Equivalence Partitioning:

In a system designed to work out the tax to be paid: An employee has $1000 of salary tax free. The next $500 is taxed at 10%. The next $4000 is taxed at 22%. Any further amount is taxed by 40%. Salary cannot be larger that $6000. Build equivalence classes (partitions) based on given information. Stand Out boundary values. Cover requirements above by tests (write test cases' names and objectives) based on equivalence partitioning and boundary value analysis.

	Invalid	Free	10%	22%	40%	Invalid
Class	0	<= $1000	$1001-$1500	$1501-$5500	$5501-$6000	>$6001
EP	0	900	1200	3000	5800	6100

#	Condition	Expected Result
1	Put value '0$' into input field	Error message appears "You have entered an incorrect value for the amount of tax".
2	Put value '900$' into input field	Amount is taxed by free.
3	Put value '1200$' into input field	Amount is taxed by 10%.
4	Put value '3000$' into input field	Amount is taxed by 22%.
5	Put value '5800$' into input field	Amount is taxed by 40%.
6	Put value '6100$' into input field	Error message appears "You have entered an incorrect value for the amount of tax".
7	Put value '-+#$%^' into input field	Error message appears "You have entered an incorrect value for the amount of tax".

Boundary Value Analysis:

	Invalid	Free	10%	22%	40%	Invalid
Class	0	<= $1000	$1001-$1500	$1501-$5500	$5501-$6000	>$6001
BVA	0	1 1000	1001 1500	1501 5500	5501 6000	6001

#	Condition	Expected Result
1	Put value ‘0$’ into input field	Error message appears “You have entered an incorrect value for the amount of tax”.
2	Put value ‘1$’ into input field	Amount is taxed by free.
3	Put value ‘1000$’ into input field	Amount is taxed by free.
4	Put value ‘1001$’ into input field	Amount is taxed by 10%.
5	Put value ‘1500$’ into input field	Amount is taxed by 10%.
6	Put value ‘1501$’ into input field	Amount is taxed by 22%.
7	Put value ‘5500$’ into input field	Amount is taxed by 22%.
8	Put value ‘5501$’ into input field	Amount is taxed by 40%.
9	Put value ‘6000$’ into input field	Amount is taxed by 40%.
10	Put value ‘6001$’ into input field	Error message appears “You have entered an incorrect value for the amount of tax”.

EP and BVA: Test Items

#	Test Items	Test Data
1	Verify that tax free if employee's salary $1000	1. Any number from 1 to 1000 (e.g. 900) 2. 1 3. 1000
2	Verify that tax 10% if employee's salary from $1001 to $1500	1. Any number from 1001 to 1500 (e.g. 1200) 2. 1001 3. 1500
3	Verify that tax 22% if employee's salary from $1501 to $5500	1. Any number from 1501 to 5500 (e.g. 3000) 2. 1501 3. 5500
4	Verify that tax 40% if employee's salary from $5501 to $6000	1. Any number from 5501 to 6000 (e.g. 5800) 2. 5501 3. 6000
4	Verify that error message "You have entered an incorrect value for the amount of tax" appear if employee enters incorrect data	1. Any number from <0 (e.g. -2) 2. 0 3. Any number from >6001 (e.g. 6400) 4. 6001 5. Special characters 6. Alphabetic characters
5	Verify that error message appears if employee leaves 'Tax' field empty	

Decision Table:

