1. CourseSync (Integrated classroom management and scheduling system)

Develop a desktop application that **facilitates** conflict-free course scheduling for both students and instructors. The application should have the following features,

1. The system should **register** users of the system (Instructors, undergraduate students (both regular and evening) and Coordinator) and provide them respective responsibilities

   a. Each period has a duration of 50 minutes.

   b. Regular programs are conducted from Monday to Friday starting from 08:00 – 17:00, excluding lunch time (12:00 - 13:00)

   c. Evening classes are conducted from Monday to Friday, starting from 18:00 to 20:00 and on Saturday (13:00 to 17:00) and Sunday starting from 08:00 to 12:00.

2. The application should allow allocation of time slots based on course credit hours, identification of available classrooms, and assign classrooms to instructors and students. Make sure that there is no conflicting schedule.

3. The application should facilitate makeup classes based on the availability of classroom, instructor and students

4. The application should make sure that necessary resources such as projector and connectors are available.

5. The application should allow additional features and ensure extensibility without disrupting the existing code.

6. Instructors should be able to view the draft schedule a week before it's shared with students and request for a revised version

7. Generate revised and final schedule

8. The system should be able to authorize users with username and password

2. Job Application tracking system

Develop a desktop application that enables job seekers and hiring companies to communicate in tracking the job application process from the initial submission of the application until the decision of the management of the company on the application. The application should have the following features,

1. Register detailed information about the applicant such as full name, age, contact information, level of qualification, area of specialization, academic credentials (diplomas, transcripts, exam scores), photo, and recommendation letter
2. The system should allow the hiring manager of a given company to post open positions.
3. The system should allow the hiring manager to specify a list of priority criteria to be used for screening applicants *automatically*
4. The system should enable the applicant to search for available job postings.
5. The system should have a window dedicated for jobs that are related to the **area of specialization** of the applicant
6. The system should have a catalog of recently posted jobs
7. The system should allow the applicant to fill out and submit an application form and optionally cover letters,
8. The system should identify qualifying applicants based on the predefined criteria.
   - These applicants can then be *notified* and scheduled for interviews
9. The system should allow the manager to update the status of application, from initial submission all through the review process and final decision.
10. The system should be able to authorize users with username and password

3. Higher education application and admission tracking system

Develop a desktop application that enables potential university students to apply for admission for a specific field of study and track the status of their application. The students can be new entrants applying for the first time or university students who apply for transfer to another university. The application should have the following features,

1. The system should allow students to submit their application with all the necessary information such as name, email, field of study, transcript, photo, university entrance exam etc…
2. The system should allow different universities to list their programs and departments within the desktop application, including details such as prerequisites, and available slots

3. The system should have a window dedicated for universities and their programs and allow students to search for specific fields of study they're interested in applying

4. The system should allow the applicant to fill out and submit an application form
    a. The system should also allow students to submit transfer applications

5. Universities must be able to view and manage incoming applications and communicate with applicants about their application statuses

6. the system should *automatically* approve applications if the necessary requirements for enrollment and transfer into the desired department are met,
    a. Or the system should flag applications for manual review if they require special consideration

7. For transfer students the system should be able to transfer Credit and permit exemption

8. The system should enable the applicant to view the submission of the application and its status (received, under review, accepted, rejected)

9. The system should be able to authorize users with username and password

4. Grocery shopping and door to door delivery system

Design a desktop application that facilitates purchase and delivery of grocery items. The key players are the customer who orders grocery items, the agent who picks up the items from various supermarkets and delivers them, and the supermarket, which supplies the consumer items. The application should have the following features,

1. The system should be able to register relevant customer information including name, phone number, home address, pickup locations etc…

2. The system should allow customers to create a digital wallet within the system upon registration.
    a. *This is can simply mean manually entering their initial account balance*

3. The system should allow customers to browse items and place orders from **different** supermarkets as needed

4. The system should enable the customer to transfer payment for the service from the digital wallet

a. There should be a logic to calculate the delivery service according to the varieties of the supermarkets visited and amount of items purchased

5. The system should allow customers track their order

6. The system should enable the agent to view ordered items and communicate with the concerned supermarkets

7. The system should enable supermarkets owners to manage their product catalog, update product availability, view incoming orders, and communicate with the agent

8. The system should enable the agent to upload the invoice from different supermarkets

a. It should enable the customer to view the invoices

9. The system should enable the customer to confirm the delivery of items

10. The system should be able to authorize users with username and password

5. CodeAssess (coding exercise checker)

Develop a desktop application that facilitates course administration and automatic evaluation of programming assignments. The application should allow teachers to create courses, manage assignments, and oversee assignment submissions. Students, on the other hand, should be able to submit their code solutions, and track their evaluation results. The application should have the following features,

1. The system should register students and teachers

2. The system should allow the teacher to add(create) a new course

a. The teacher should be provided with features to add students to the courses he/she is giving

3. The system should allow the teacher with features to create, manage and review **assignments** for different courses

a. When creating assignments, teachers can specify problem statements, add any additional instructions and define a set of test cases against which the submitted code will be evaluated. (*Test cases are inputs and expected outputs that the code should produce when executed correctly*),

b. Teachers should also be able to set the deadline for submission.

