EXPERIMENT–5

Objective: To create state transition diagram for

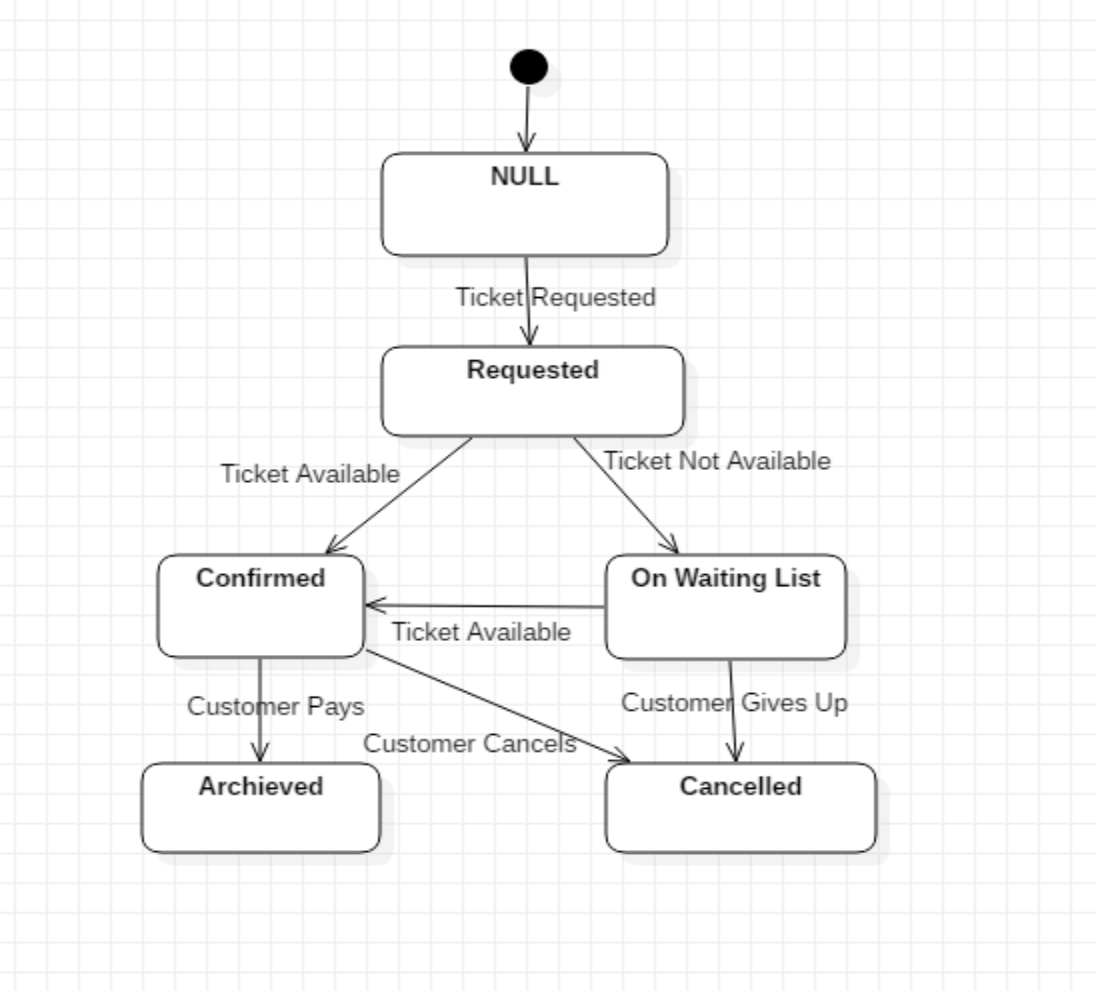
A. Railway Management System
B. Library Management System

Hardware/Software Requirements: Star UML

Theory: State-transition diagrams describe all the states that an object can have, the events under which an object changes state (transitions), the conditions that must be fulfilled before the transition will occur (guards), and the activities undertaken during the life of an object (actions). State-transition diagrams are very useful for describing the behavior of individual objects over the full set of use cases that affect those objects. State-transition diagrams are not useful for describing the collaboration between objects that cause the transitions.

