Review of State Diagrams

Lecture Notes Prepared by

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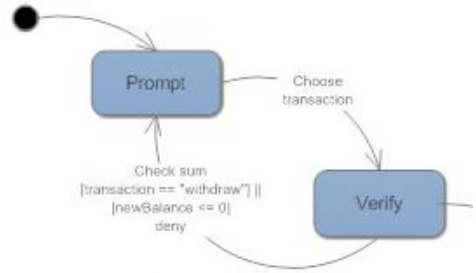
Symbols

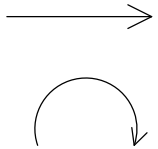
Initial State

A filled circle followed by an arrow

State

Represents situations during the life of an object
A rectangle with rounded corners
Examples: Idle, Active, Inactive, Verifying,
Waiting, Check Username



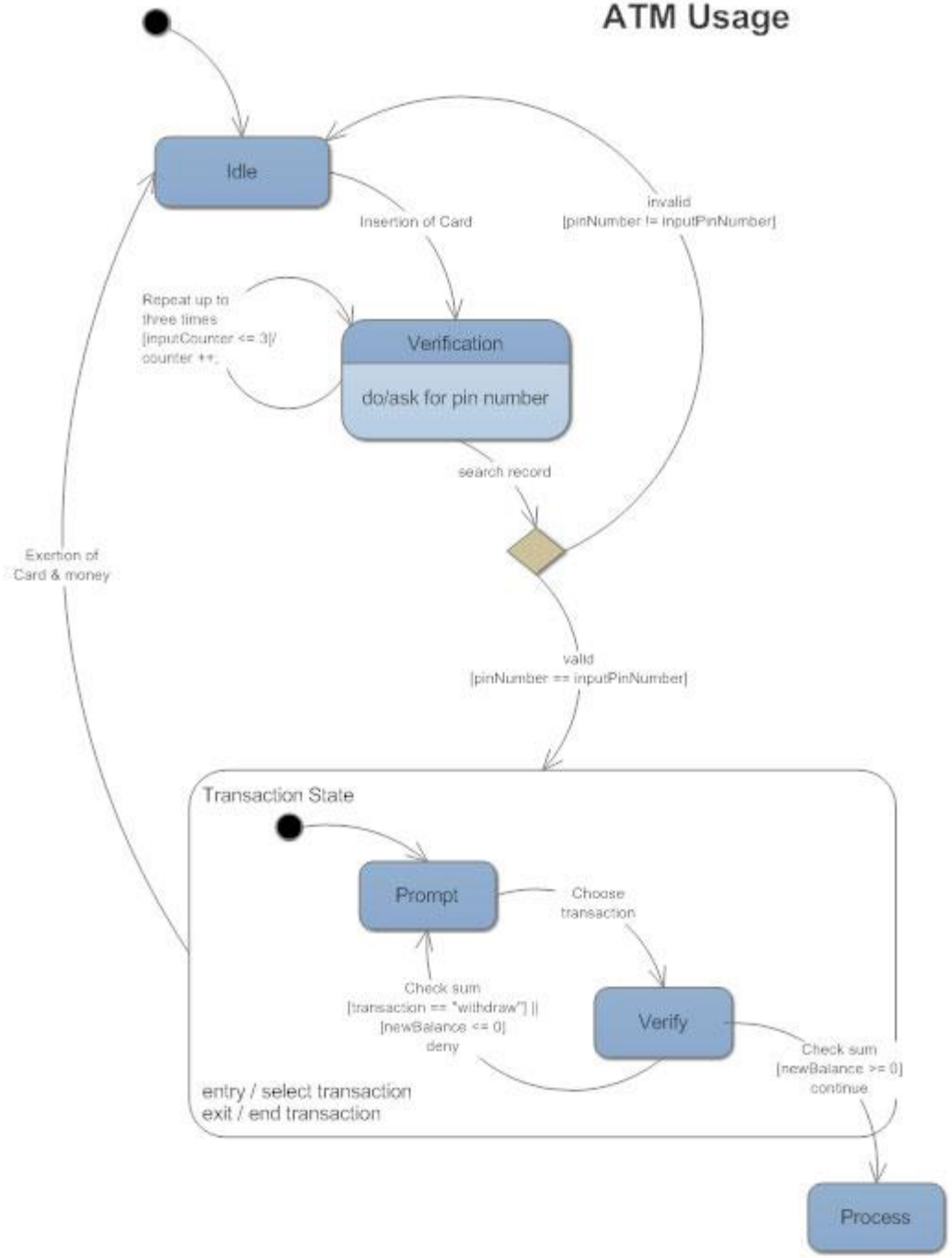


Transitions

Solid arrows that represent the path between different states of an object
Must be labelled with the event that triggered it and the action that results from it
A state can have a transition that points back to itself

Final State

A filled circle nested inside another circle
The transition arrow must point to it

