LOGOS
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Test Design Techniques

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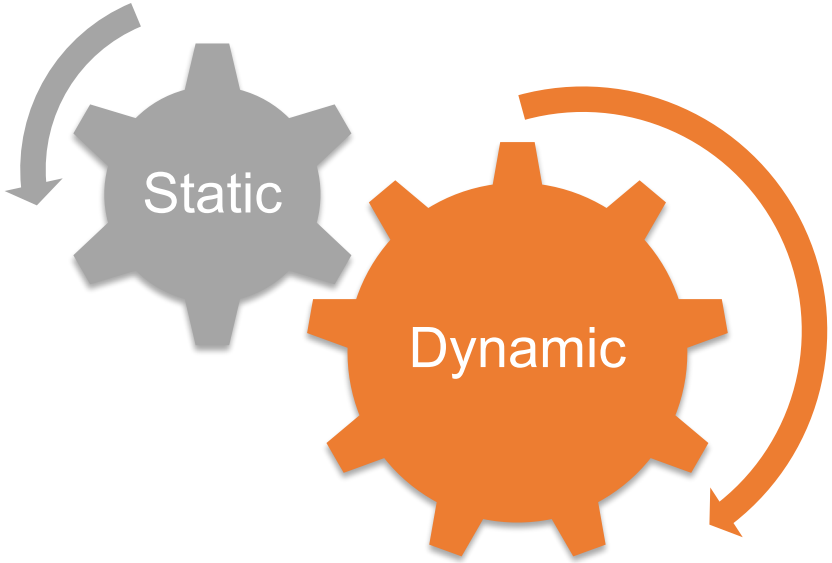
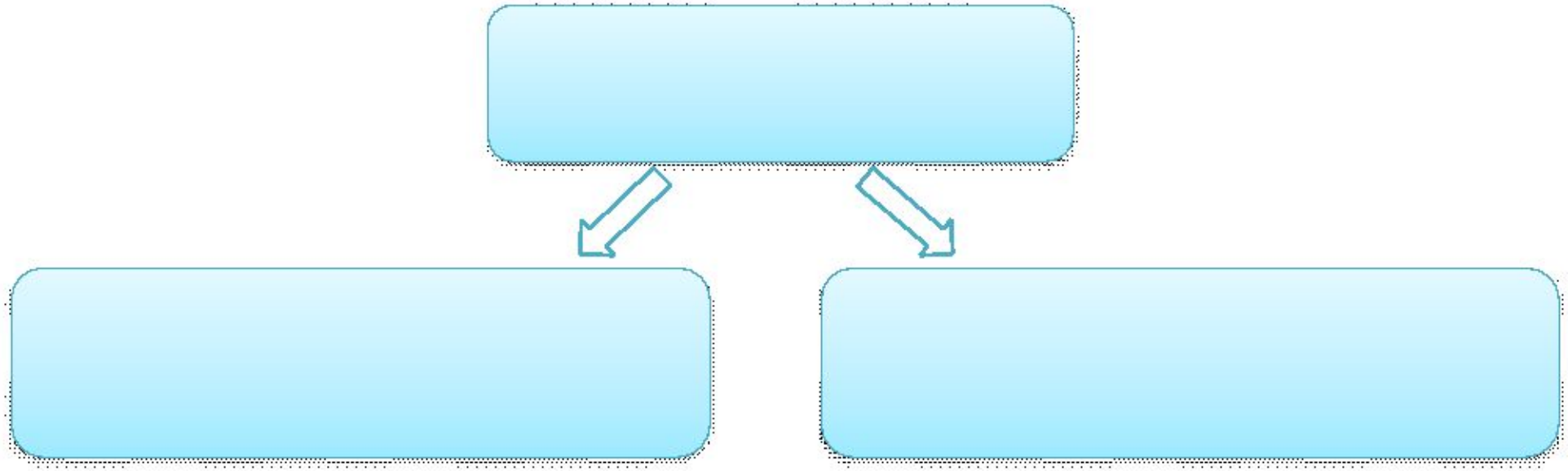
Test design techniques





