CPSC 203 Design Skills

Week 1 Lab2

Use Case Descriptions

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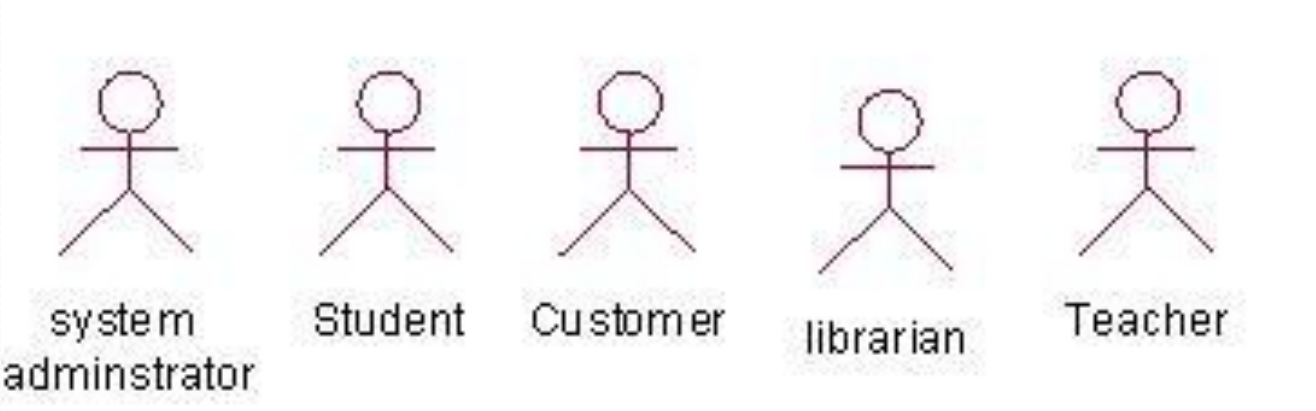
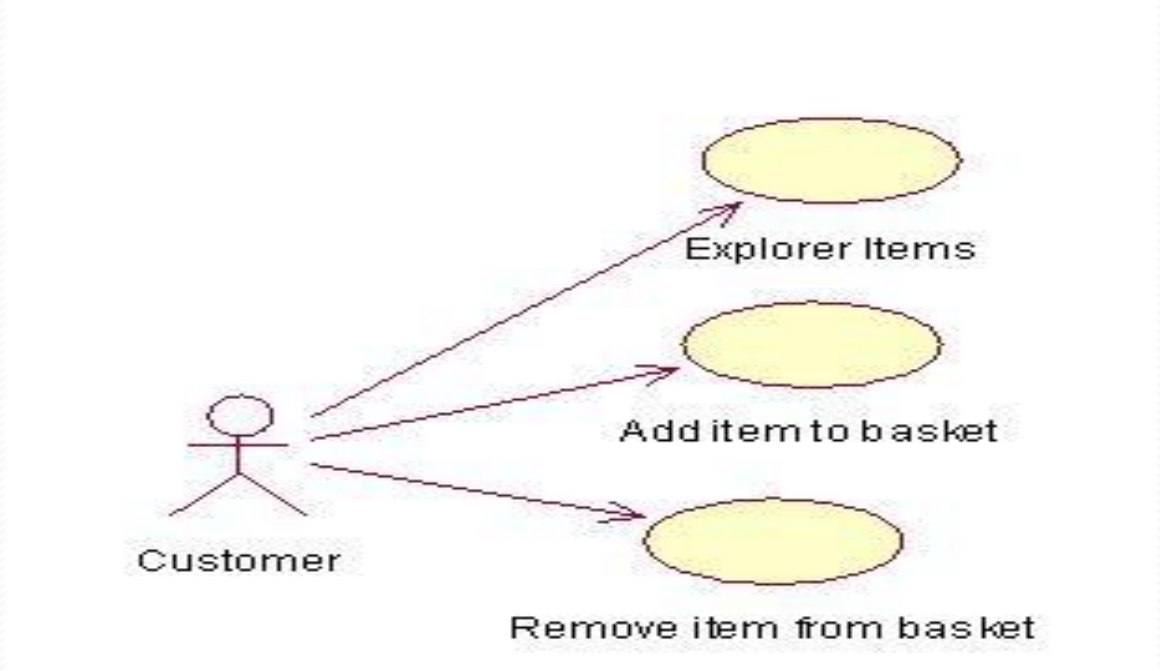
Review on Use Case