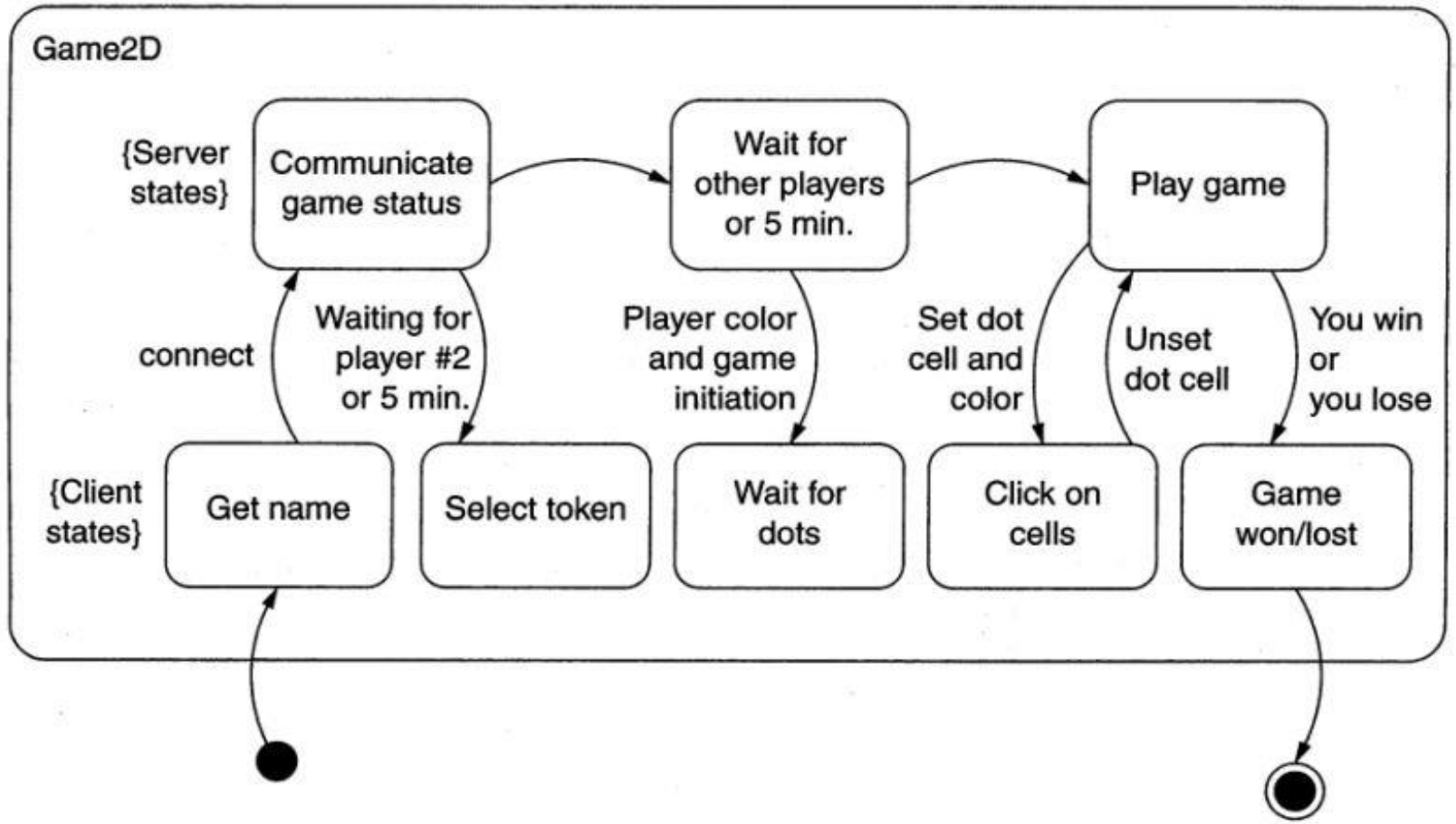


- A state diagram shows the behavior of classes in response to external stimuli
- Specifically, a state diagram describes the behavior of a single object in response to a series of events in a system
- Also known as a Harel state chart or a state machine diagram

This UML diagram models the dynamic flow of control from state to state of a particular object within a system