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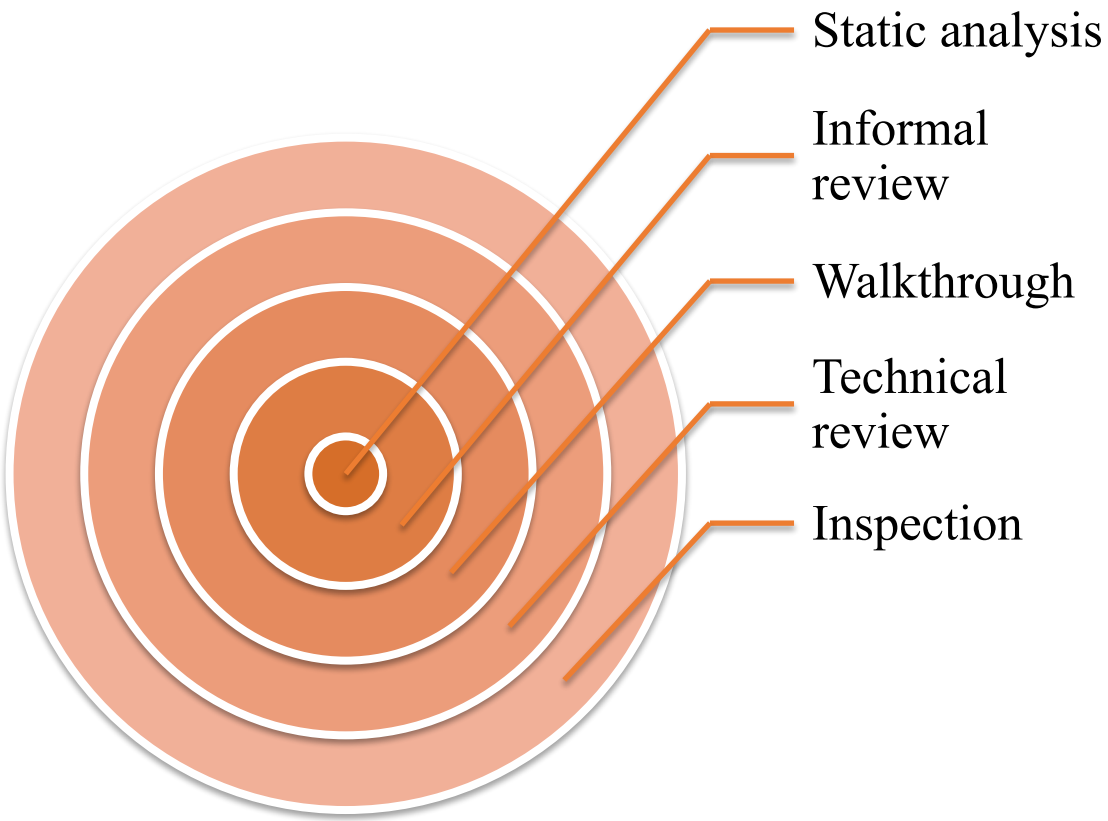
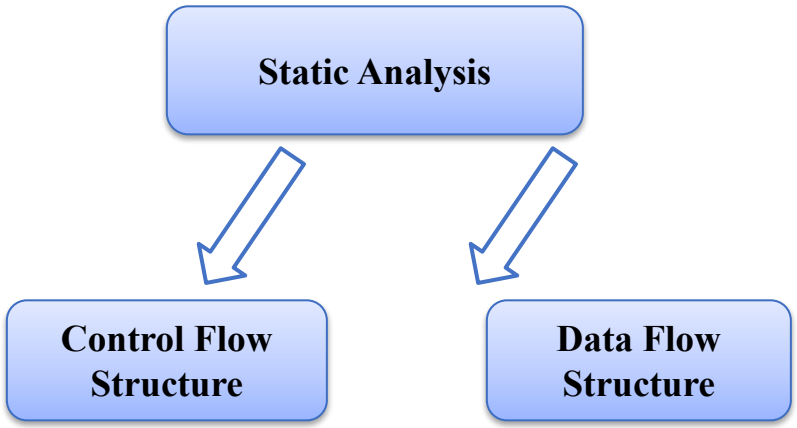
Static Testing	Dynamic Testing
Testing done without executing the program	Testing done by executing the program
Static testing is about prevention of defects	Dynamic testing is about finding and fixing the defects
Static testing involves checklist and process to be followed	Dynamic testing involves test cases for execution
This testing can be performed before compilation	Dynamic testing is performed after compilation
Cost of finding defects and fixing is less	Cost of finding and fixing defects is high
Requires loads of meetings	Comparatively requires lesser meetings

Test design techniques - Static



Called prevent errors.
They do not require direct use software.

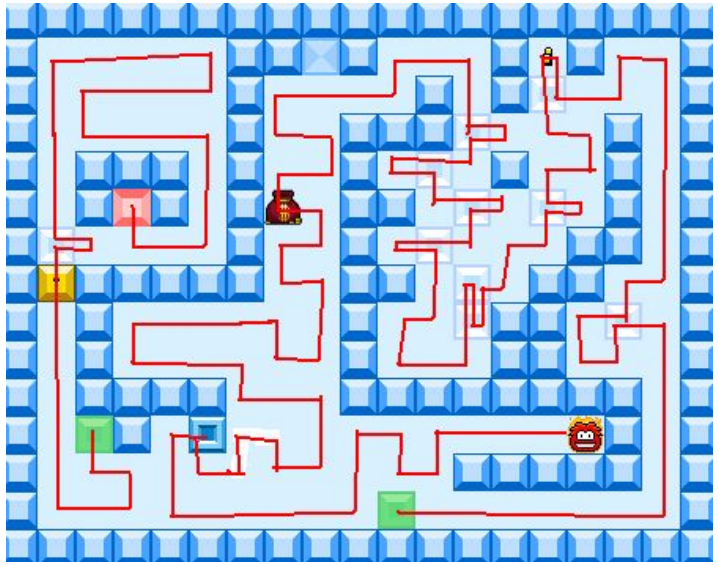


Informal review

This is one of the type of review which doesn't follow any process to find errors in the document. Under this technique, you just review the document and give informal comments on it.

Walkthrough

Walkthrough: The author of the work product explains the product to his team. Participants can ask questions if any. Meeting is led by the author. Scribe makes note of review comments.



Technical review

This review concentrates mainly on the technical document related to the software such as **Test Strategy, Test Plan** and requirement specification documents.

Inspection

The main purpose is to find defects and meeting is led by trained moderator.

This review is a formal type of review where it follows strict process to find the defects.

Reviewers have checklist to review the work products .They record the defect and inform the participants to rectify those errors.

