services
- Data security and hosting costs

Revenue Streams

- Student subscriptions
- Possible university funding