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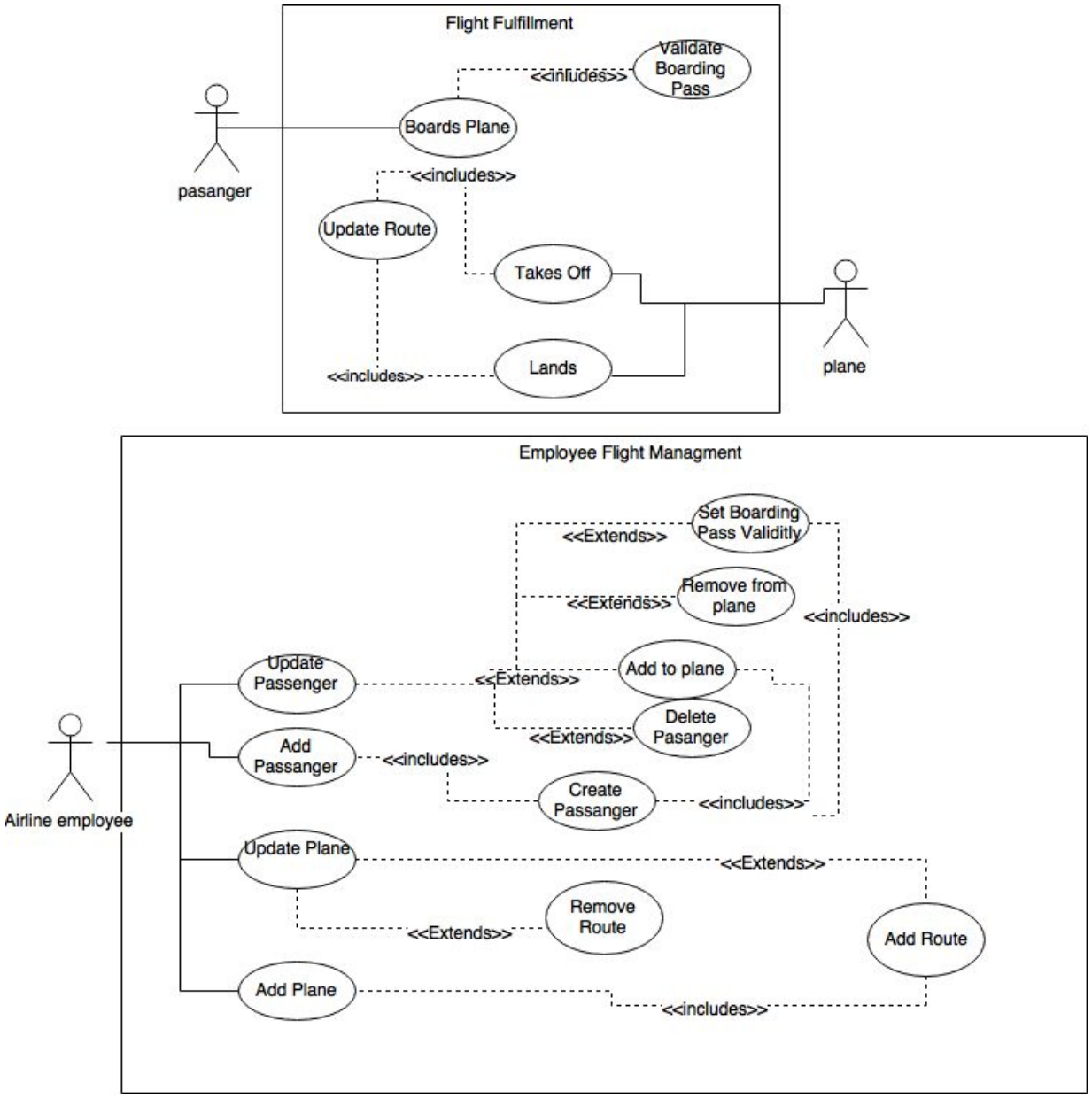
Q2:
Use case diagram:

A:



B:

Use Case Name: Add Passenger
Summary: An employee of the airline wants to add an passanger to a flight, this must be achieved by also assigning them to a flight as well as determining their boarding pass validity.