4. The system should provide teachers with functionalities to add, edit, and delete test cases as needed.

5. The system should flag student submissions for manual review by the teacher if it requires a special consideration

6. The system should allow students to submit their code solutions

7. The system should have plagiarism detection to compare students' code solutions with each other

8. The system should be able to authorize users with username and password

6. EduRide Express requirements (Student carpool service)

Develop a desktop application, which connects parents/guardians and trusted drivers to coordinate reliable ridesharing arrangements for elementary and high school students. The system should facilitate communication between parents and drivers. The application should have the following features,

1. The system should allow users to create a digital wallet within the system upon registration.
   a. *This is can simply mean manually entering their initial account balance*

2. The system should enable parents/guardians to create and manage their profiles,
   a. For parents with multiple children, it should allow them to add information about each of their children, such as their name, age, school, and specific pickup and drop-off locations

3. The system should enable drivers to create and manage their profiles
   a. It should be mandatory for drivers to upload their drivers' license

4. The system should allow parents/guardians to search for available rides based on their preferred pickup and drop-off locations and timing
   a. The system should also recommend available rides by matching drivers with similar routes and timings

5. The system should provide parents with a range of contract duration options to choose from, such as monthly, weekly, 3-monthly, yearly

6. The system should enable the parent to transfer payment for the ride from a digital wallet

    a. There should be a logic to calculate the payment according to the number of seats booked and the duration of the contract

7. The system should provide drivers and guardians a window to display contract details, status, and expiration dates, as well as provide options for editing, renewing, or terminating contracts as needed

8. The system should provide parents/guardians with the ability to receive notifications about their child's rides

9. The system should be able to authorize users with username and password

7. Industrial project management system

Develop a desktop application that manages industrial project submission, review, approval, and progress tracking. The application should have the following features,

1. The system should register graduating class students and instructors with necessary information

    a. Instructors should include their area of expertise and topic preference

2. The system should allow the formation of project teams and submission of project titles **as a group** to the project coordinator

    a. The system should log each submission with relevant details (e.g., title, team members, project synopsis, submission date)

3. The system should allow students to search and view previously implemented industrial projects and project descriptions

4. The system should allow the formation of a reviewing committee comprised of 3 instructors which evaluates if submitted titles are feasible and/or relevant

5. The system should enable the project coordinator to send submitted titles to the committee

    a. The system should enable the committee to communicate the status of the submitted titles (*under review, rejected,* or *accepted*) to the coordinator

        • If rejected, the system should allow the committee to write recommendations for revising the titles and suggest changes that would make them more unique or feasible

6. The system should enable the coordinator to communicate the status of the submitted titles to students, indicating whether they are under review, rejected, or accepted
   a. If a submitted title is a repetition of a previously implemented project, it is *automatically* rejected
7. The coordinator matches advisors to student groups, based on the nature of the projects and the expertise/topic preference of the instructors
8. Students are required to submit progress reports to the school every two weeks.
   a. These reports should always be agreed upon and approved by the assigned advisor
9. The system should be able to authorize users with username and password

8. Customer to customer sales management system

Develop a desktop application, which connects customers directly with each other, and facilitates their business transactions. The application should have the following features,

1. The system should allow users to create a digital wallet within the system upon registration.
   a. *This is can simply mean manually entering their initial account balance*
2. The system should enable users to list items they want to sell, including images, descriptions, and pricing.
3. The system should allow users to find items based on keywords and categories
4. The system should provide a window to display detailed information about each item, including photos, descriptions, and seller information.
5. The system should have a bidding system for auction-style listings, allowing users to place bids on items.
6. The system should offer a fixed-price option for users who want to purchase items immediately without bidding.
7. The system should allow users to track their orders, view order history, and manage transactions.
8. The system should enable communication between buyers and sellers through a messaging system for inquiries, negotiations.
9. The system should provide sellers with tools to manage their listings and monitor sales.
10. The system should be able to authorize users with username and password