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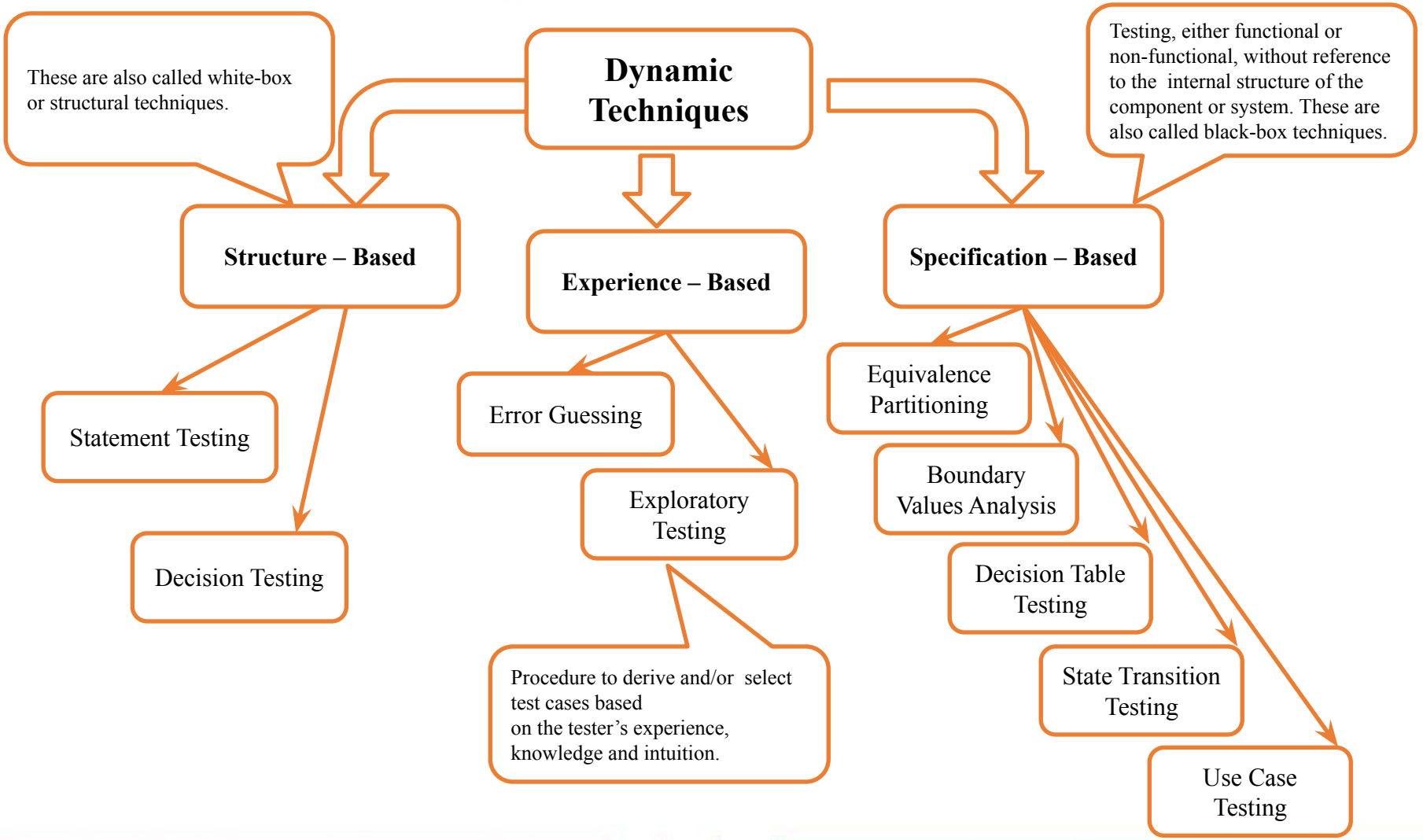
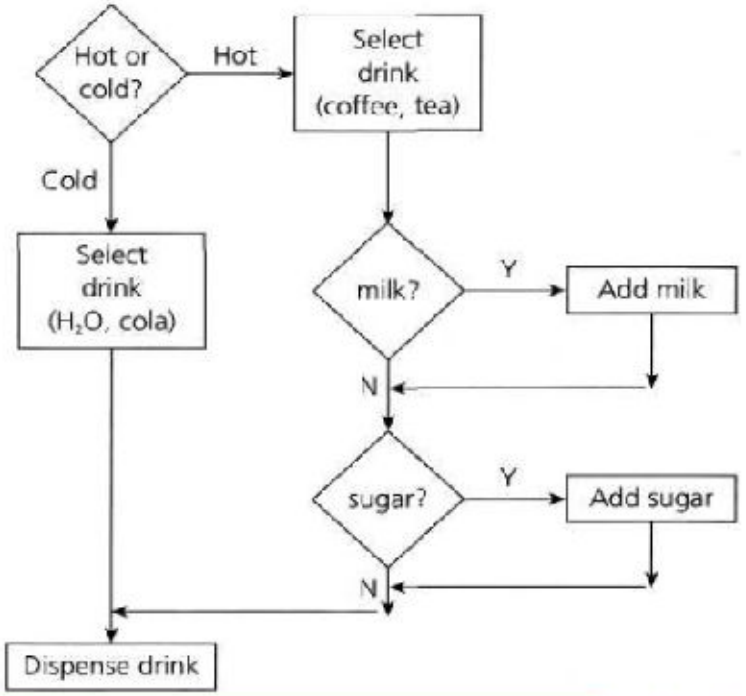
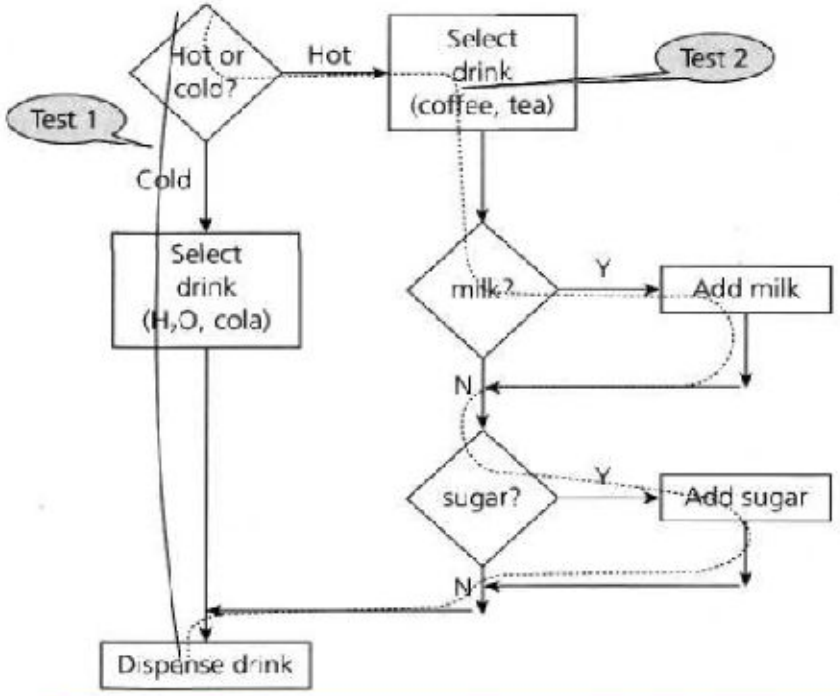
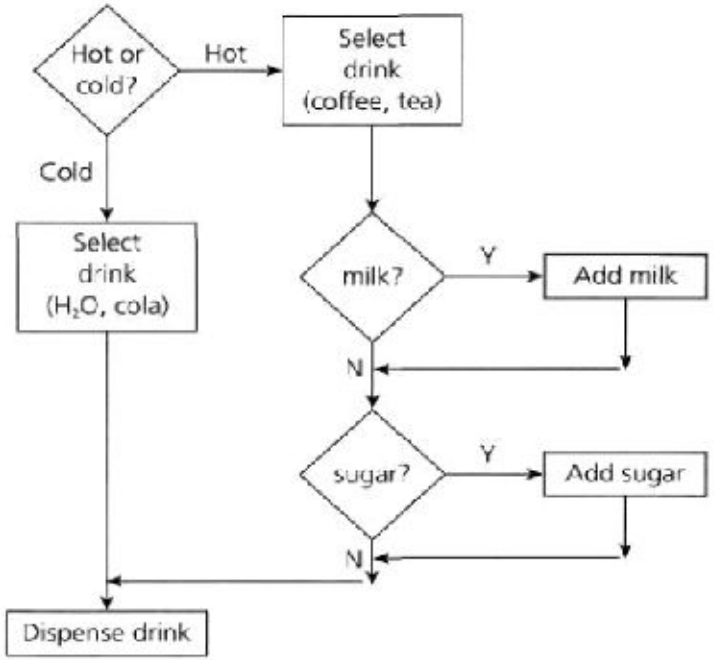