A. Railway Management System

Diagram:



Description:

1. **Null-** This is the initial stage. We are in this state when nothing is being done.

2. **Requested-** The system jumps to this state from the Null state once a ticket is requested. This state means that a request from the user has been registered and is being processed.

3. **Confirmed-** This state means that the ticket that the user needed has been booked. The system comes to this state from the Requested state if the desired ticket is available.

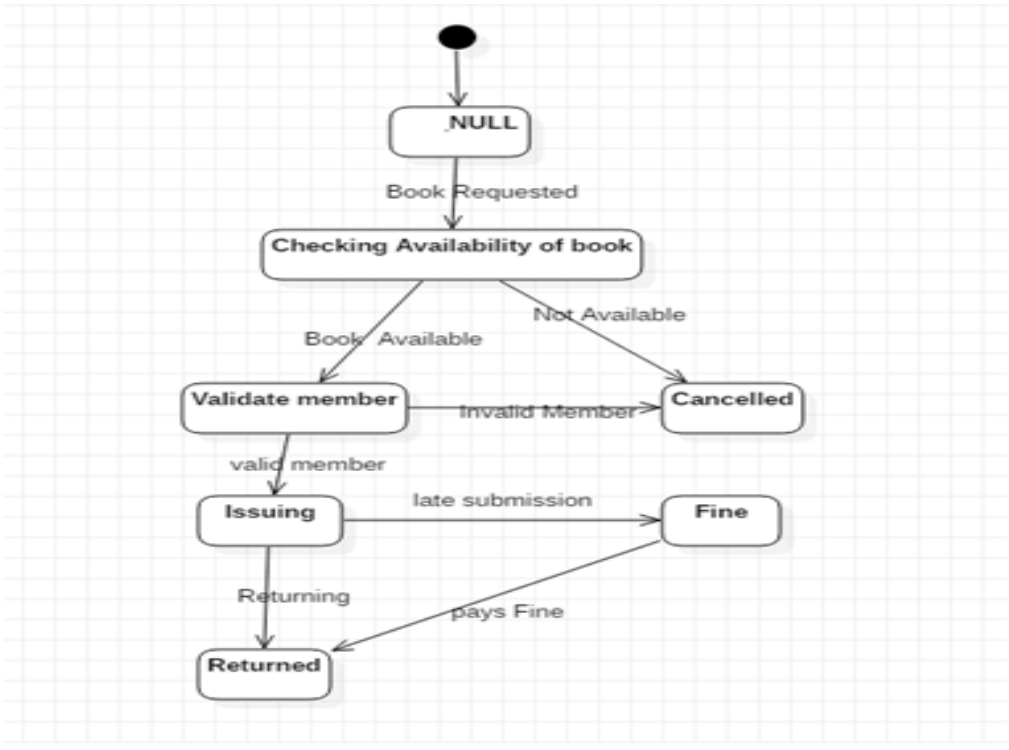
4. **On Waiting List-** The system goes to this state if the ticket that the user requested is not available.

5. **Archived-** This is one of the final states of the system. This is reached when the process of booking of ticket is complete with the user having paid the amount of the ticket. In this state, the information is updated in the database.

6. **Cancelled-** This state is reached in two ways. Firstly, when the system is in On Waiting List state and the user decides to give up. Secondly, when the system is in Confirmed state and the user decides to cancel his ticket. This is also a final state.

B. Library Management System

Diagram:



Description:

1. **Null-** This is the initial stage. We are in this state when nothing is being done.

2. **Checking availability of book-** The system jumps to this state from the Null state when a book is requested. This state means that a request from the user is being processed.

3. **Validate member-** The system checks if the member is valid or not after the book is available.

4. **Cancelled-** The system goes to the Cancelled state if the person is an invalid member.

5. **Issuing-** After the validity of the member is checked, the system jumps from Validate member state to the Issuing state.

6. **Fine-** The system jumps from the Issuing state to this state due to late submission of the book.

7. **Returned-** This state is reached in two ways. Firstly, when the book is returned by the member. Secondly, when the member pays fine for the late submission.