# Worksheet 3-1: Use Cases

## Instructions:

1. Download or make a copy of this assignment.
2. In groups of up to 4 students, complete the work below in class. If you do not have time to complete the activity in class, you may finish it at home (individually or in groups).
3. You may collaborate within your group to complete the assignment but you must work on each question together and come up with a consensus response. You may not collaborate between groups and the work you submit must be your own.
4. Turn in your solution as a PDF on Canvas. Each group member is responsible for turning in their own copy of the assignment on time.

## Rubric:

This activity is worth 4 points. Full points will be awarded for complete work, 2 points will be awarded for incomplete or clearly wrong work, and 0 for substantially incomplete or missing work.

## Team:

Divide the roles below between students who participated in this activity. As you complete these activities throughout the semester, please rotate roles.

| **Role** | **Name** |
|---|---|
| **Manager**: Start quickly, remain focused, keep track of time, ensure everyone participates and all voices are heard, assign duties, etc. | <Braydon> |
| **Reflector**: Observe how the team is working, reflect, and give suggestions during the work on how to improve performance. In the end, record what the team learned, what went well, and what could be improved. | <Diego Duran> |
| **Recorder**: Create a copy of this document and share it with the team. Although everyone can write, the recorder should ensure the quality and completeness of the answers. | <Diego Garcia > |
| **Presenter**: Communicate team questions and clarifications with the instructor or other teams. Present the answers to the whole class, as requested. Be ready to explain the reasoning for each answer. | <Tyler and MItchell> |

## Work:

USE CASE DIAGRAMS

A use case diagram describes the actors and their goals in using the system.


★ In the diagram above, what are the actor(s) and use case(s)?

Actor(s): <Attendant and manager>
Use cases(s): <Make Reservation, register client, generate income report, and calculate sales comission>

An Actor represents a persona who will use the system. An actor can be represented as a stick figure or as a box with the stereotype <<actor>> on top of it (usually adopted for representing external systems). To identify actors, ask questions such as: Who will use the system? Who is responsible for the use cases?

★ Identify at least 3 actors in each of the following systems:

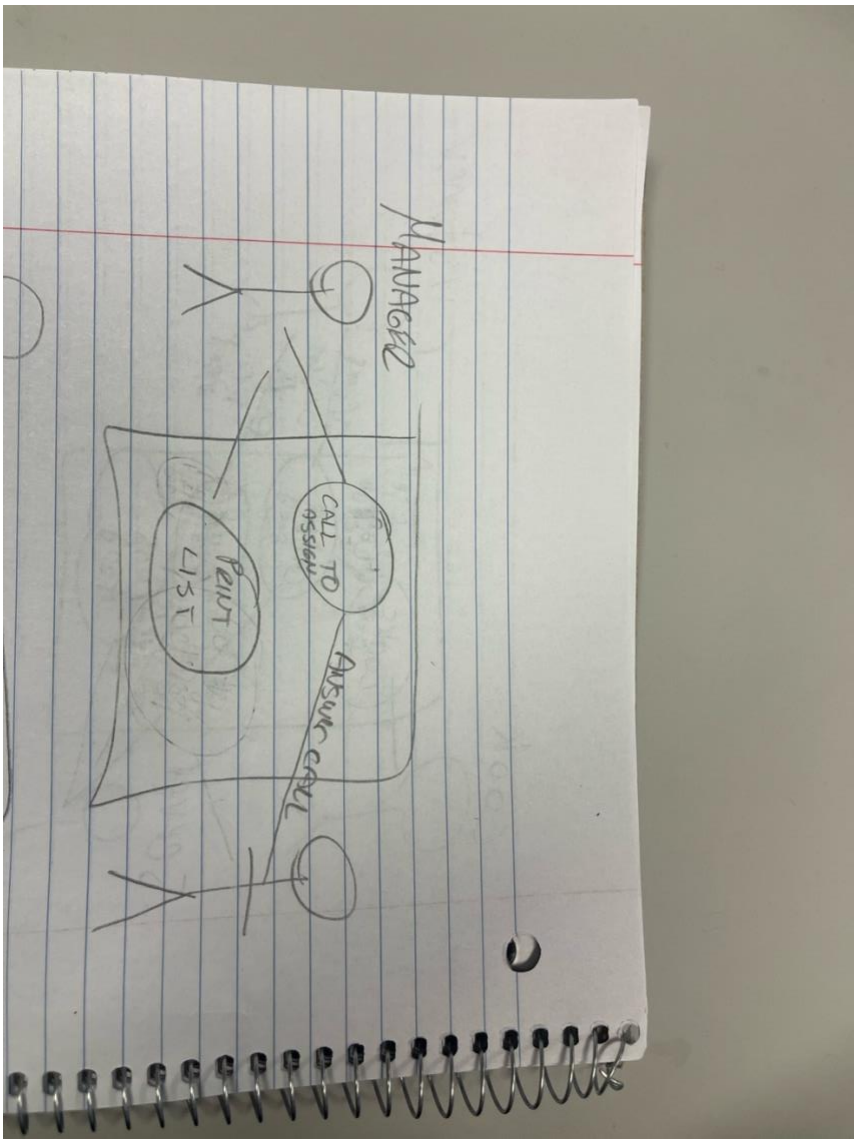
Restaurant management system: <Customer, Server, Cook>
Academic management system: <Teacher, Principal/Dean, Students>
Online banking system: <User, Bank Admin, Third-Party service (paypal)>