Hot or cold?
Hot
Select drink (coffee, tea)
Cold
Select drink (H_2O, cola)
milk?
Y
Add milk
N
sugar?
Y
Add sugar
N
Dispense drink


Hot or cold?
Hot
Select drink (coffee, tea)
Test 2
Test 1
Cold
Select drink (H_2O, cola)
milk?
Y
Add milk
N
sugar?
Y
Add sugar
N
Dispense drink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Add milk
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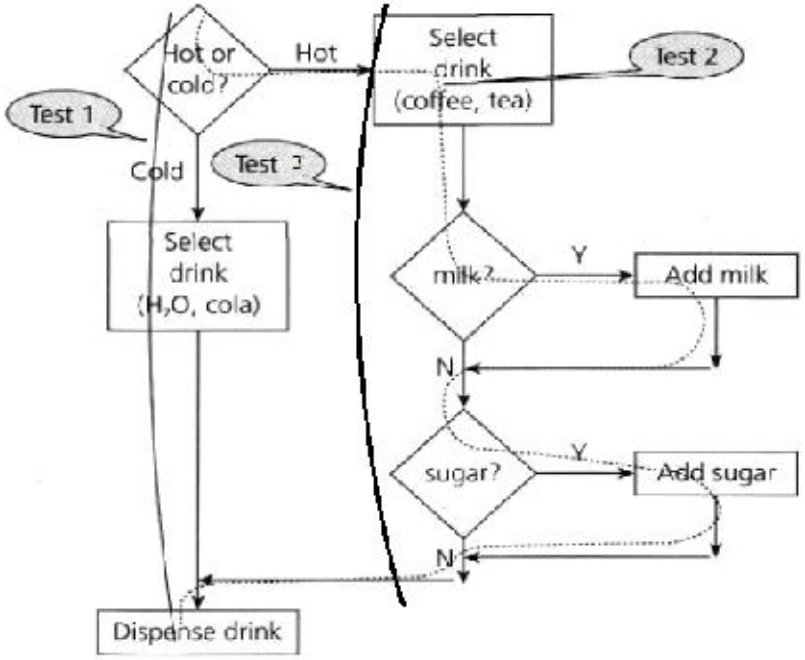
Add sugar
N
Dispense drink


Hot or cold?
Hot
Select drink (coffee, tea)
Test 1
Test 2
Test 3
Cold
Select drink (H_2O, cola)
milk?
Y
Add milk
N
sugar?
Y
Add sugar
N
Dispense drink

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Test design techniques – Specification - Based

- Equivalence partitioning
- Boundary value analysis
- Decision table
- State transition
- Use case testing

