



Rollins Class Scheduler

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Concept & Goals

Concept:

Create a Java application that simulates the Rollins College course registration experience.

Goals:

- Provide a functional class scheduling system for Students and Admins
- Allow students to:
 - View available classes
 - Add/remove classes
 - Prevent conflicts (time, day, credit limit, duplicates)
- Allow admins to:
 - Add/edit/remove course offerings
 - Prevent instructor schedule conflicts
- Use GUI (Swing) and OOP principles throughout
- Store data using ArrayLists and custom objects

Demo

Student Features

- Login as Student
- View all available courses (sortable table)
- Add a course (with validation)
- Remove a course
- View personal schedule popup

Admin Features

- Login as Admin
- Add new course (dialog with validation)
- Remove selected course
- Automatic instructor conflict detection

How OOP Principles Were Implemented

Encapsulation

- Private class fields (Course.enrolledStudents)
- Schedule uses private ArrayList<Course>
- Access controlled through getters/setters

Inheritance

- Student and Admin extend Person
- Shared attributes: name, id

Polymorphism

- Both implement CourseInterface:
 - addCourse() behaves differently for Student vs Admin
- Controller treats them generically through shared interface

Abstraction

- SchedulerSystem hides all data operations
- Controller only calls methods like addCourse(), findStudent(), etc.

Lessons Learned, Challenges, and What's Next

Lessons Learned

- How complex rule enforcement works in real schedulers
- Benefit of separating GUI from logic
- Writing cleaner OOP code with reusable classes

Challenges

- Time conflict detection logic
- Instructor schedule enforcement
- Keeping GUI responsive and synced with data
- Large example dataset generation (100 courses)

What's Next

- Add semester filtering, searching, or filtering tools
- More detailed user accounts (passwords, profiles)
- Expand GUI styling for professional look



Questions?