Basic Course of Events:

1. Employee adds passenger
2. In order for this to cobe completed a passenger needs to be assigned to a flight and have a status of their boarding pass
3. Employee assigns a flight
4. Employee assigns boarding pass
5. Once both these requirements are complete the passenger is created

Alternative Paths: No alternative, unless the employee/ airline wants to add passenger without a plane assigned to them. (this was not made clear by the assigment)
Exception Paths: if the Flight is full then the passanger will not be created, and the state of the system did not change

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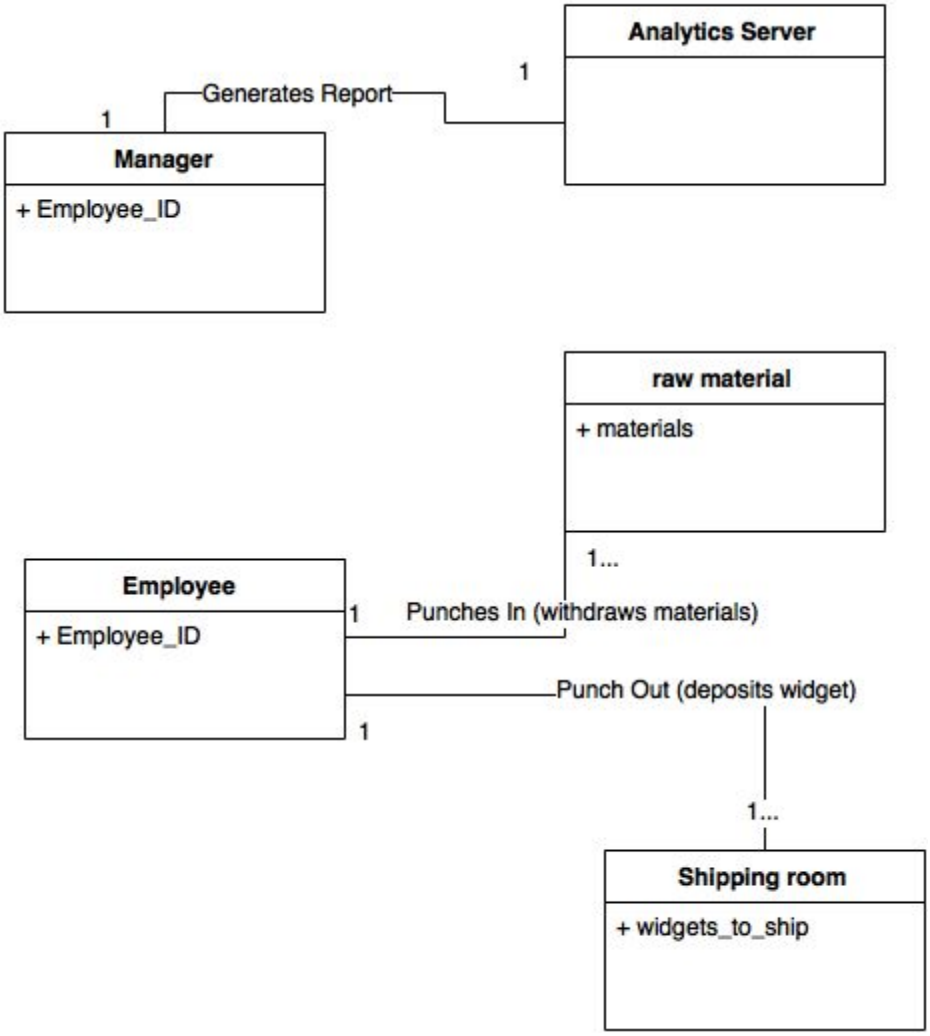
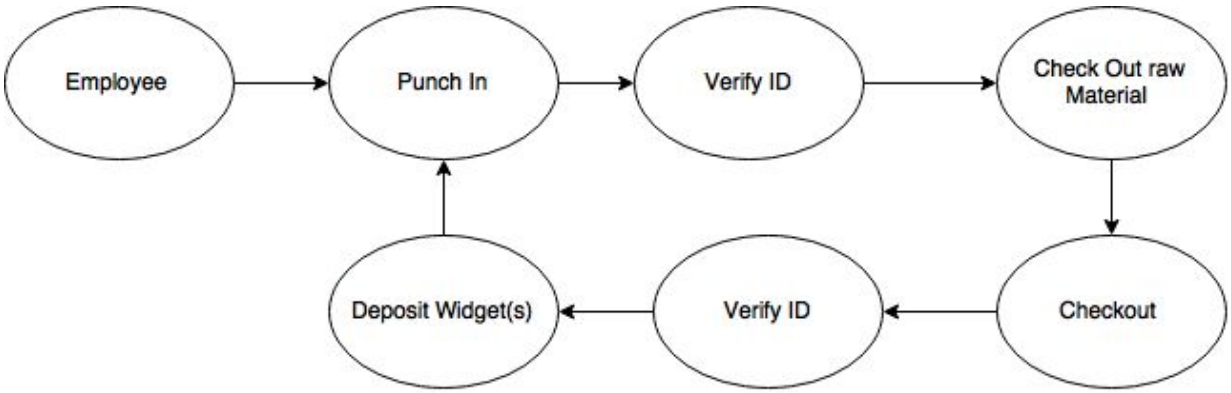
Q3:
Company ABC wants their 20 employees (**Actor**) to punch in and out (**Method**) from work using a computer. ABC builds between 10 to 100 widgets(**Attribute**) per day from raw material. An employee punches in when they pick up raw material to build a single widget (**Method**). They also input their employee ID(**Attribute**). The system validates their ID before accepting the punch-in(**Method**). After they finish building a widget, they place the finished widget in the shipping room and punch out(**Method**). If they plan to build another widget from raw material, they then get additional raw material and they punch in again. If they punched in and constructed more than one widget there is an optional place to enter the number of widgets created, otherwise it assumes one widget(**Method)**. At the end of the day the manager(**Actor**), using another computer over a local area network, generates a report of the number of widgets created for a period of time by employee. The manager must also enter their ID number (**Attribute**), which is also validated by the system, before they can use it. By default, the system assumes the current date but optionally the user can specify a date range. The report lists each employee and the quantity of widgets they built within the specified period.