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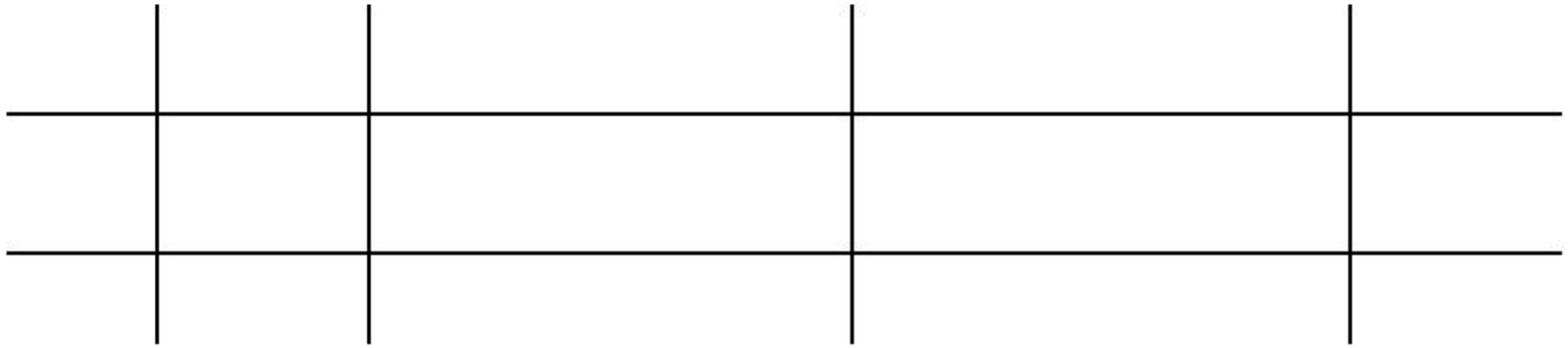

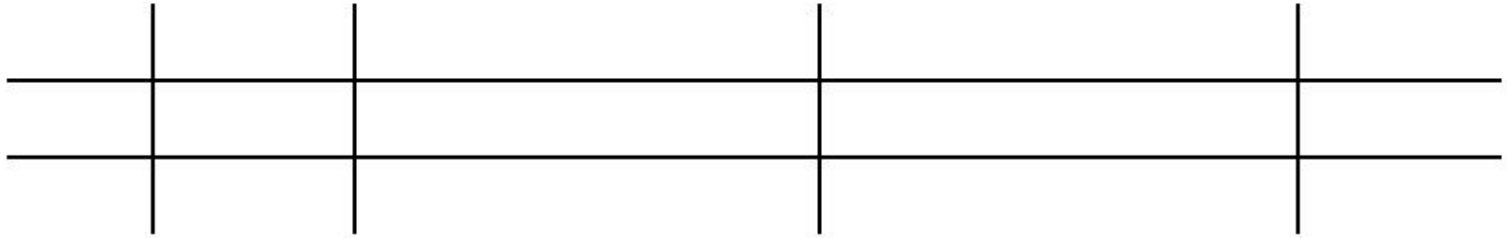

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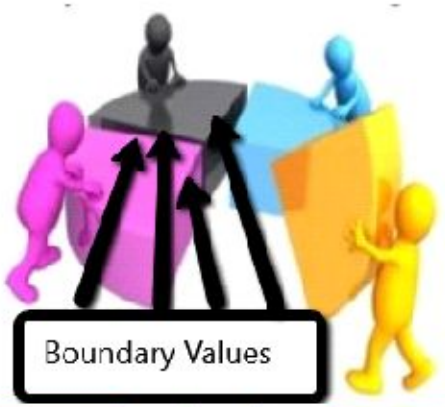

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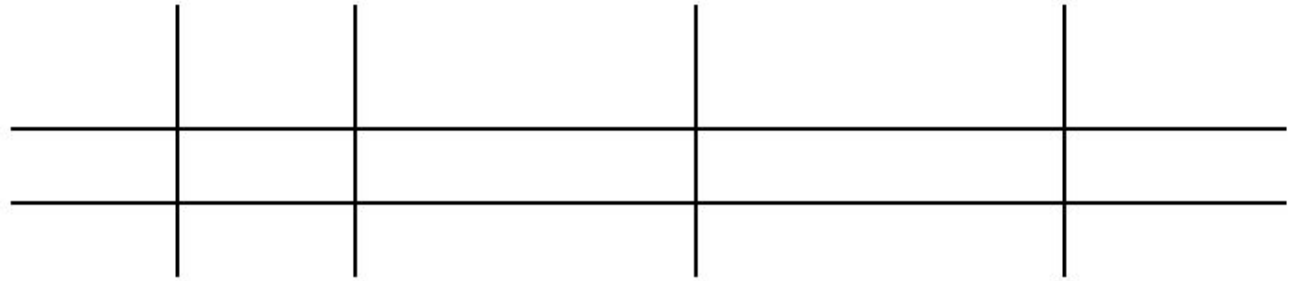

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Decision Table. Example

Causes (inputs)	R1	R2	R3	R4	R5	R6	R7	R8
'Premium rail card?	Y	Y	Y	Y	N	N	N	N
Family rail card?	Y	Y	N	N	Y	Y	N	N
Child also traveling?	Y	N	Y	N	Y	N	Y	N
Effects (Outputs)								
Discount (%)	-	-	44	34	50	0	10	0
Message*	+	+						

#	Condition	Outcome
1	A person who has 'Premium' rail & family rail card and also traveling with child under 16	Error Message
2	A person having 'Premium' rail card & family rail card & is traveling alone	Error Message
3	A person having 'Premium' rail card only & traveling with child under 16	44% discount given to the person having 'Premium' rail card & traveling with child under 16
4	A person having 'Premium' rail card only & traveling without child	34% discount given to the person having 'Premium' rail
5	A person having family rail card only & traveling with child	50% discount will be given for both tickets.
6	A person having no rail card & is traveling alone	No discount (0%).
7	A person having no rail card traveling with child under 16.	10% discount will be given for both tickets

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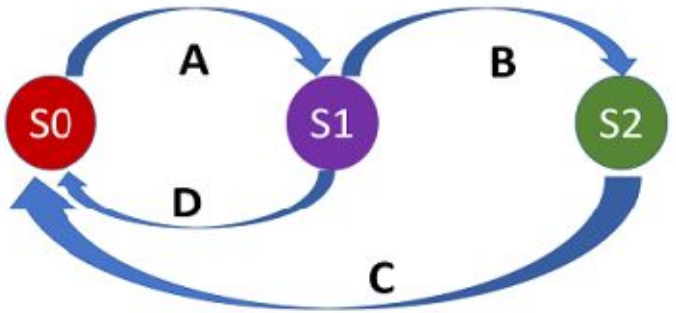
State Transition Testing



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Test design techniques – State transition

- Customer chooses Arabica coffee from coffee machine.
- He selects specific sort of coffee (in this case Arabica), and enters money.
- If Arabica coffee is available, then machine will check money.
- If Arabica coffee is not available, then customer will get proper message and his money back.
- If not enough money is entered, then machine will ask to enter more.
- If amount of money is OK, then customer will get coffee and his change in a minute.

