EXERCISE NO. 4

Aim: Steps to draw the Use Case Diagram using Draw IO.

REQUIREMENTS:

Hardware Interfaces

- Pentium(R) 4 CPU 2.26 GHz, 128 MB RAM
- The system shall run on Microsoft Windows based system.

Software Interfaces

- Any window-based operating system
- WordPad or Microsoft Word
- Star UML

Theory:

According to the UML specification a use case diagram is "a diagram that shows the relationships among actors and use cases within a system." Use case diagrams are often used to:

- Provide an overview of all or part of the usage requirements for a system or organization in the form of an essential model or a business model
- Communicate the scope of a development project
- Model your analysis of your usage requirements in the form of a system use case model

Use case models should be developed from the point of view of your project stakeholders and not from the (often technical) point of view of developers.

Rizwan Ahamad

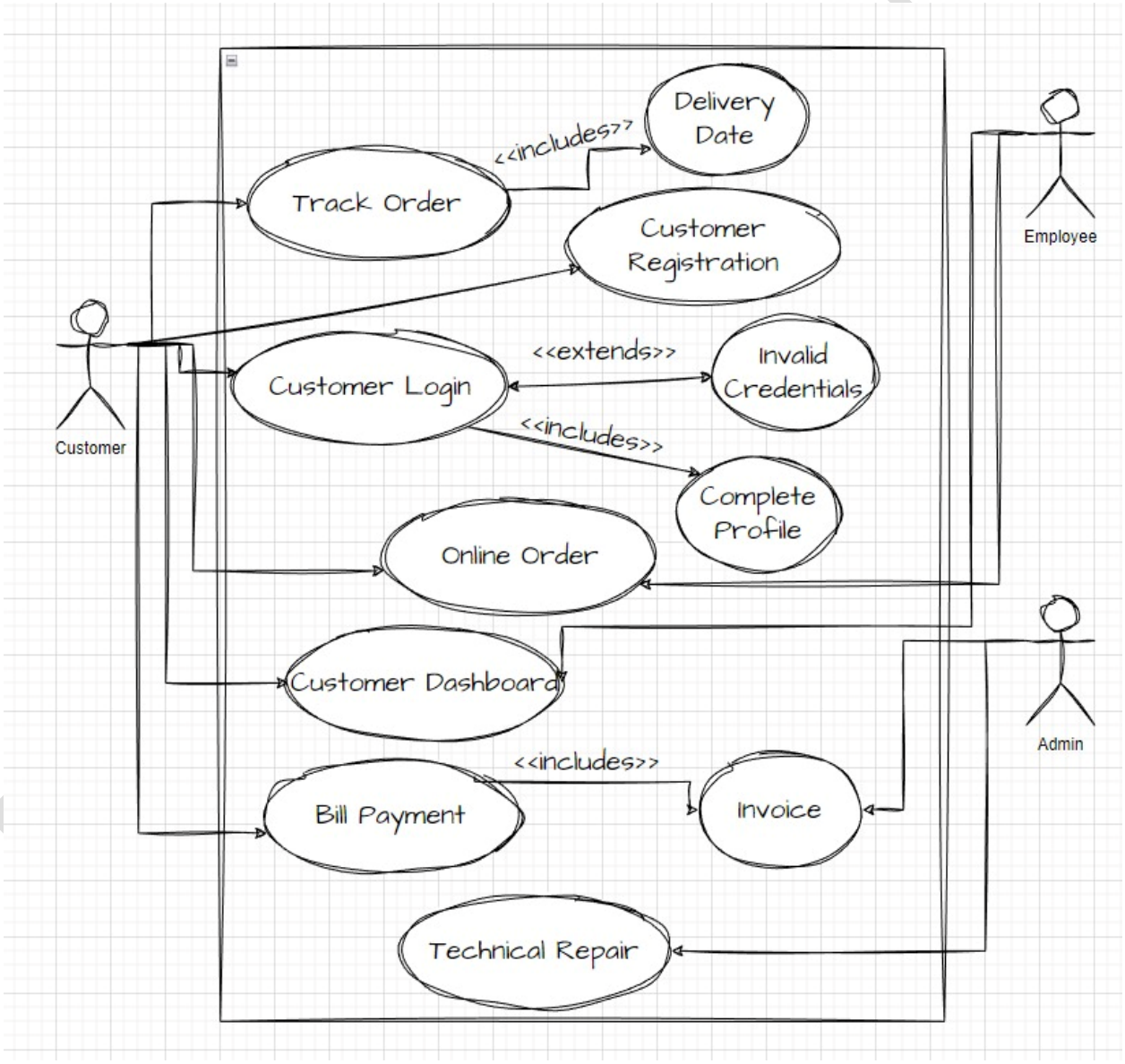
There are guidelines for:

Use Cases

Actors

Relationships

System Boundary Boxes



EXERCISE NO. 5

AIM :- To draw a sample activity diagram for real project or system.

REQUIREMENTS:

Hardware Interfaces

- Pentium(R) 4 CPU 2.26 GHz, 128 MB RAM
- The system shall run on Microsoft Windows based system.

Software Interfaces

- Any window-based operating system
- WordPad or Microsoft Word
- Star UML

THEORY

UML 2 activity diagrams are typically used for business process modeling, for modeling the logic captured by a single use case or usage scenario, or for modeling the detailed logic of a business rule. Although UML activity diagrams could potentially model the internal logic of a complex operation it would be far better to simply rewrite the operation so that it is simple enough that you don't require an activity diagram. In many ways UML activity diagrams are the object-oriented equivalent of flow charts and data flow diagrams (DFDs) from structured development.

Let's start by describing the basic notation :

- **Initial node**. The filled in circle is the starting point of the diagram. An initial node isn't required although it does make it significantly easier to read the diagram.
- **Activity final node**. The filled circle with a border is the ending point. An activity diagram can have zero or more activity final nodes.
- **Activity**. The rounded rectangles represent activities that occur. An activity may be physical, such as *Inspect Forms*, or electronic, such as *Display Create Student Screen*.
- **Flow/edge**. The arrows on the diagram. Although there is a subtle difference between flows and edges,never a practical purpose for the difference although.

Rizwan Ahamad

- **Fork**. A black bar with one flow going into it and several leaving it. This denotes the beginning of parallel activity.

- **Join**. A black bar with several flows entering it and one leaving it. All flows going into the join must reach it before processing may continue. This denotes the end of parallel processing.

- **Condition**. Text such as *[Incorrect Form]* on a flow, defining a guard which must evaluate to true in order to traverse the node.

- **Decision**. A diamond with one flow entering and several leaving. The flows leaving include conditions although some modelers will not indicate the conditions if it is obvious.

- **Merge**. A diamond with several flows entering and one leaving. The implication is that one or more incoming flows must reach this point until processing continues, based on any guards on the outgoing flow.

- **Partition**. If figure is organized into three partitions, it is also called swimlanes, indicating who/what is performing the activities (either the *Applicant*, *Registrar*, or *System*).

- **Sub-activity indicator**. The rake in the bottom corner of an activity, such as in the *Apply to University* activity, indicates that the activity is described by a more finely detailed activity diagram.

- **Flow final**. The circle with the X through it. This indicates that the process stops at this point.