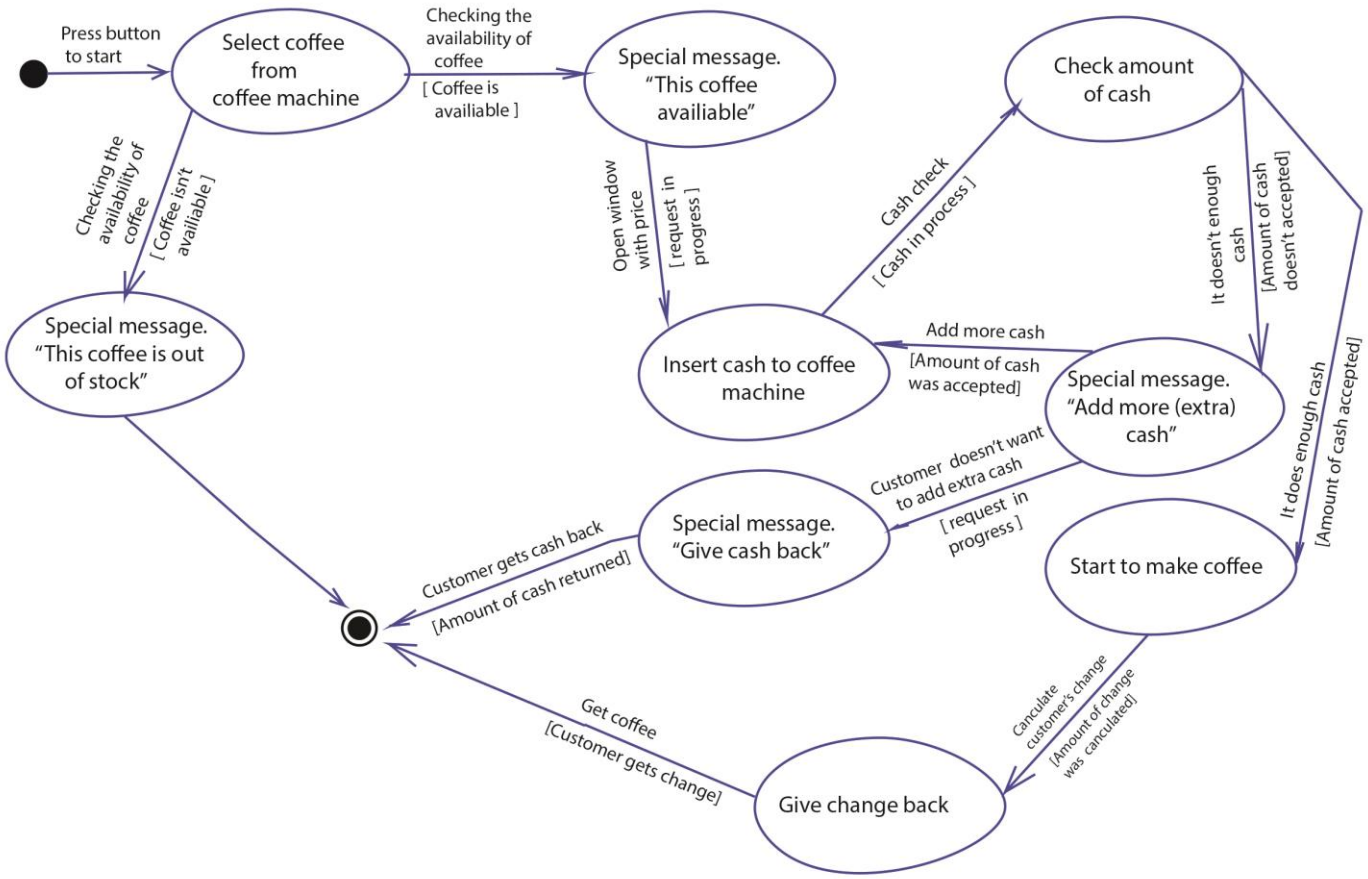
You take a loan in a bank. The bank gives you loan application, where you can enter the amount of the monthly re-payment or the number of years you want to take to pay it back (the term of the loan). You should infill only one of the proposed fields. If you enter both, then you will get an error message. Build decision table based on given information.

Causes (inputs)	R1	R2	R3	R4
Monthly re-payment	Y	N	Y	N
Number of years	N	Y	Y	N
Effects (Outputs)				
Loan	+	+	-	-