https://wcs.smartdraw.com/state-diagram/img/state-diagram.jpg?bn=15100111805

A State Machine for Game2D



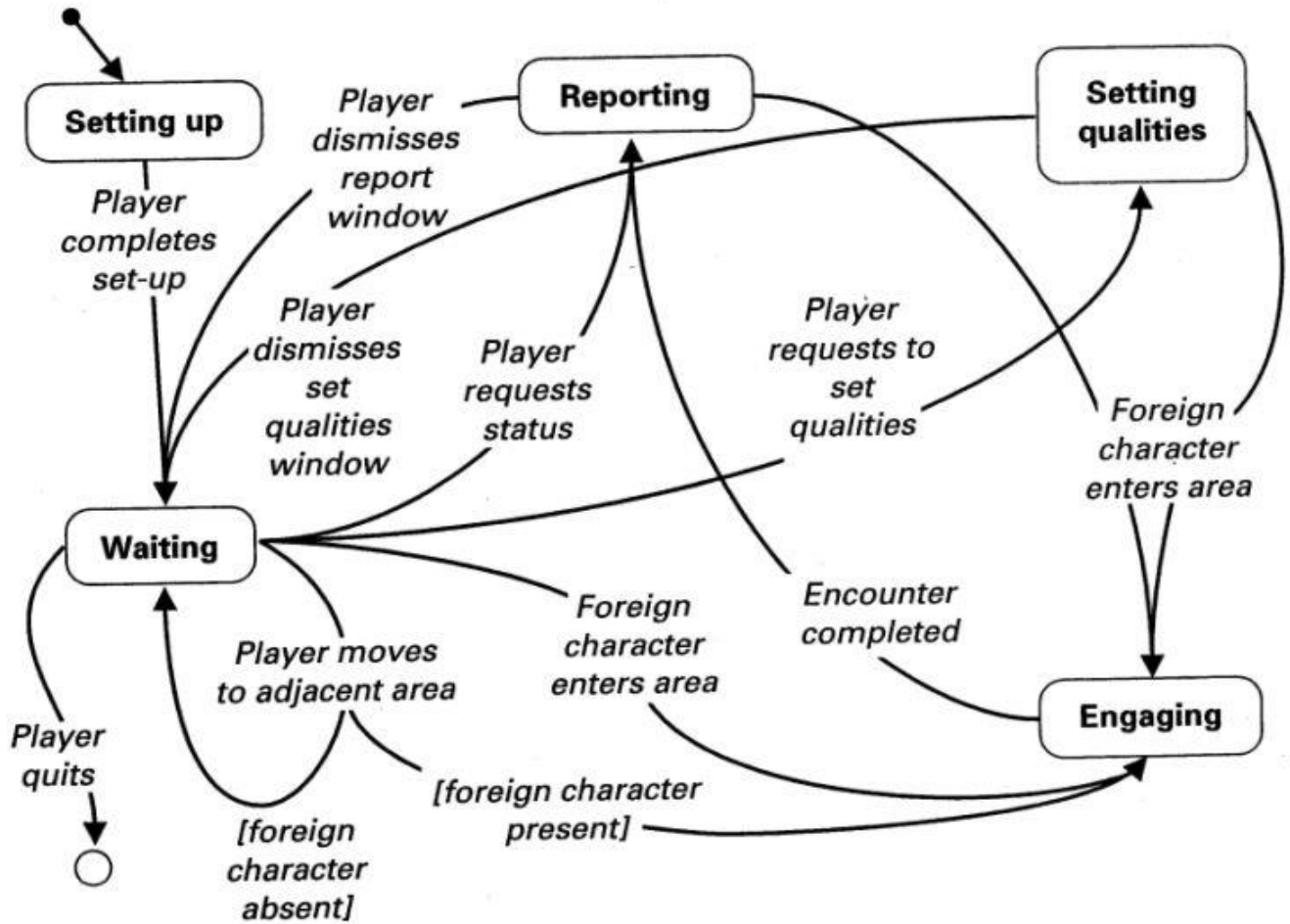
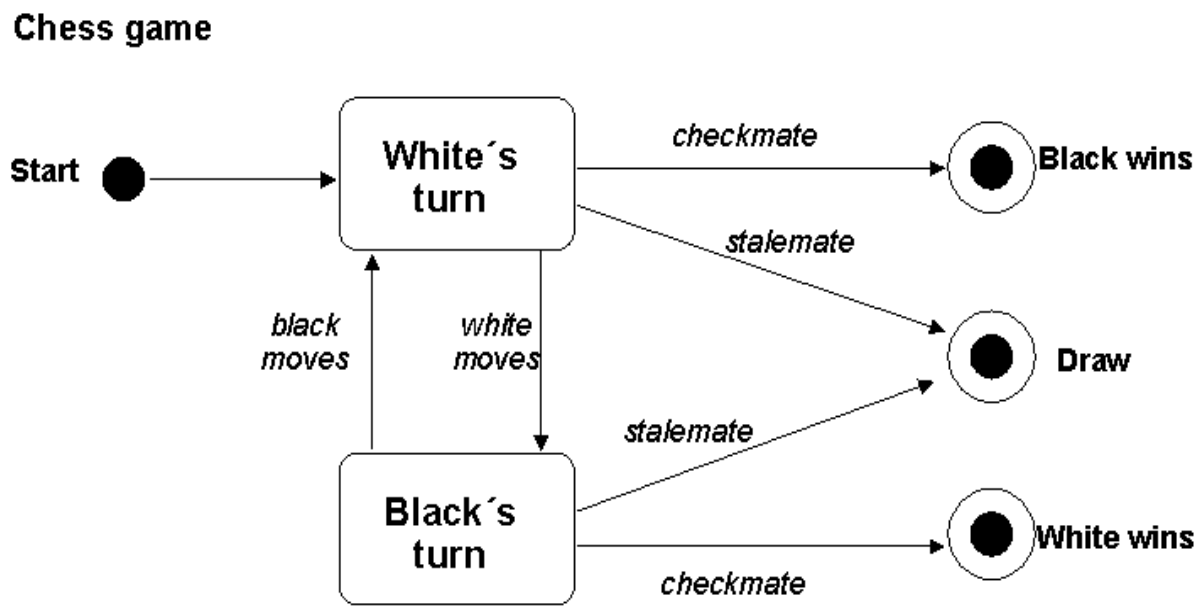
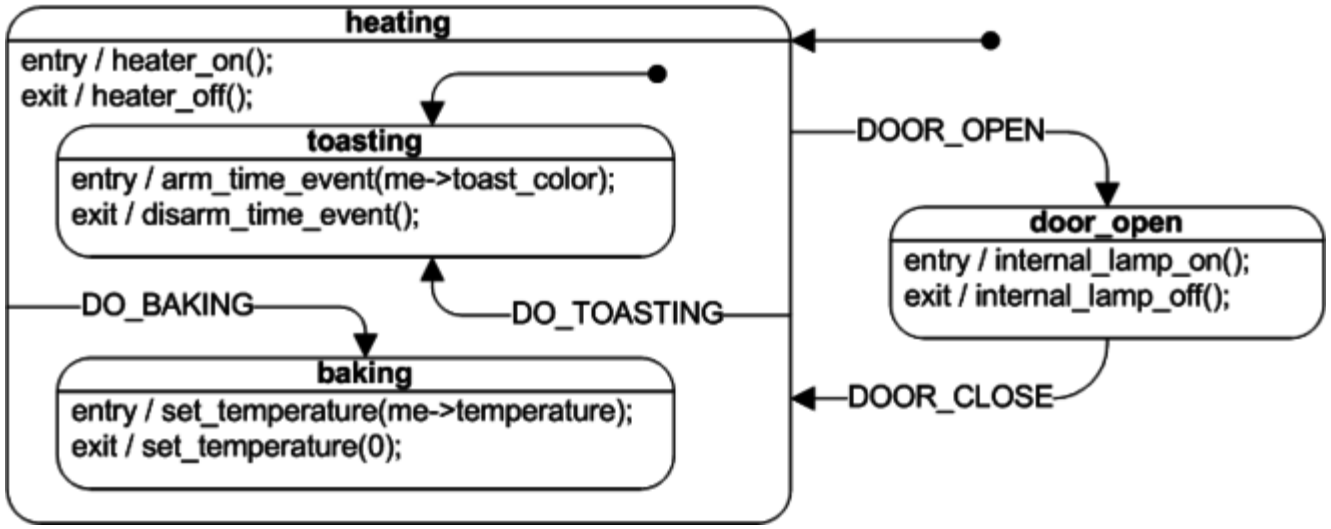