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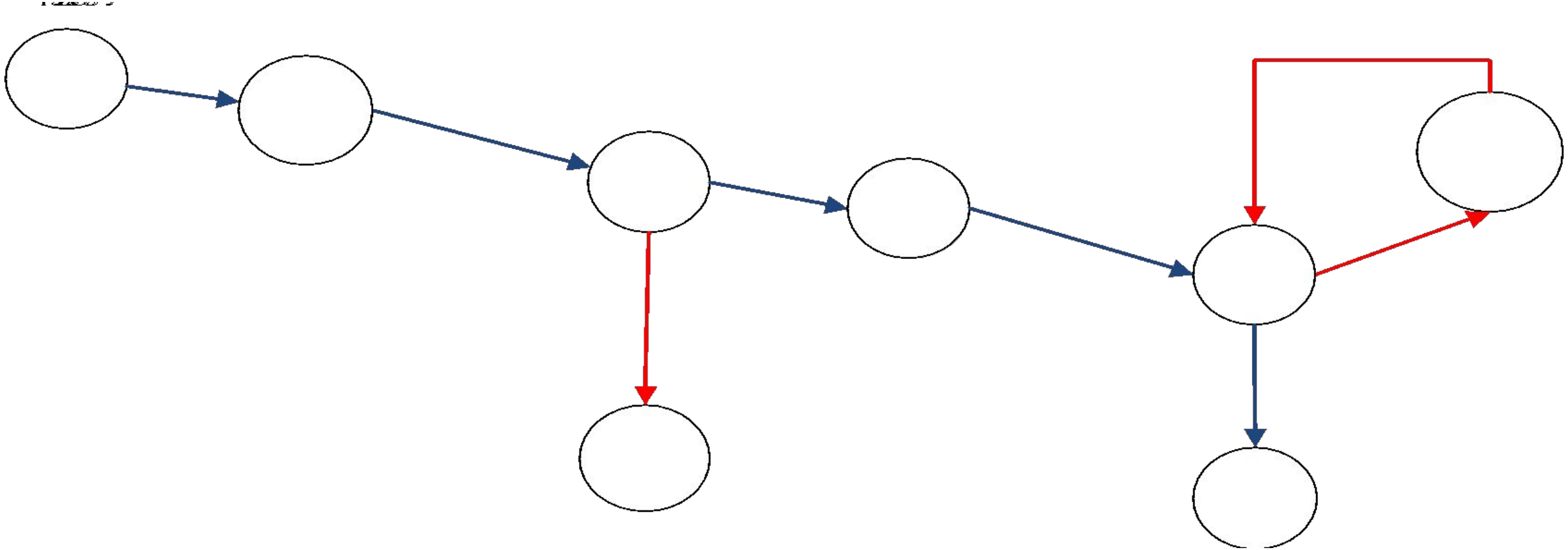
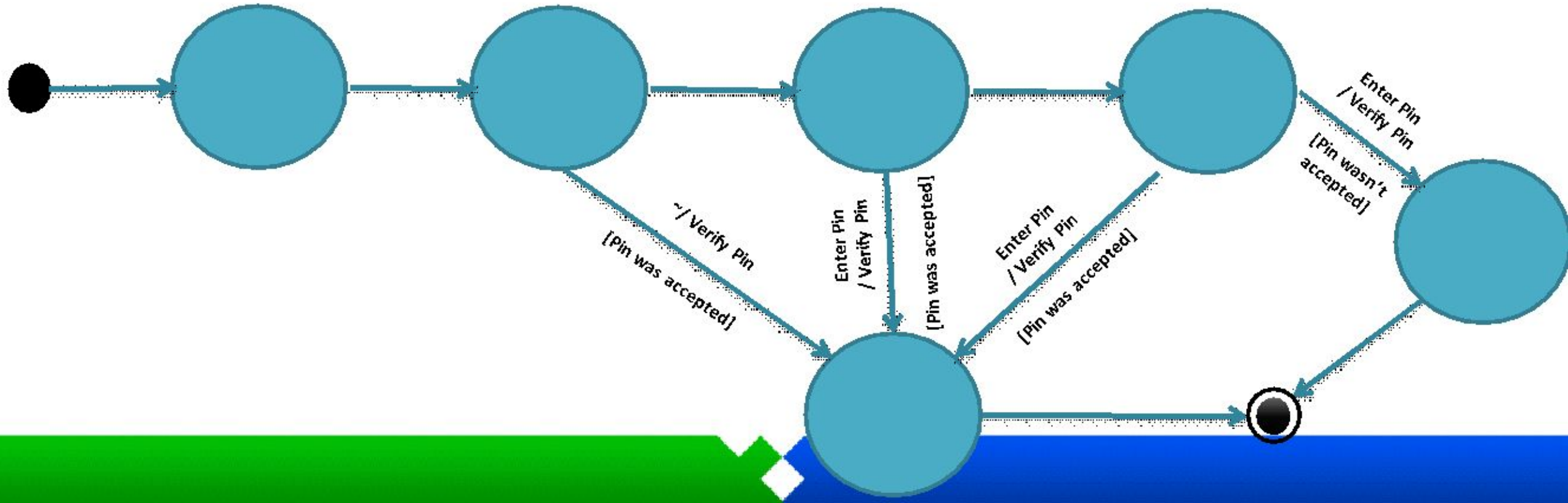
Test design techniques – State transition




