

Use Case Diagrams for Testing Center Scheduler
Austin Borger, Robert Kinney, Joshua Ethridge, Luka Jurukovski
Version: 2015-09-10

1. Overview

The Testing Center Scheduler is a system that allows a student to schedule an appointment to take exams. There are three human actors that interact with this system: Students, Instructors, and Administrators. Students can only make or view appointments according to availability and within the scope of their course load. Instructors can schedule exams for students to take, view all exams that they've scheduled thus far, cancel exams and view appointments made by their students, as well as availability for students to take their exams. Administrators can perform any function within the system so long as it is logically sound - an admin can modify any student's appointments, and can view and modify attributes of the system as well as attain the necessary statistics about the system's performance.

2. Use Case Diagrams

For simplicity, the generalization between user and its specialized actors (student, instructor, and administrator), is not shown in the following diagrams. If one large diagram were to be constructed, this relationship would be shown – however, due to splitting up the diagrams into three separate pieces (one per actor), this relationship cannot be shown.

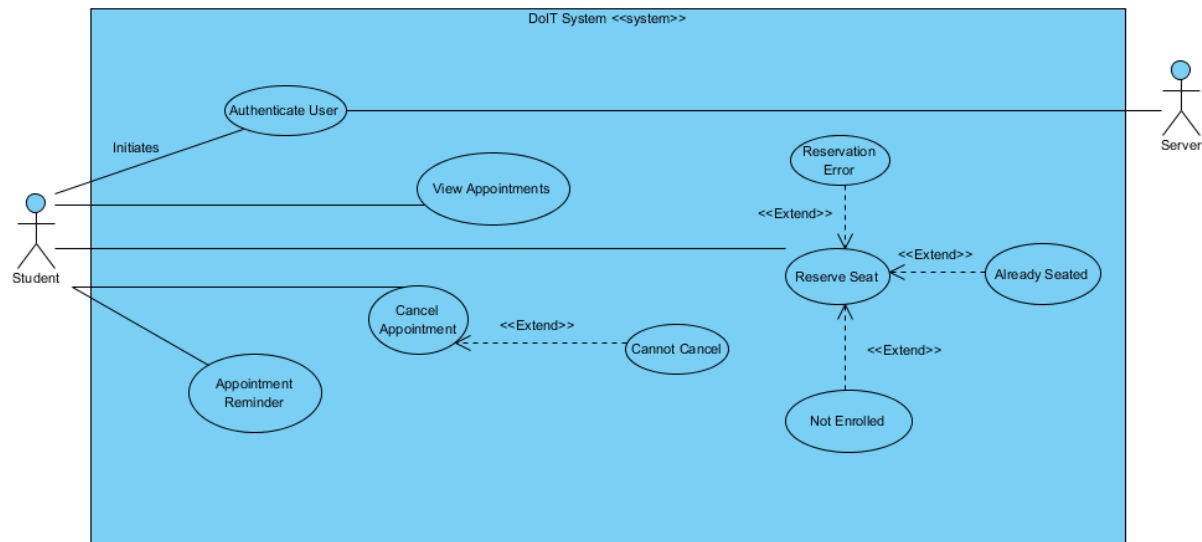
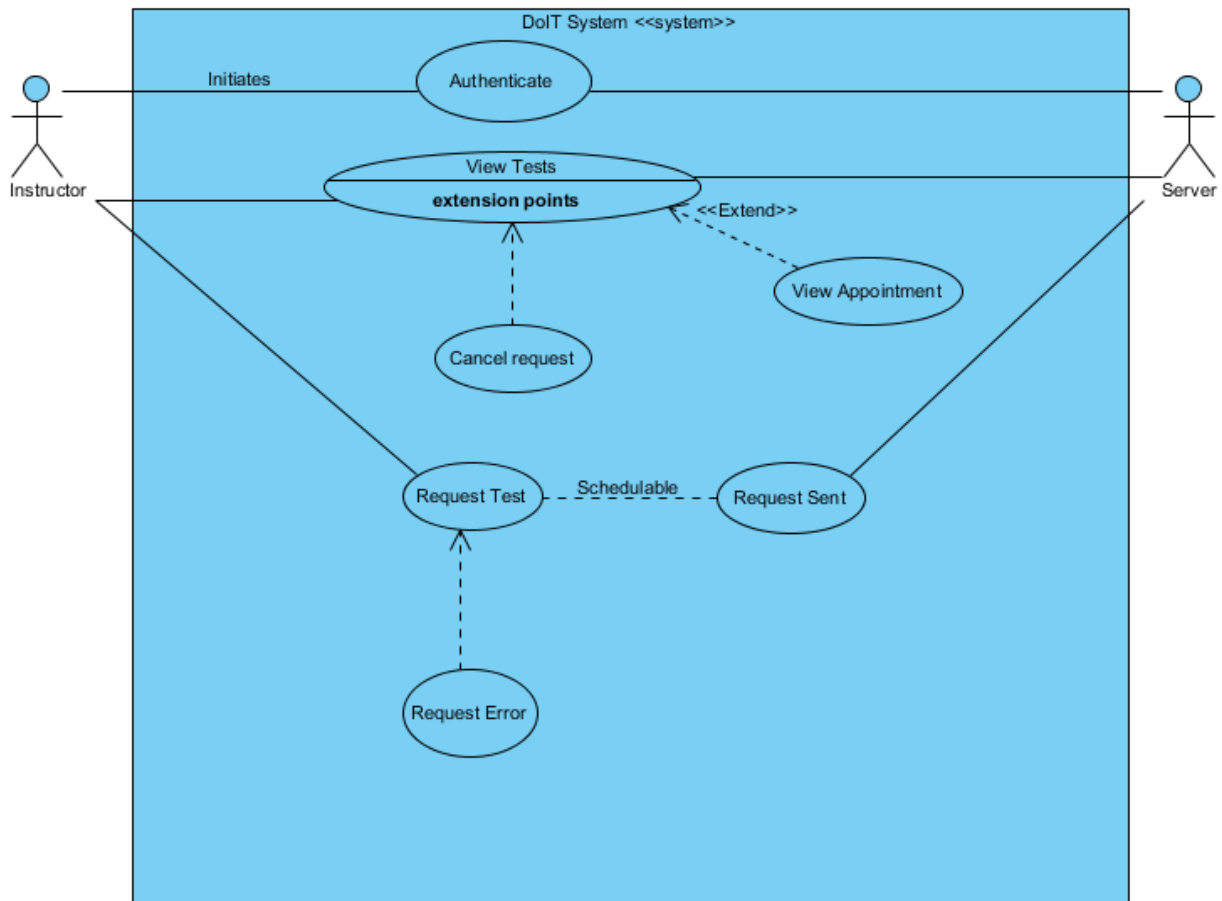


