CSE 201 - Advanced Programming (Monsoon 2017)
Course Project Option-1
Classroom Booking System

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IMPORTANT Instructions:
1. **It's mandatory that you attend all the deadlines in this project as per the schedule. No request for rescheduling the demo will be entertained. In case of any unavoidable circumstances you have to take email approval from me well in advance.**
2. **Each group should choose their project latest by 23:59pm on 03/10. Absolutely no changes are allowed after this deadline. Either of the two members in any group should ensure they choose the project in case other group member is unavailable until this deadline.**
3. **Before you start working on this project, you MUST go through the slides on "Pair Programming" that was presented in Tutorial-8b.**
4. **You MUST have a PRIVATE git repository for your project and every group member should very frequently check in their code in this repository.**
5. **No extensions will ever be provided. Any submission after the deadline will not be evaluated. If you see any ambiguity or inconsistency in a question, please seek a clarification from the teaching staff.**

Plagiarism: All submitted deliverables are expected to be the result of your individual effort. You should never misrepresent someone else's work as your own. In case any plagiarism case is detected, it will be dealt as per new plagiarism policy of IIITD that was also discussed in the lecture.

The purpose of this project is to create a desktop based JavaFX application to manage classroom bookings at IIITD. The application will read data from the csv file which holds information about the time table of the semester. Time table will have information about the time slot for the course, room allotted for that course, total capacity of that room, and intended audience of the course. Your application will block all the predefined required classrooms as per the timetable.

Apart from booking the rooms, students should also be able to use this application to help them choose courses based on the post-conditions hints specified by students. This feature should only be available in a student login. Each courses in the database that are being offered for a

semester also contains the list of its post-conditions. The application provides a search bar in which student can put keywords as a hint for post-conditions. Out of all the remaining courses that the student hasn't registered, the system will filter out a list of courses whose post-conditions contains one or more of the keywords specified by the student. As an example, if the student specifies the keyword "programming" in the search bar, then the system will shortlist Foundations of Parallel Programming and GPU Computing as two of the courses, provided its being offered in that semester. Apart from this, the system must also ensure that the lecture timings of these shortlisted courses should not conflict with the timings of student's regular courses. It's quite possible that two or more shortlisted courses are scheduled same time. In that case student will select one of the course based on his interest. Once the student chooses this course, it will then be added to their personalized time table. This feature will be helpful for students who wants to attend (or audit) some course related to their interest area but are not aware of such courses (there are more than 400 courses in IIITD!).

Users in the system:
- Admin
- Faculty
- Student

Basic Requirements:
- All users are required to sign up for the application.
- During the signup process, application must store the following information about the user.
  - Email ID
  - Type of User
- Every user can login and logout of the system.
- Login authentication should be done by using IIITD email id.
- What an Admin can do:
  - View the room booked / room availability.
  - Cancel a room booking if required.
  - Book a room if available.
  - Accept or reject the request from the students for room booking.
- Faculty
  - View the room booked / room availability.
  - Book a room if available.
  - Cancel the room booking if not required.
- Student
  - View the room booked / room availability.
  - Request for room booking.
    - This request will contain information about the purpose of booking, preferred room (optional), and required capacity.
    - Request will go to admin for approval, if approved by admin its should show as booked.

- - ■ If admin doesn't reply then the request will automatically get cancelled after 5 days of the the request.
  - Admin and faculties both can book the room with same priority.
  - Information about prerequisite of the each course will be stored in the database.
  - Personalized time table can be created by student by manually selecting his or her courses in the time table.
  - Generate very detailed documentation for each and every class/method/fields of your project by using the JavaDoc tool. You can get more information on what/how to use JavaDoc in this online tutorial.
  - We will be testing your application using a locally stored database on laptop. Two or more instances of applications will be invoked on this laptop with different login ids that works on this same database.

Bonus:

Although we have specified the basic requirements, if you are able to come up with some more interesting features then you would be "eligible" for bonus marks. Although this eligibility we will decide based on factors such as how many other group has also come up with same additional functionality.

Project Deliverables -

- Deadline 1 (Due on 11th Oct) - Submit UML class diagram and use case diagram for your project
  - Demo for this component the same day
- Deadline 2 (Due on 25th Oct) - Show static GUI of your project.
  - Demo for this component the same day
- Deadline 3 (Due on 12th Nov 23:59pm) - Submit complete project on backpack.
  - Demo in between week 17 and week 18 after your end sem exams are over