- Actors: Nouns



Review on Use Case

- Use Case: Actions



Use Case Description

- **Name:**
- **Description:**
- **Primary Actors:**
- **Secondary Actors:**
- **Preconditions:**
- **Main Flow:**
- **Postconditions:**
- **Alternative Flows:**

Example

Construct a UML Diagram for an online travel agency system. A new user is required to create a new profile with a username and password. This profile can be changed at any time if the user wants. The user logs to the system using his/her username and password. The system has to check the user's log information and lets him/her log to the system only if this information is valid. After logging in the system, the user inquires about different flights. The system provides him/her with the required information. The user can perform booking, changing, and canceling flight reservations. This includes choosing a payment method and making a payment. The system obtains the payment method and verifies traveler credit line. The system is also responsible for generating travel itineraries and arranging for delivery of flight tickets and flight itineraries.

Example:

- **Name:** Create a Profile
- **Description:** The user creates a new profile in the system
- **Primary Actors:** User, system
- **Secondary Actors:** Manager
- **Preconditions:**
  - The user entered valid information for name, address, phone, and email
  - The user chose a username that is available in the system
  - The user chose a password that matches system restrictions
  - The user retyped the password correctly

- **Main Flow:**
  - The user enters first name and last name
  - The system displays available countries in the world
  - The user selects a country of residence
  - The system displays provinces in this country
  - The user selects his/her province
  - The system displays cities in this province
  - The user selects his/her city
  - The user enters his/her email
  - The system checks the correctness of the email
  - The user enters his/her phone number
  - System checks the correctness of the phone number

- The user chooses a username
- The System validates the availability of this username
- The user chooses a password
- The system validates the robustness of this password
- The user retypes the password
- The system checks if both passwords are matched

- **Postconditions:**
  - The user creates a new profile
- **Alternative Flows:**
  - If any data is entered correctly
    - The system provides an error messages and allows correction up to three times

Example: cancel flight

- **Name:** Cancel flight
- **Description:** The user wants to cancel of a booked flight
- **Primary Actors:** User, System
- **Secondary Actors:** Manager
- **Preconditions:**
  - The user logged in the system with valid username and password
  - The user already booked the flight he/she wants to cancel
  - The deadline of canceling flight has not passed

- **Main Flow:**
  - The user chooses a flight to cancel
  - The system checks the deadline of canceling the flight
  - If the deadline has not passed, the system refunds money to the user after subtracting the cancelation fees.
- **Postconditions:**
  - The user cancels the flight
  - The number of empty seats on the plans are increased by the number of cancelled seats
- **Alternative Flows:**
  - If the deadline of cancelling the flight has passed
    - An error message is provided
    - The user can still cancel the flight but with no refund

Another example

- Check Wiki
  - http://wiki.ucalgary.ca/page/Courses/Computer_Science/CPSC_203/CPSC_203_Template/Labs_Template/Week_1_-_Lab_2

Exercise

- Develop a use case diagram along with a use case description for a shipping company such as UPS or FedEx.
- **Requirements**
  1. Customers must be able to arrange for a pickup of a package to be delivered
  2. Customers must be able to check the status of a package, assuming there is a tracking number for it
  3. Customers must be able to refuse a package
  4. Delivery people must be able to determine the next address to deliver a package to, and get directions for it

Exercise (cont'd)

5. Delivery people must be able to confirm a package has been delivered, and store the signature of the signer.
6. Front staff must be able to accept new packages to be shipped, as well as charge customers.
7. Auditors must be able to look at past parcel sending history for a particular location or customer.