★ To identify use cases, think about actors' responsibilities and goals. Choose one of the systems from Question 2 and draw a use case diagram with at least two actors and 4 use cases. For this question and all the others, you can use any online drawing tool that supports creating use case diagrams (e.g., Creately, Draw.io, Gliffy, Lucidchart, SmartDraw, etc.) or produce a hand drawing.

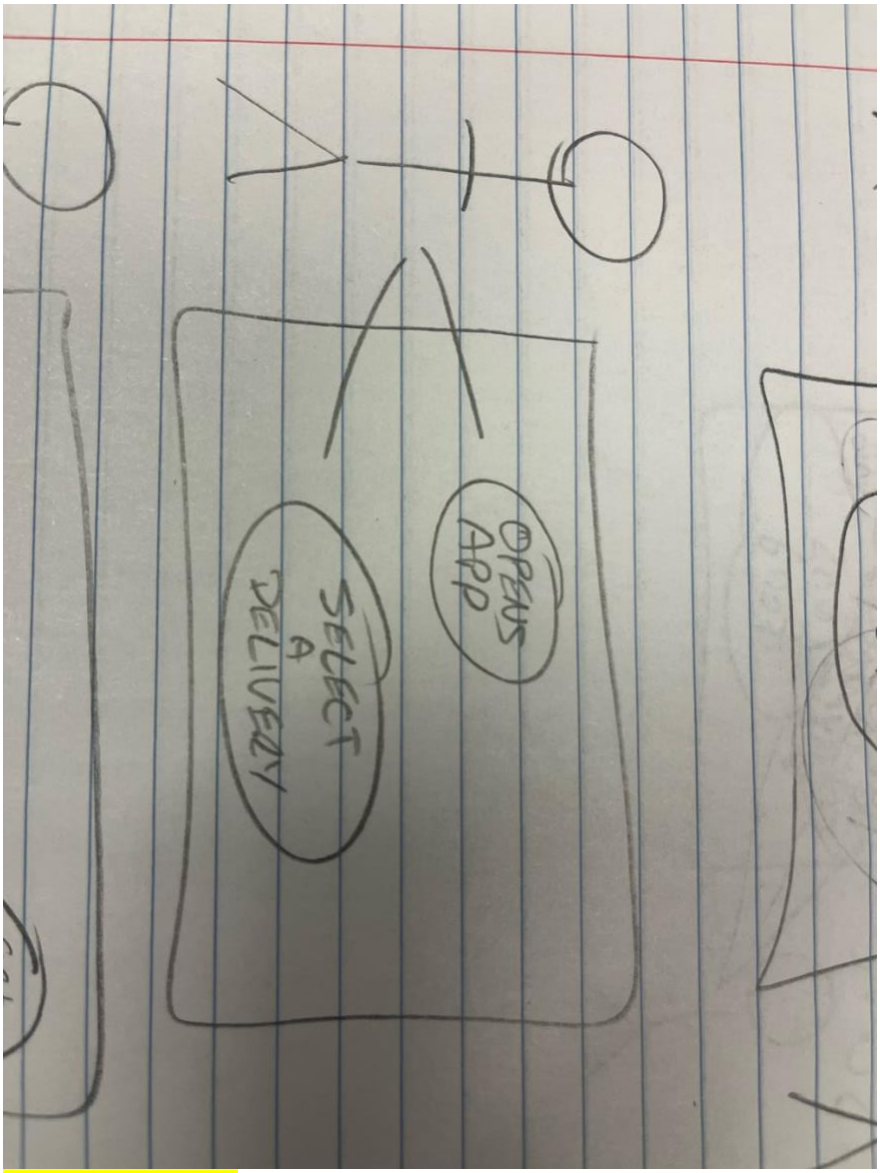
★ You were hired to specify requirements for a restaurant management system. As a good software analyst, you know that a use case represents an action performed through the system, i.e., actions performed outside the system are not represented in a use case diagram. You also know that the system for which you are specifying requirements is not represented as an actor. Draw a use case diagram for each of these situations:

(a) The manager prints the list of deliveries and calls a driver using their cellphone to assign a delivery.

