Q1] You need to develop a web-based application in such a way that user can search other users and after getting search complete, the user can send the friend request to other users. If the request is accepted then both users are added to friend list of each other. If one user does not accept the friend. The second user can send friend request. The user can also block each other.

Draw a state transition diagram for the above application

Q2] Following is an illustration for the State Chart diagram of a coffee brewing machine. Once the machine is turned ON, it starts to heat the water. You then need to place a coffee pod in the pod holder. We need to select the brew size and after which the water output is adjusted and coffee is brewed. Finally the coffee brew is complete

Q3] Draw a state transition diagram for Hotel Reservation Process. The hotel reservation management system is concern reserving the rooms for the customers for lodging and boarding in the hotel. The customer requests for the room in the hotel reception counter. If the room is not available the customer will be intimated about it and he will be put on the waiting list for the room availability. If the room gets available then it will be confirmed to the customer for use. The waiting list room count decremented by one. Initially, after the customer request if the room is available then it will be confirmed to the customer by decrementing the available room count and customer can use it directly. After a stay in the hotel customer clears the payment and the room will become available to the other customer if any, else increment room count

Q4] This is an example of water phase diagram represented as UML state machine diagram. Water can exist in several states - liquid, vapor, solid, and plasma. Several transitions are possible from one state to another. For example, freezing is phase change from liquid state to ice. Condensation is phase change from vapor state to liquid. Water vapor could turn directly into frost through deposition