

Activity Diagram for the Parking Lot

Create some activity diagrams for the parking lot problem.

We'll cover the following

- Vehicle entering the parking lot
 - States
 - Actions
- Activity challenge: The customer pays the parking ticket

An activity diagram is a great way to visualize the flow of messages from one activity to the other in the system. There can be different activity diagrams that we can create for our parking lot system. For this lesson, we will create activity diagrams for the following two activities:

- The vehicle entering the parking lot
- Activity challenge:** Customer pays the parking ticket

Vehicle entering the parking lot

The following are the states and actions that will be involved in this activity diagram.

States

Initial state: The customer enters the parking lot.

Final state: There are two final states present in this activity diagram, shown below:

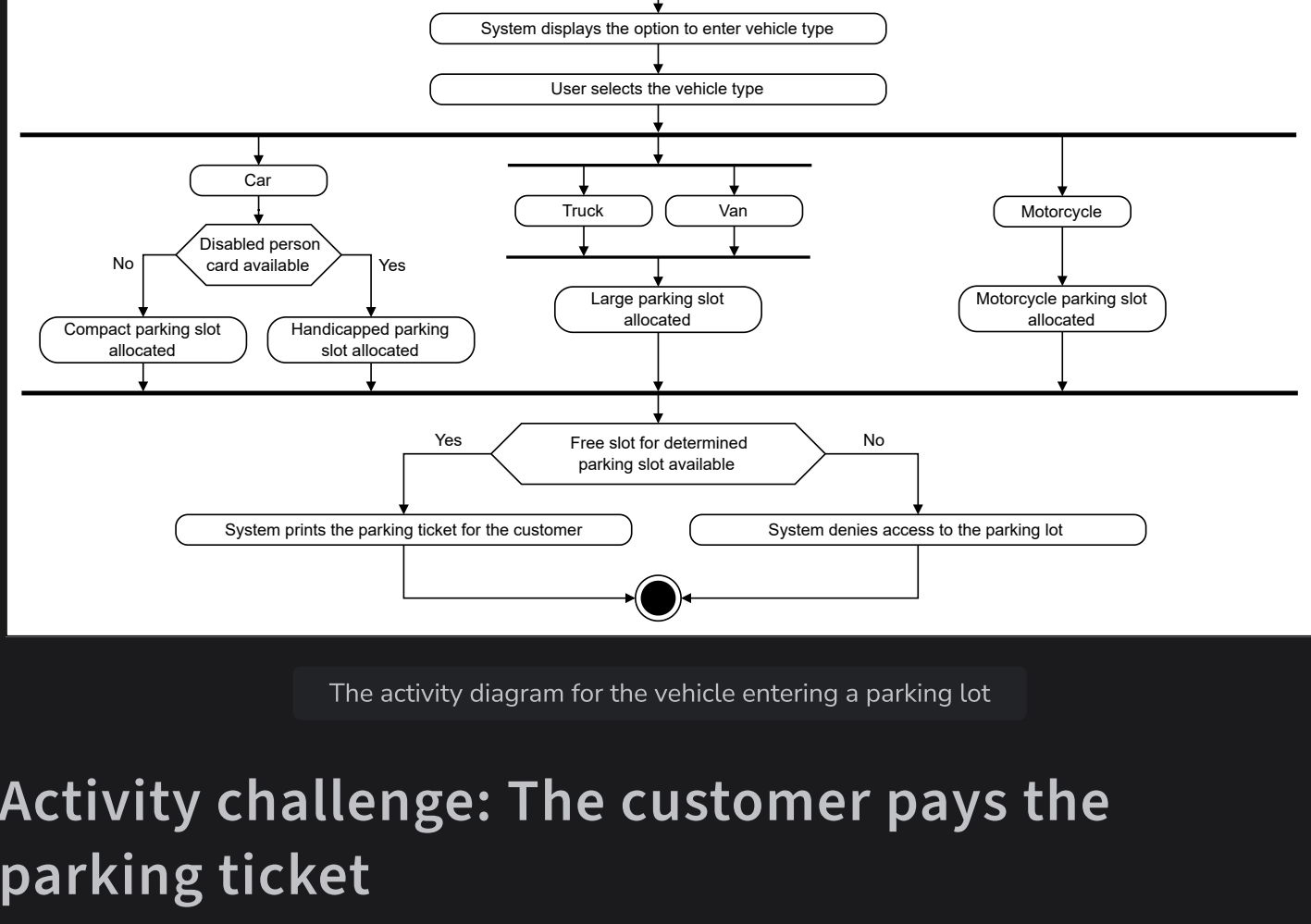
- The customer receives the parking ticket through the system.
- There is no parking slot vacant, so the customer is denied access to the parking lot.

Actions

The customer arrives at the parking lot entrance and selects their vehicle type. They are assigned their dedicated parking spot according to their select vehicle type. The parking lot then informs us about the availability of that parking spot and allows access accordingly.

Based on the order above, the activity diagram of a vehicle entering a parking lot is given below.

Note: Here we assume that only a car can be parked in the handicap spot. Access is only available if the car has a disabled person card present.