<insert response>

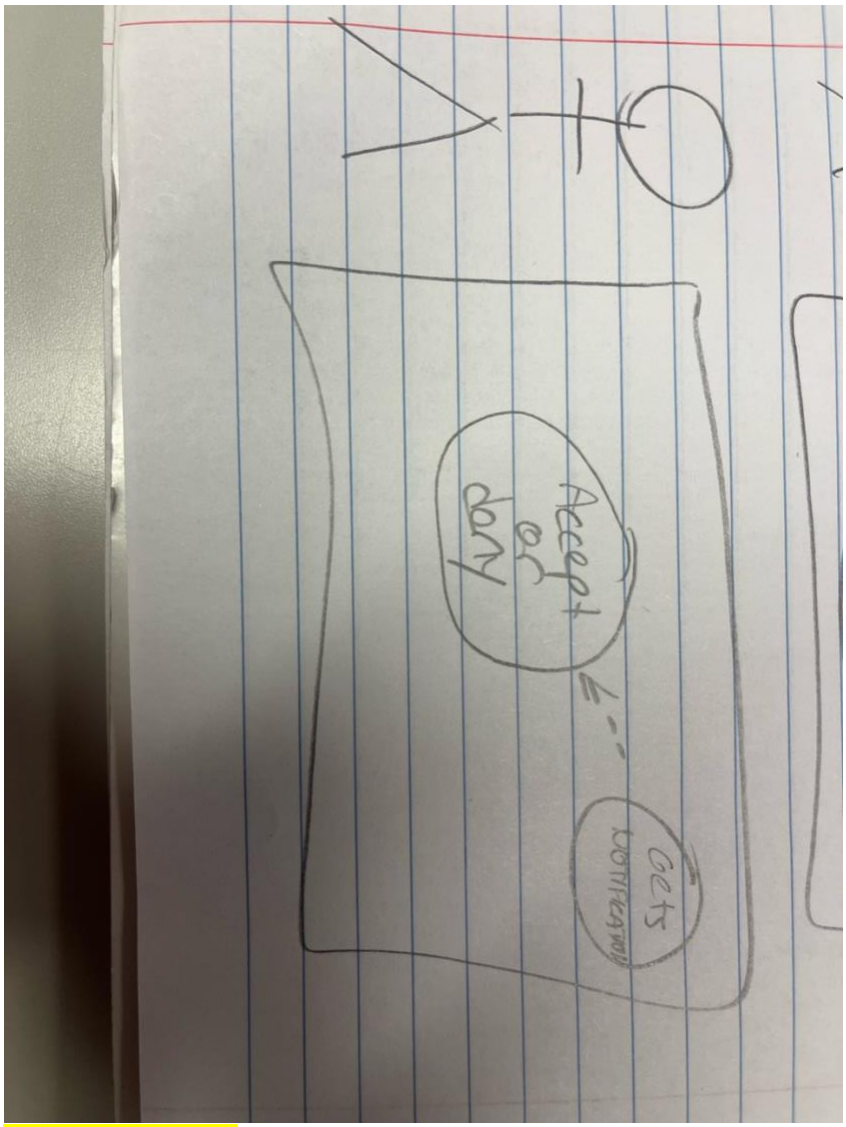


(b) The driver opens the app and selects a delivery from the set of available deliveries.