~/ Verify Pin
[Pin was accepted]
Enter Pin
/ Verify Pin
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Enter Pin
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accepted]

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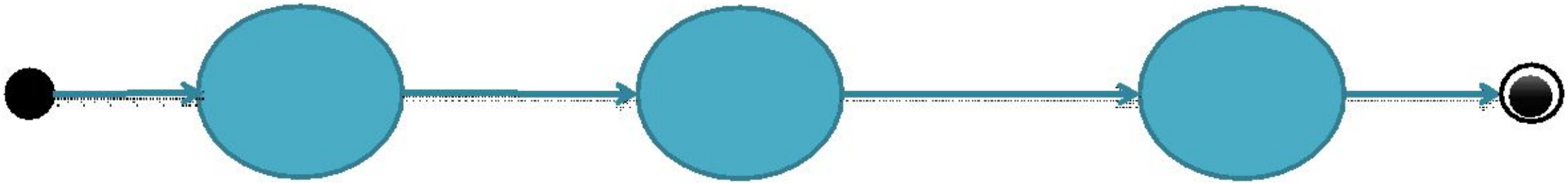

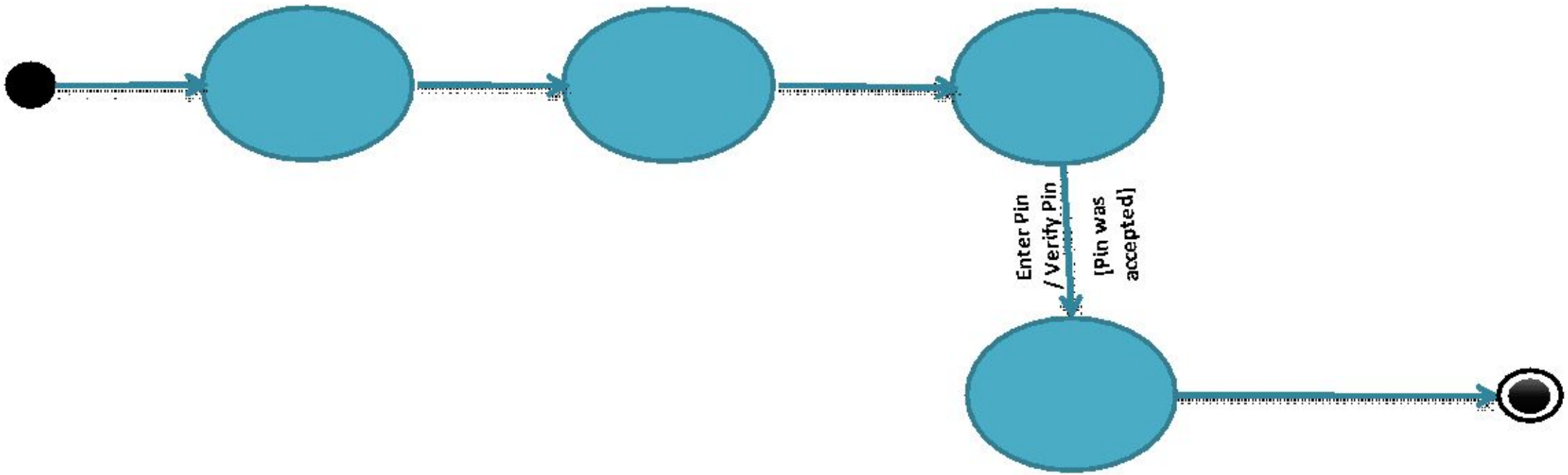
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[Pin was