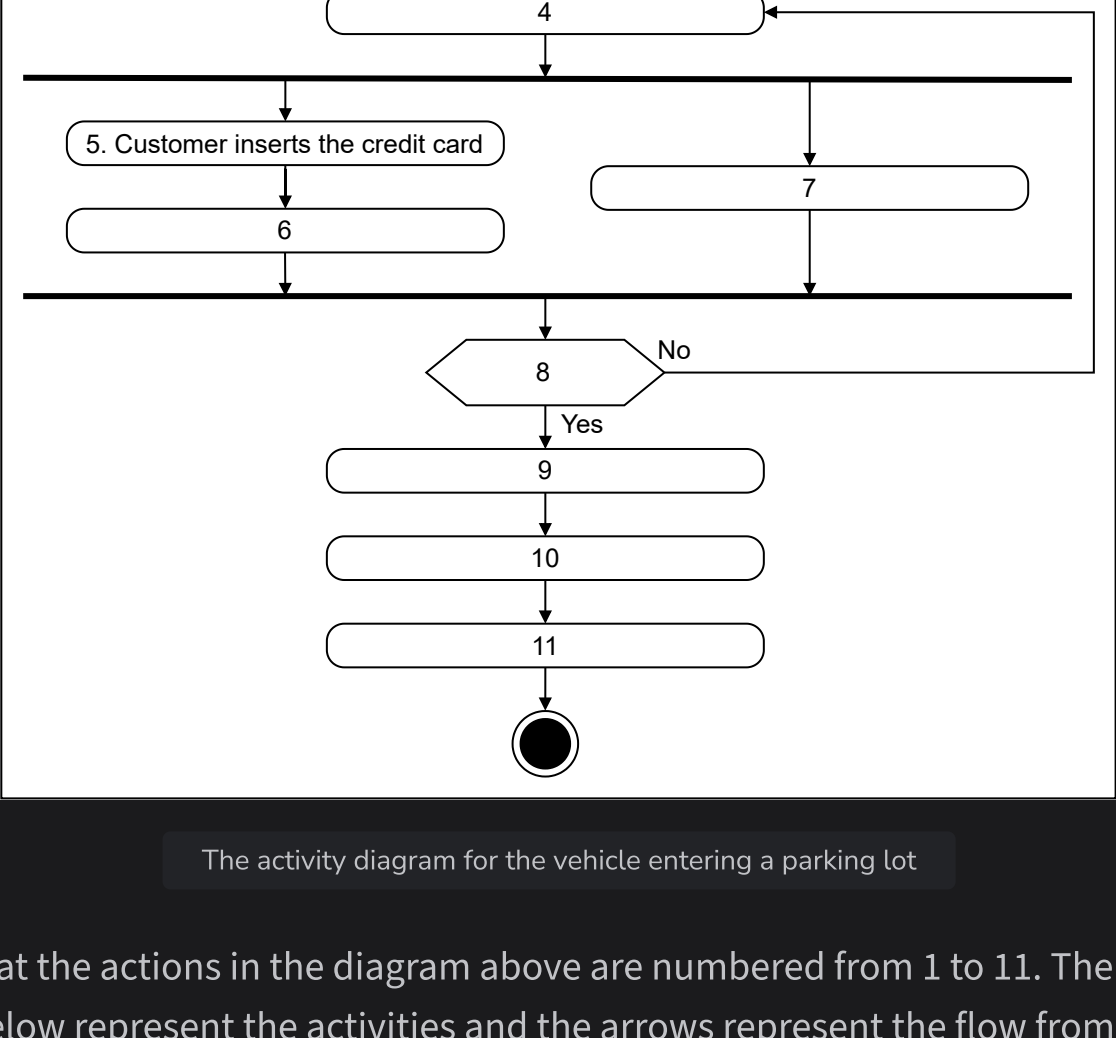


The activity diagram for the vehicle entering a parking lot

Activity challenge: The customer pays the parking ticket

You will help us create an activity diagram of a customer paying a parking ticket at the exit panel.

The skeleton of the activity diagram below represents that the customer has a valid parking ticket available.



The activity diagram for the vehicle entering a parking lot

Notice that the actions in the diagram above are numbered from 1 to 11. The slots shown below represent the activities and the arrows represent the flow from one activity to the other. Can you rearrange the slots below in the correct order they should appear in the activity diagram above?

Based on the description above, can you fill in the missing slots with the correct order of actions in the activity diagram?

Note: If you get stuck, just click the “Show Solution” button for the correct answer.

Fill the missing slots with the correct actions for a customer paying the parking ticket.

Customer arrives at the parking lot exit

System scans the parking ticket

System calculates and displays the parking rate

System asks for payment

Customer inserts the credit card

Customer enters the pin

Customer pays cash

Transaction is successful

System sends a success message

System prints the receipt

System opens the parking gate

Reset

Show Solution

Submit

Alternatively, you can also click the "Show complete diagram" button below to see the complete sequence diagram.

Hide complete diagram

```
graph TD
    Start(( )) --> A[Customer arrives at the parking lot exit]
    A --> B[System scans the parking ticket]
    B --> C[System calculates and displays the parking rate]
    C --> D[System asks for payment]
    D --> Fork1(( ))
    Fork1 --> E[Customer inserts the credit card]
    Fork1 --> F[Customer pays cash]
    E --> G[Customer enters the pin]
    G --> H{Transaction is successful?}
    F --> H
    H -- No --> D
    H -- Yes --> I[System sends a success message]
    I --> J[System prints the receipt]
    J --> K[System opens the parking gate]
    K --> End((( )))
```

We've looked at some of the activity diagrams of our parking lot system. In the next lesson, we will present the code for our designed classes in some of the most popular languages.