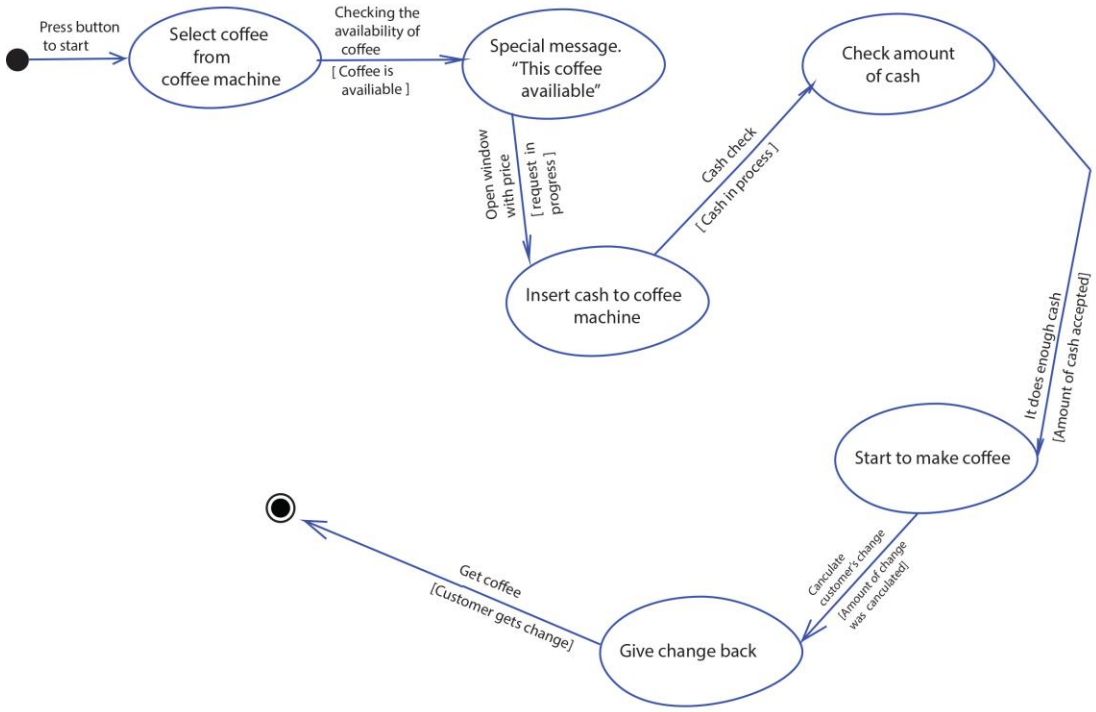
#	Condition	Outcome
1	The person chooses monthly re-payment loan	Bank granted a loan on specific monthly re-payment term
2	The person chooses loan number of years	Bank granted a loan on specific re-payment number of years
3	The person chooses loan number of years and monthly re-payment	Receive error message. Bank refused the loan
4	The person doesn't choose loan number of years and monthly re-payment	Receive error message. Bank refused the loan

State transition:

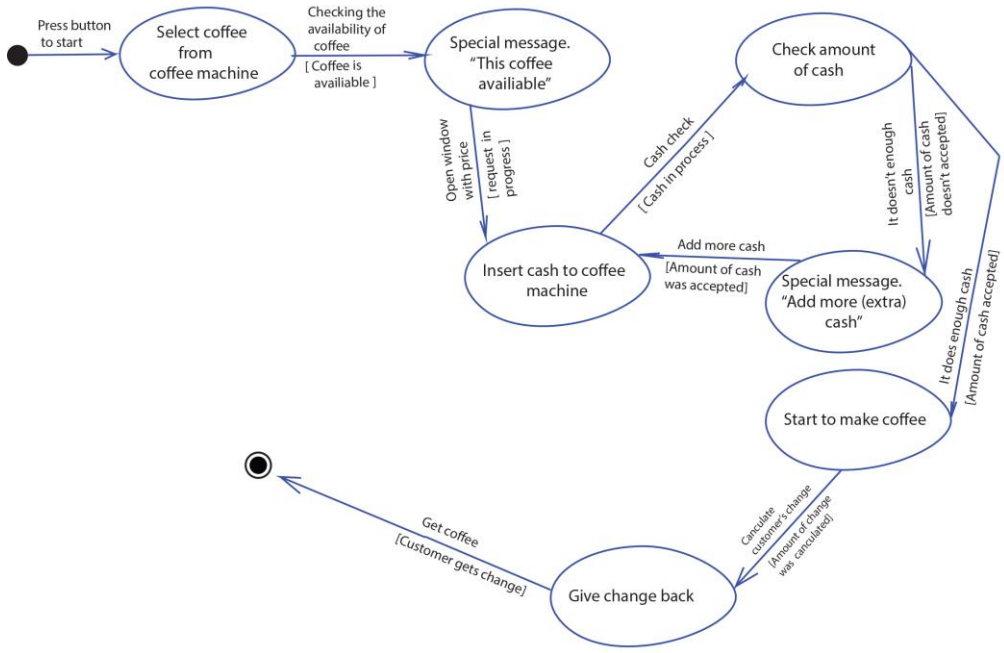
Customer chooses Arabica coffee from coffee machine. He selects specific sort of coffee (in this case Arabica), and enters money. If not enough money is entered, then machine will ask to enter more. If amount of money is ok, then machine will start doing coffee. If Arabica coffee is available, then customer will get coffee and his change in a minute. If there is no selected sort of coffee, then customer will get proper message and his money back. Build state transition diagram based on given information.