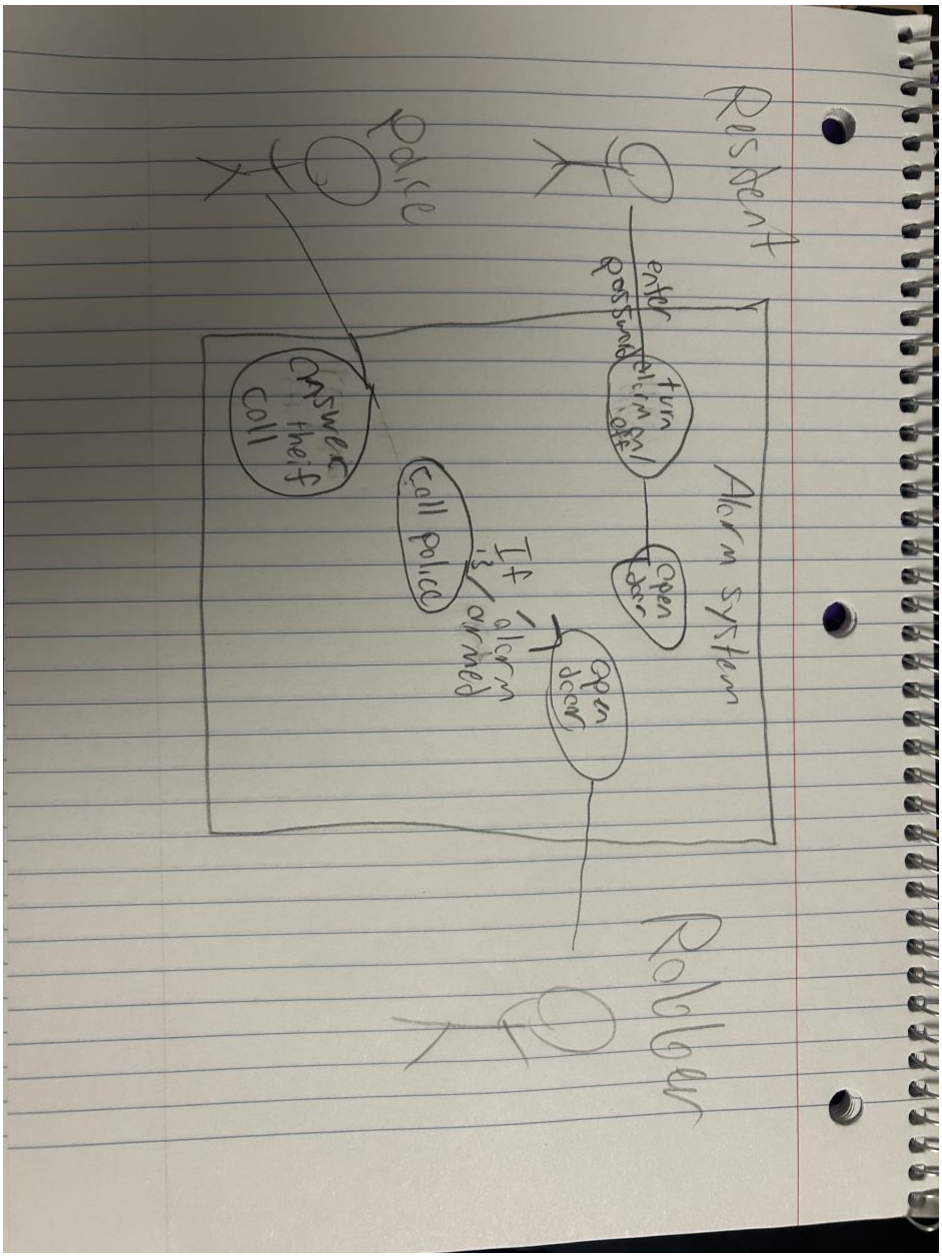

<insert response>

(c) The system automatically selects an available driver, who receives a push notification in their app and can accept or not the delivery.




<insert response>

★ Draw a use case diagram for this home automation system: Residents access the system via the Internet and monitor lights and the residential alarm. Sensors monitor doors and windows. If a door or window is opened without deactivating the alarm, the siren is triggered, and the system sends an alert to the police system. To turn off the alarm, a resident enters the password on the panel next to the door.




<insert response>

USE CASE DESCRIPTIONS

Use case descriptions specify software requirements using language that should be precise, yet simple in a way that users and clients can read it.

★ Write a use case using the format described in class for logging a user into a system. It should consider what happens when the user name is taken, the user name can't be found, or the password isn't correct.

Use Case 1: Log in to system

Actor: User
Trigger: User needs to log in
Pre-conditions: Have a valid log in
Post-conditions: Successfully log in
Success scenario:

1. User enters User name
2. User Name is accepted
3. User enters Password
4. Password is accepted
5. User is logged in

Alternate Scenario (No user):
2. User name is not accepted
3. System informs user
4. System asks user to try again

Alternate scenario (Bad password):
4. User Password is not accepted
5. System informs user
6. System asks user to try new password or username

★ The use case steps describe goals or intentions and normally should not contain user interface or implementation details (e.g., clicking, typing, window, database, etc.). This is a bad practice that anticipates and limits implementation decisions. Remember, you are writing requirements not designing the solution. Rewrite the following steps using implementation-agnostic language (select, inform, register, etc.):
The system writes the product data to the database.
The system executes an INSERT in the Product table.

< The system stores the product data.
The system updates the Product table with provided information.>

The user clicks on the button corresponding to the form of payment.

<The user selects payment method.>

The user types the product name.
The user clicks on the desired product.
The user opens an auxiliary window and chooses one in the products list box.

<User enters product name
User selects desired product
The user opens an auxillary window and selects a product from a list >

★ Reflection (to be completed by the Reflector):

What did the team learn from this activity?

<Organization, diagrams, and descriptions of tasks and things we need to do for our project are very important for moving the project forward in order to create what we need in time in an organized fashion.>