

# Online Course Registration System

SW301 - Course Project – Phase 4 - Implementation

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Focuses on translating the system design into a working Java prototype.

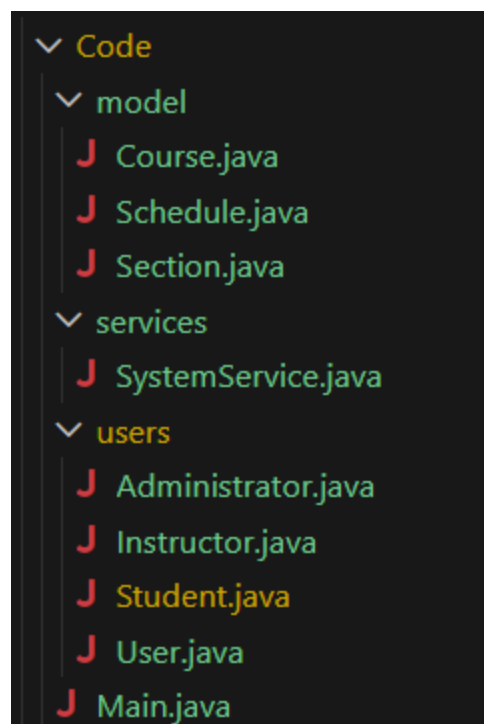
The goal is to demonstrate the core functionality of the Online Course Registration System using a console-based interface while following object-oriented design.

## Development Environment

- Programming Language: Java
- IDE: IntelliJ – visual studio code
- Paradigm: Object-Oriented Analysis and design
- Version Control: GitHub Repository
- Execution Mode: Console-based

## System Architecture

The system implements the core design classes. The classes are grouped into logical packages:



# Implemented Core Classes

## Users

- User (Abstract)
- Student
- Instructor
- Administrator

## Purpose:

- Maintain inheritance
- Avoid duplication
- Support role-based logic

## Academic Classes

- Course
- Section
- Semester (concept represented indirectly)
- Schedule

## Registration Logic

Registration is implemented functionally through:

- Section → enrollStudent()
- Schedule → addSection()

# Implemented Features

## Student Features

Students can:

- Login
- View available courses and sections
- Register for courses
- Ensure:
  - Capacity validation
  - No duplication
- View their schedule

## Instructor Features

Instructors can:

- View their assigned course sections
- View enrolled students per section
- Monitor enrollment status

## Administrator Features

Administrators can:

- Add new courses
- Add new sections
- Add Users (Student, instructor, administrator)
- Assign instructor
- Manage academic structure

This supports:

- Academic planning
- Institutional control

# Console-Based Interaction

## Main Menu

```
===== MAIN MENU =====
1. Student
2. Instructor
3. Administrator
4. Exit
Choose: █
```

## Student Menu

```
--- STUDENT MENU (Ahmad) ---
1. View Available Courses
2. Register Course
3. View My Schedule
4. Back
Choose: █
```

## Instructor Menu

```
--- INSTRUCTOR MENU (Dr. Ahmed) ---  
1. View My Sections  
2. View Students in Section  
3. Back  
Choose: █
```

## Administrator Menu

```
--- ADMIN MENU (System Admin) ---  
1. Add Course  
2. Add Section  
3. Add Student  
4. Add Instructor  
5. Add Administrator  
6. View All Users  
7. Remove User  
8. Back  
Choose: █
```

## Sample Console Output

```
--- STUDENT MENU (Ahmad) ---  
1. View Available Courses  
2. Register Course  
3. View My Schedule  
4. Back  
Choose: 2  
  
--- Available Sections ---  
S1 | CS101 - Introduction to Computer Science (3 credits) | Instructor: Dr. Ahmed | Seats: 0/30  
S2 | CS102 - Object-Oriented Programming (3 credits) | Instructor: Dr. Sara | Seats: 0/20  
S3 | SW301 - Object-Oriented Analysis and Design (3 credits) | Instructor: Dr. Sameh | Seats: 0/20  
Enter Section ID: S3  
Registered Successfully!
```

```
--- STUDENT MENU (Ahmad) ---  
1. View Available Courses  
2. Register Course  
3. View My Schedule  
4. Back  
Choose: █
```

```
--- STUDENT MENU (Ahmad) ---  
1. View Available Courses  
2. Register Course  
3. View My Schedule  
4. Back  
Choose: 3  
Schedule for Ahmad  
S3 | SW301 - Object-Oriented Analysis and Design (3 credits) | Instructor: Dr. Sameh | Seats: 1/20
```

# GitHub Repository

<https://github.com/shadow9-1-1/Online-Course-Registration.git>

 **Development Team**

Full-Stack Developer	Full-Stack Developer	Full-Stack Developer
		
Seif Amr	Ahmed Sameh	Ahmed Wael
Full-Stack Development	Full-Stack Development	Full-Stack Development