Figure 2.1 – Student



```

    usecaseDiagram
        actor Admin
        actor Server

        usecase UC1[View Appointments]
        usecase UC2[Edit Appointments]
        usecase UC3[Make Appointment]
        usecase UC4[Change Appointment]
        usecase UC5[Delete Appointment]
        usecase UC6[Authenticate User]
        usecase UC7[Approve/Deny Scheduling Request]
        usecase UC8[Check-In Student]
        usecase UC9[Generate Reports]
        usecase UC10[View Utilization]
        usecase UC11[Set Reminder Interval]
        usecase UC12[Edit Set-Aside Seats]
        usecase UC13[Edit Open Seats]
        usecase UC14[Edit Number of Seats]
        usecase UC15[Set Availability]
        usecase UC16[Set Gap Time]
        usecase UC17[Set Hours]
        usecase UC18[Set Dates]
        usecase UC19[Set Reserved Time Periods]
        usecase UC20[Import Data]
        usecase UC21[Mark Appointment(s) as Superfluous]
        usecase UC22[Perform Validity Check]
        usecase UC23[Compare Utilization]
        usecase UC24[Check Scheduling]
        usecase UC25[Record Appointment]
        usecase UC26[Edit Testing Center Information]

        UC20 --> UC21 : extension points
        UC21 --> UC20 : Mark Appointment(s) as Superfluous
        UC21 --> UC22 : <<Include>>
        UC22 --> UC21 : Perform Validity Check
        UC22 --> UC23 : <<Include>>
        UC23 --> UC22 : Compare Utilization
        UC22 --> UC24 : <<Include>>
        UC24 --> UC22 : Check Scheduling
        UC22 --> UC25 : <<Include>>
        UC25 --> UC22 : Record Appointment
        UC25 --> UC26 : <<Include>>
        UC26 --> UC25 : Edit Testing Center Information
        UC26 --> UC16 : Set Gap Time
        UC26 --> UC17 : Set Hours
        UC26 --> UC18 : Set Dates
        UC26 --> UC19 : Set Reserved Time Periods
        UC16 --> UC26 : Edit Testing Center Information
        UC17 --> UC26 : Edit Testing Center Information
        UC18 --> UC26 : Edit Testing Center Information
        UC19 --> UC26 : Edit Testing Center Information
        UC14 --> UC26 : Edit Testing Center Information
        UC15 --> UC26 : Set Availability
        UC15 --> UC14 : Set Availability
        UC12 --> UC14 : Edit Number of Seats
        UC13 --> UC14 : Edit Open Seats
        UC11 --> UC14 : Set Reminder Interval
        UC10 --> UC9 : View Utilization
        UC9 --> UC10 : Generate Reports
        UC8 --> UC7 : Check-In Student
        UC7 --> UC6 : Approve/Deny Scheduling Request
        UC6 --> UC1 : Authenticate User
        UC1 --> UC2 : View Appointments
        UC2 --> UC3 : Edit Appointments
        UC3 --> UC4 : Make Appointment
        UC4 --> UC5 : Change Appointment
        UC5 --> UC2 : Delete Appointment
        UC5 --> UC1 : Initiates
    
```