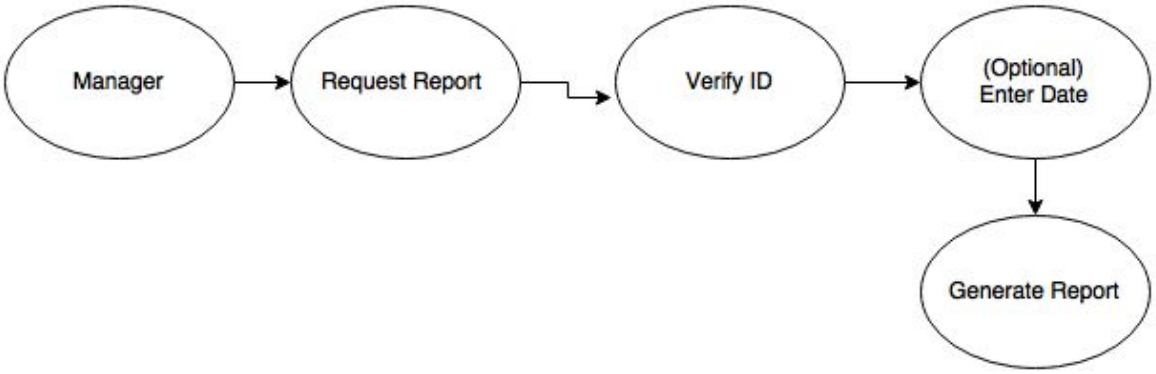


A:

Q4:

A:State Diagram


Employee
Punch In
Verify ID
Check Out raw Material
Checkout
Verify ID
Deposit Widget(s)


Manager
Request Report
Verify ID
(Optional) Enter Date
Generate Report