Problem #3. a. Transition - Pairing Testing

States S0, S1, S2, S3, S4

State S0		State S1		State S2		State S3		State S4	
In	Out	In	Out	In	Out	In	Out	In	Out
T1	T2	T2	T3	T3	T4	T5	T7	T8	T8
T4			T5		T6	T6	T10	T10	T9
T7									T11
T9									
T11									

Pairs	Covered Testcases	Pairs	Covered Testcases	Pairs	Covered Testcases	Pairs	Covered Testcases	Pairs	Covered Testcases
(T1, T2)	1	(T2, T3)	1	(T3, T4)	3	(T5, T7)	3	(T8, T8)	2
(T4, T2)	3	(T2, T5)	1	(T3, T6)	1	(T5, T10)	1	(T8, T9)	2
(T7, T2)	3					(T6, T7)	2	(T8, T11)	1
(T9, T2)	2					(T6, T10)	1	(T10, T8)	1
(T11, T2)	1							(T10, T9)	3
								(T10, T11)	1

Total there are **19 transition pairs** for the given EFSM Model

Test Cases

Testcase #1	Activate(8)	Start()	Credit()	Approved()	StartPump()	PumpGallon()	Stop()	Start()	Cash(20)	StartPump()	Stop()			
Covered Transitions	T1, T2, T3, T6, T10, T8, T11, T2, T5, T10, T11													
Testcase #2	Activate(8)	Start()	Credit()	Approved()	Cancel()	Start()	Cash(20)	StartPump()	PumpGallon()	PumpGallon()	PumpGallon()	Start()	Credit()	Reject()
Covered Transitions	T1, T2, T3, T6, T7, T2, T5, T10, T8, T8, T9, T2, T3, T4													
Testcase #3	Activate(8)	Start()	Credit()	Reject()	Start()	Cash(10)	Cancel()	Start()	Cash(5)	StartPump()	PumpGallon()			
Covered Transitions	T1, T2, T3, T4, T2, T5, T7, T2, T5, T10, T9													

Problem #3. b. Default - Transition Testing

Default transitions in State S0		Activate(a)	Credit()	Reject()	Cancel()	Approved()	Cash(c)	StartPump()	PumpGallon()	Stop()			
Testcase #1	Activate(8)	**Activate(2)**	**Credit()**	**Reject()**	**Cancel()**	**Approved()**	**Cash(5)**	**StartPump()**	**PumpGallon()**	**Stop()**			
Default transitions in State S1			Start()	Reject()	Cancel()	Approved()	Cash(c) [c<= 0]	StartPump()	PumpGallon()	Stop()	Activate(a)		
Testcase #2	Activate(8)	Start()	**Start()**	**Reject()**	**Cancel()**	**Approved()**	**Cash(0)**	**StartPump()**	**PumpGallon()**	**Stop()**	**Activate(2)**		
Default transitions in State S2				Start()	Credit()	Cancel()	Cash(c)	StartPump()	PumpGallon()	Stop()	Activate(a)		
Testcase #3	Activate(8)	Start()	Credit()	**Start()**	**Credit()**	**Cancel()**	**Cash(5)**	**StartPump()**	**PumpGallon()**	**Stop()**	**Activate(2)**		
Default transitions in State S3					Start()	Credit()	Reject()	Approved()	Cash(c)	PumpGallon()	Stop()	Activate(a)	
Testcase #4	Activate(8)	Start()	Credit()	Approved()	**Start()**	**Credit()**	**Reject()**	**Approved()**	**Cash(4)**	**PumpGallon()**	**Stop()**	**Activate(2)**	
Default transitions in State S4					Start()	Credit()	Reject()	Cancel()	Approved()	Cash(c)	StartPump()	PumpGallon()[(w==0)& &(cash == price*(G+1))]	Activate(a)
Testcase #5	Activate(8)	Start()	Cash(8)	StartPump()	**Start()**	**Credit()**	**Reject()**	**Cancel()**	**Approved()**	**Cash(4)**	**StartPump()**	**PumpGallon()**	**Activate(2)**
Default transitions in Start State	Start()	Credit()	Cancel()	Cash(c)	StartPump()	PumpGallon()	Stop()	Activate(a)[a<=0]	Reject()	Approved()			
Testcase #6	**Start()**	**Credit()**	**Cancel()**	**Cash(0)**	**StartPump()**	**PumpGallon()**	**Stop()**	**Activate(0)**	**Reject()**	**Approved()**			