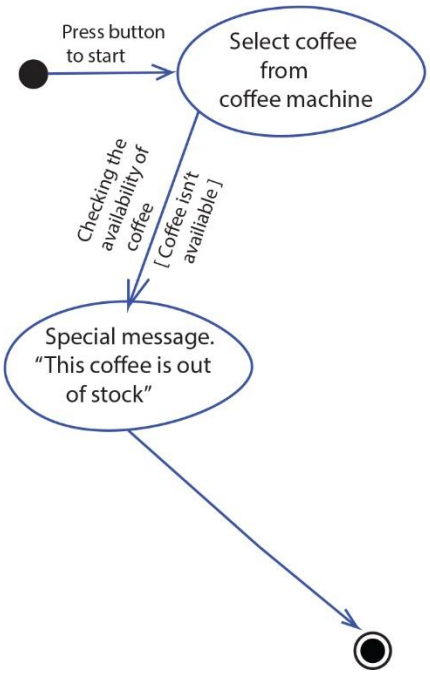
State Transition Testing



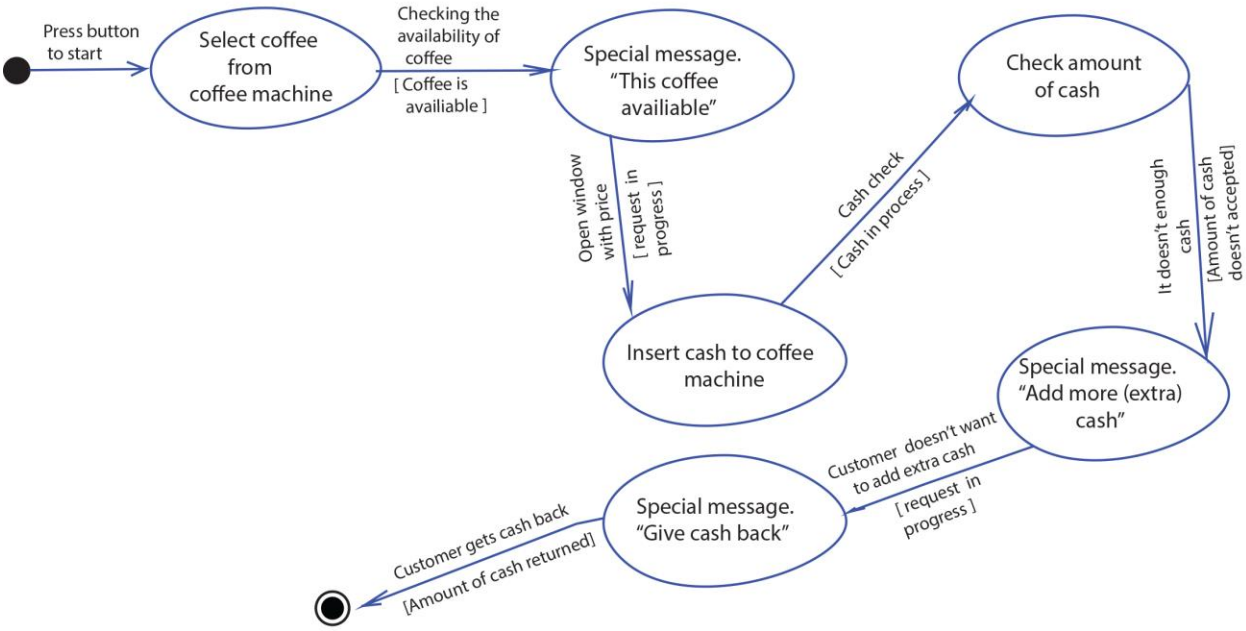
1. Verify that customer will get coffee and change if he chooses correct coffee and add correct amount of cash



2. Verify that customer will get coffee and change if he chooses correct coffee and insert extra cash to make correct amount of cash



3. Verify that customer will not get coffee if he chooses sort of coffee that out of stock



4. Verify that customer will not get coffee if he doesn't add difference to price, amount of cash added before gave back to customer