Figure 3.40 Encounter State-Transition Diagram

UML State Diagram - example



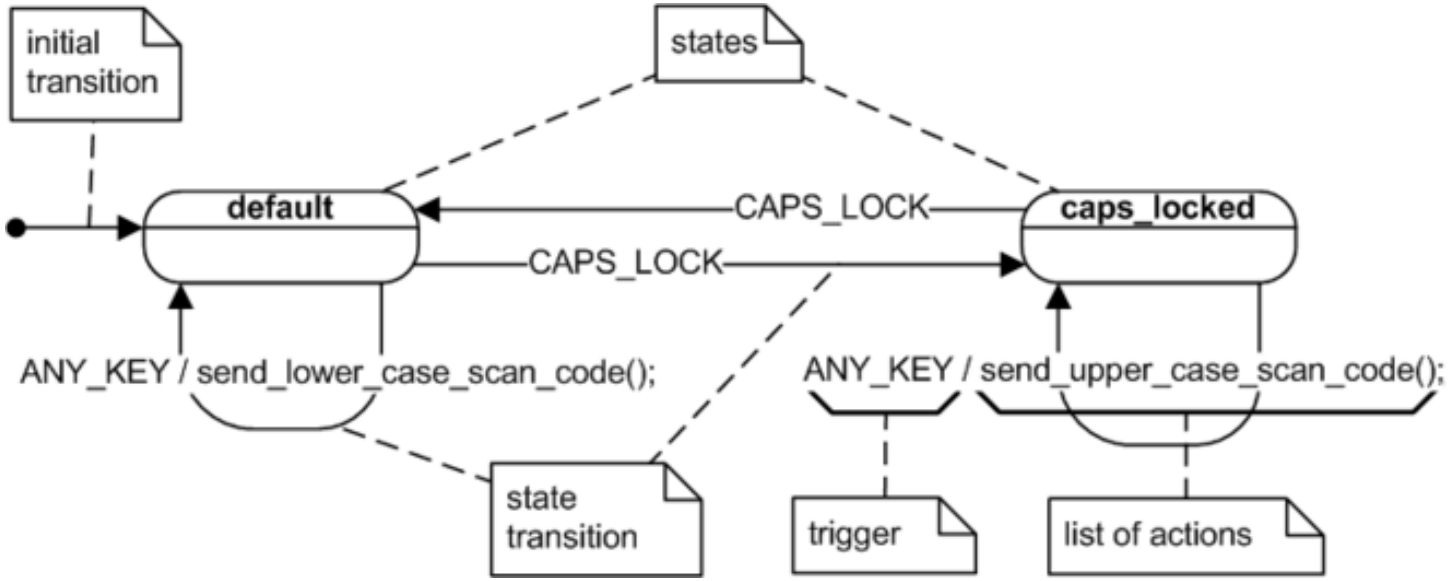


Composite state (also known as a 'nested state')

- Refers to a state that encompasses various sub-states, which are nested into it
- In the air toaster oven example, the 'heating' status of the machine represents the composite/nested state.

Substates

- Refers to a state contained within a composite state's region
- Are used to simplify complex flat state diagrams by showing that some states are only possible within a particular context