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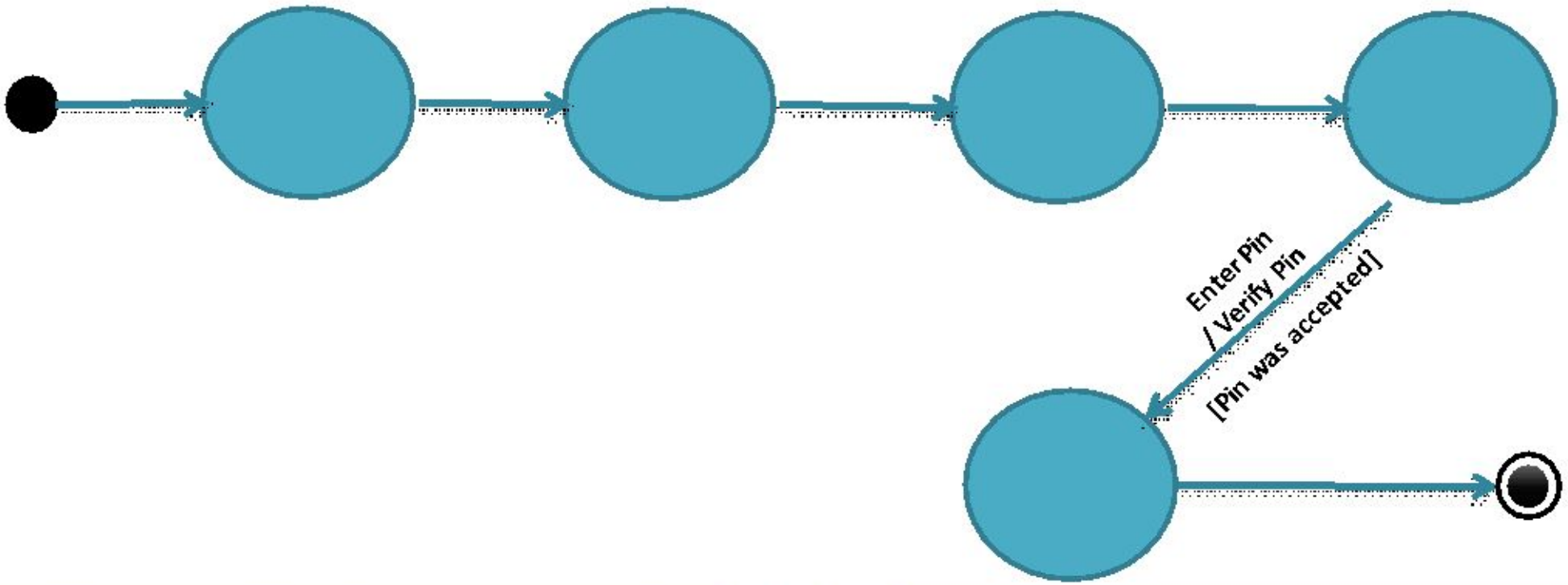
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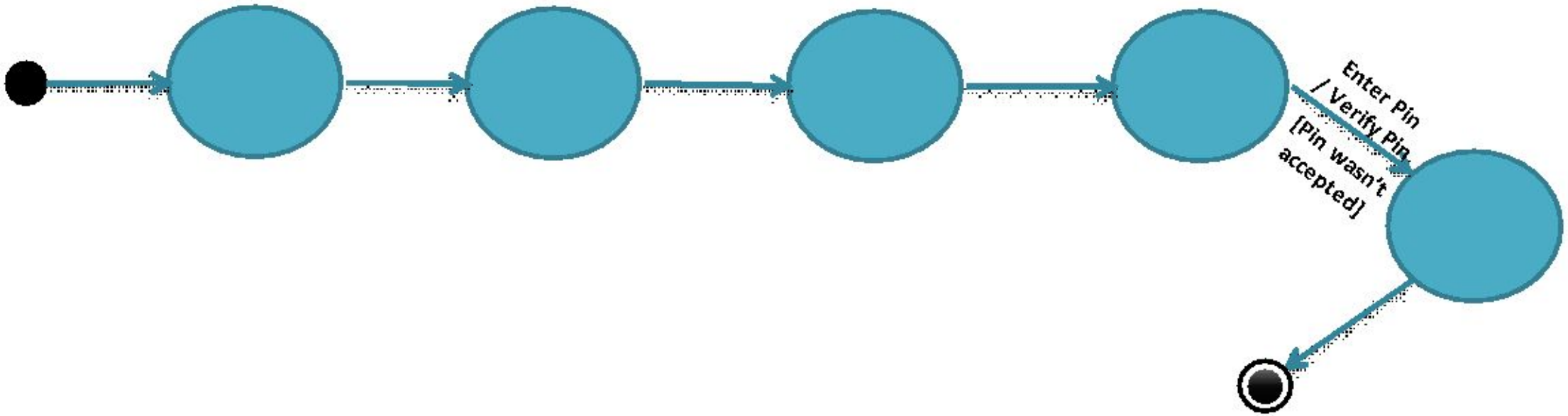
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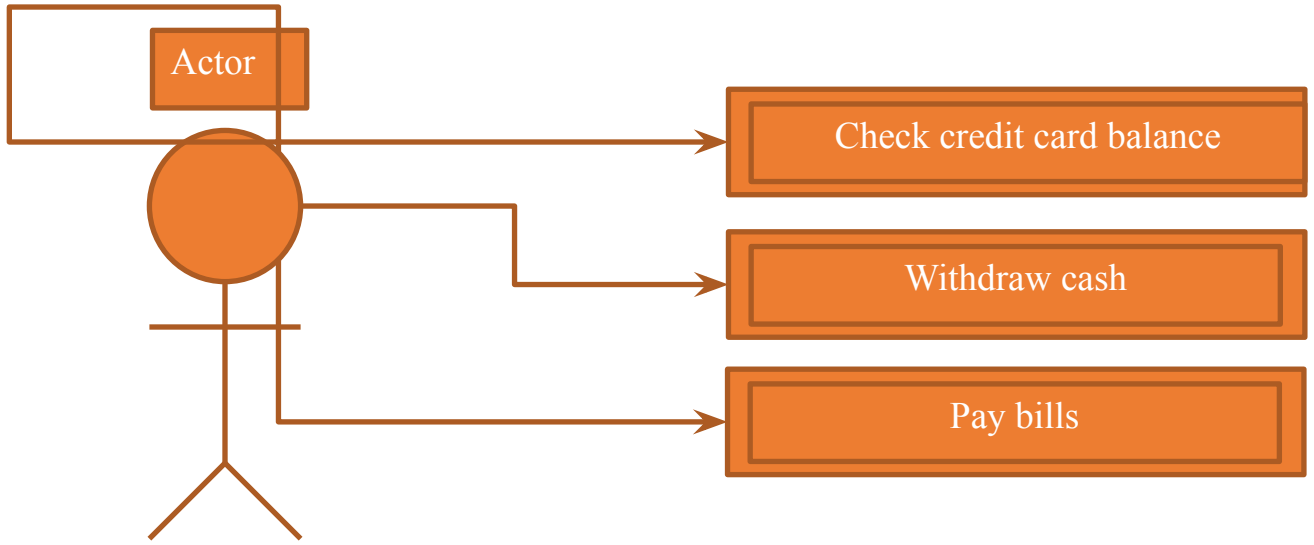
Use Case Testing. Example



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