**UML Assignment 4**

***10185101210 陈俊潼***

1. **Sol.**
2. Actors: PhD students, Undergraduates, Authorized users, Professor, Course database, Thesis database.
3. Use cases: course registration, thesis proposal registration, course management, thesis proposal review, notification.

A screenshot of a cell phone

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1. Details for *course registration*:

|  |  |
| --- | --- |
| **Summary** | Course registration |
| **Actor List** | Undergraduates, Course database |
| **Description** | The use case for PhD students to register new courses. |
| **Flow of Events** | 1. The use case starts when the user decides to register a course. 2. Validate if the user is a graduate student. 3. Validate if there are available quota for this course, if so, modify the database. 4. At the end of the use case, start the new use case ‘notification’, notify the student about the result. |
| **Pre-condition** | 1. The student has to log in first and must be a graduate student. 2. The system is not under maintenance. 3. The course still has available quota. |
| **Post-condition** | The course will be registered. |
| **Exception** | 1. If the course is fully registered: reject registration; 2. The system is under maintenance: reject registration and corresponding message will be displayed. |

1. **Sol.**
2. Actors:
   1. Customers
   2. Booking system
   3. Airline Database
   4. Notification
3. A picture containing black, remote, control, monitor

   Description automatically generated
4. Details for *Book Flight:*

|  |  |
| --- | --- |
| **Summary** | Book flight |
| **Actor List** | Customer, Airline Database |
| **Description** | This use case allows user to book flights. |
| **Flow of Events** | 1. This use case starts when a user tries to book a flight. 2. Validate if the desired flight has available seats. 3. Initiate another use case *Collision Handler*, if there are multiple users booking the same seat at the same time. 4. Change data in the airline database. 5. The use case end with initiating the *notification* use case, notifying result of success or failure. |
| **Pre-condition** | 1. The user has to be logged in. 2. The user needs to have chosen the destination and flight. 3. The system can’t be under maintenance. |
| **Post-condition** | The seat will be ordered and no longer available. |
| **Exception** | 1. If the request is for an unavailable seat or flight, this use case will throw an error. 2. If user didn’t log in or the system is under maintenance, the use case won’t be initiated. |