- In the toaster oven example, 'toasting' and 'baking' are sub-states in the larger 'heating' composite state.



Trigger

A message that moves an object from state to state

In the sample state diagram (keyboard), pressing CapsLock is the triggering event.

- If the keyboard is in the “default” state, pressing CapsLock will cause the keyboard to enter the “caps_locked” state.
- If the keyboard is in the “caps_locked” state, pressing CapsLock will cause the keyboard to enter the “default” state.

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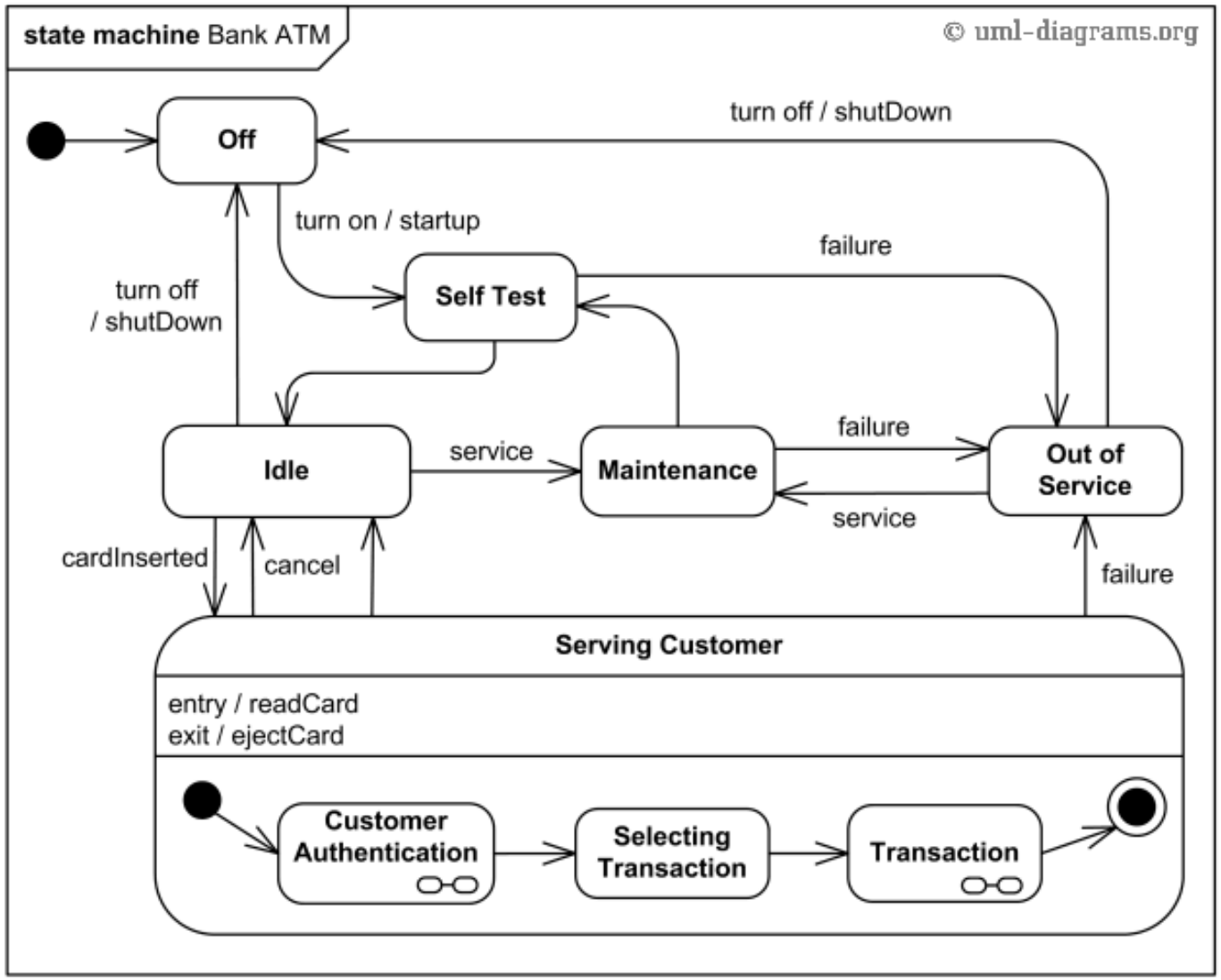