3. Use Cases

1. Authentication: The user logs into the system using his/her Solar ID and password. This tuple is checked against DoIT database.

1. Reserve Seat: The student makes an appointment for one of his/her exams.
 - a. Not Enrolled Error: The student is not enrolled in the course for the exam is being given or is not on the list of students to take an ad hoc exam.
 - b. Already Seated: The student already has a seat for the exam.
 - c. Reservation Error: There are no non-set-aside seats for the exam's time period that do not conflict with the student's other exams.

2. Cancel Appointment: The student can delete an appointment for an exam.
 - a. Cannot Cancel: A student can only cancel an appointment prior to 24 hours before the appointment.
3. View Appointments
4. Appointment Reminder

3.1.2 Instructor

1. Request an Exam: The Instructor can make a request to hold an exam.
 - a. Malformed request: The request is not a valid request variables are missing or improperly set.
 - b. Unavailable date range: The date or dates listed are unavailable for testing.
2. See Requests and Statuses
3. Cancel Request
4. View appointment details
5. View details about exam
6. Student's appointment, assigned seat and if the student showed up

3.1.3 Admin

1. Edit testing center information. This includes the ability to:
 - a. Edit the number of seats.
 - b. Edit the number of set-aside seats.
 - c. Edit the hours of the testing center, including dates open.
 - d. Edit the dates and times the testing center is reserved for non-Stony Brook exams.
 - e. Edit the gap time.
 - f. Set the reminder interval.
2. Import data
 - a. Superfluous appointments: When there is data that does not match up with the appointment schedule and the class roster – that is, a student is registered for an exam for a course that they are not registered for – the student's appointment is removed and an email is sent to the student, instructor, and administrator.
3. Display the utilization of the testing center

4. Approve or deny exam scheduling
5. Make an appointment on behalf of a student
6. View appointments
7. Cancel or modify appointments
8. Check-in students
9. Generate reports. Reports include:
 - a. The number of student appointments on a given day.
 - b. The number of student appointments on a given week, along with the course identifiers that correspond with the associated exams.
 - c. The courses that are being used in the testing center for a given term.
 - d. The number of student appointments in each term across a range of terms.

4. Contributions

Luka Jurukovski was responsible for writing the use case descriptions for the instructor actor, as well as constructing the use case diagram for said actor. Austin Borger was responsible for the admin use case diagram, as well as the overview section of this document. Robert Kinney was responsible for both the student use case diagram and description. Joshua Ethridge was responsible for collaborating with the formation of the admin use case diagram, as well as writing the use case description for the admin.