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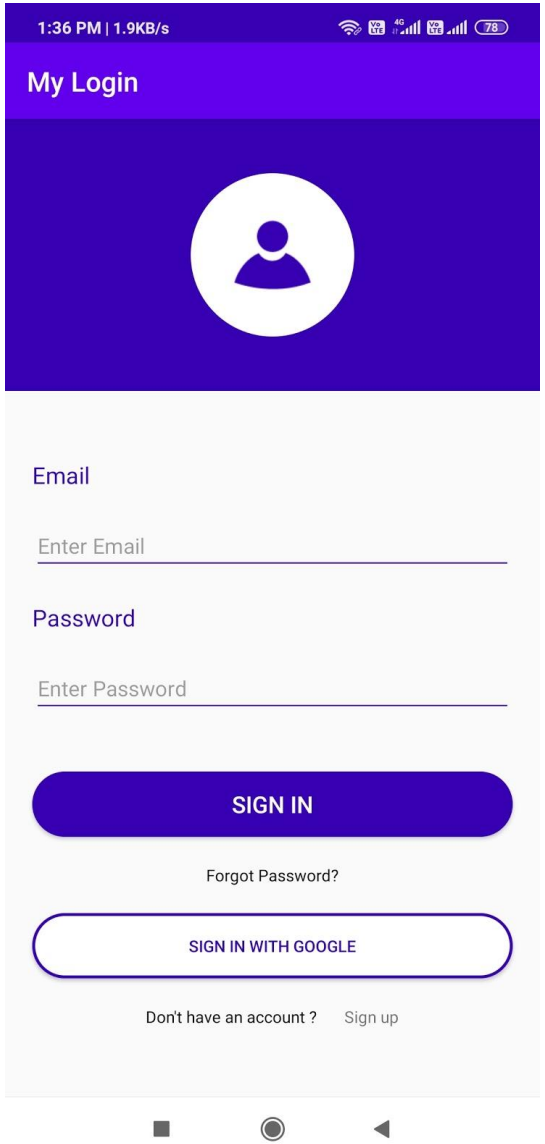
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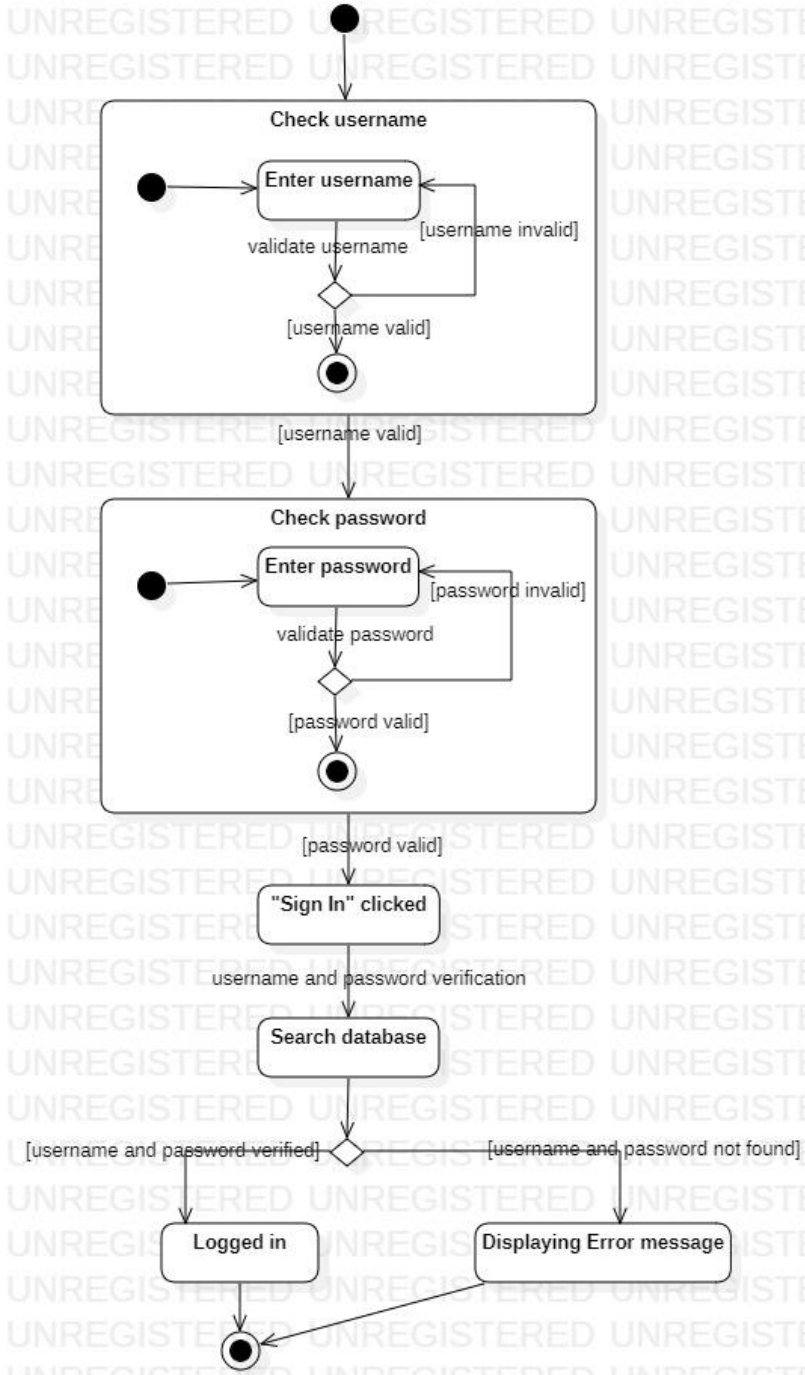
My Login
Email
Enter Email
Password
Enter Password
SIGN IN
Forgot Password?
SIGN IN WITH GOOGLE
Don't have an account ?
Sign up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Displaying Error message

End of Presentation