Equivalence Partitioning Testing and Boundary Value Analysis

A system is designed to calculate the electricity cost. User can enter only an old and a new values of electricity counter and press Calc button. If data entered correctly and user consumed less than 100 kw the price of 1 kw will be 25 cents. The calculator will count 1$ per 1 kw for more than 600 kw. In another case it will count 65 cents per 1 kw. 1. Build equivalence classes (partitions) based on given information. 2. Stand Out boundary values

		OID value > NEW value	OID value =NEW value	OID value <NEW value, OID value - NEW value = 1..99 for 25 cent per 1 kilowatt	OID value <NEW value, OID value - NEW value = 100..599 for 65 cent per 1 kilowatt	OID value <NEW value, OID value - NEW value >=600 for 1$ per 1 kilowatt	OID value OR NEW value > 999 999
	OLD value	160	160	160	250	600	1300
	NEW value	150	160	250	600	1300	1 000 000
Equivalence Partitioning		error	160	90	350	700	1 000 000
	OLD value		0	100	300	800	1 000 000
	NEW value		0	101	400	1400	1 000 001
Boundary Value Analysis			0	1	100	600	1 000 000

#	Test Items	Test Data
1.	Verify that when a client puts in a calculator new value what = old value KV than the price of 1 kw will be 25 cents and = 0	Old value 160 New value 160 0
2.	Verify that when a client puts in a calculator new value< old value, and and diference between old and new value from 1 to 99 KV than the price of 1 kw will be 25 cents	Any number from 1 to 99 (e.g. 90) Old value (100,101) New value (101,200) 1 99
3.	Verify that when a client puts in a calculator new value< old value, and diference between old and new value from 100 to 599 KV than the price of 1 kw will be 65 cents	Any number from 100 to 599 (e.g. 350) Old value (300,4000) New value (400, 4599) 100 599
4.	Verify that when a client puts in a calculator new value< old value, diference between old and new value >=600 KV than the price of 1 kw will be 1$	Any number > 600 (e.g. 700) Old value 800 New value 1400 600
5.	Verify that the error message "You have entered an incorrect value" appears if the client enters incorrect data.	Diference old and new values < 0 (e.g. -1) Old value > New value New value si decimal number (e.g. 88.57/244,98) Old value OR New value > 1 000000 New or old values is alphabetic characters New or old values is special characters
6.	Verify that error message appears if client leaves calculator field empty.	Field with new or old value is empty

Decision Table

If you are a new client in the caffe you get a discount card with 0 points. Every time you make an order in a caffe you will receive points on the card. If you are existing customer and have on your discount card more than 5 000 points you will get 10% discounts every time you visit the caffe. If you have a Gift Coupon – you will get one-time 25% discount. This discount cannot be used with discount card.

Causes (inputs)	R1	R2	R3	R4	R5	R6
New client	N	Y	Y	N	N	N
Customer has more than 5 000 points	N	N	N	Y	Y	N
Customer has a Gift Coupon – get one-time *	N	Y	N	Y	N	Y
Effects (outputs)						
Discount %	0%	25%	0%	25%	10%	25%
Errors						

Causes (inputs)	R1	R3	R5	R2/R4/R6
New client	N	Y	N	Y/N/N
Customer has more than 5 000 points	N	N	Y	N/Y/N
Customer has a Gift Coupon*	N	N	N	Y
Effects (outputs)				
Discount %	0%	0%	10%	25%
Errors				

#	Condition	Outcome
1	Customer isn't new client, hasn't more than 5000 points and hasn't Gift Coupon	0% discounts
2	Customer is new client, hasn't more than 5000 points and hasn't Gift Coupon	0 % discounts
3	Customer isn't new client, has more than 5000 points and hasn't Gift Coupon	10% discounts
4	New client or customer with more then 5 000 points who has Gift Cuopon	25 % discounts and points add for discount card

3. **State transition**

User is doing an order on the web-store. He selects some goods from the catalog and clicks on “Add to cart” button.
If one/more selected goods aren’t available user will get the corresponding message and will be asked to correct the selection.
If all selected goods are available user will get message: “Do you want to go to shopping cart? Yes/No”.
If the user press “No” button, he will stay on the catalog of goods to continue the selection.
To complete the order user should click “Yes” and after redirection to the Cart confirm the order by entering his phone number and delivery address and clicking on “Confirm the order” button.
If entered data is correct the user will get the message on his phone with short info about the order. If some entered data is incorrect, user will get an error message and will be asked to Confirm the order again.
Cover requirements above by tests (write test cases’ names and objectives) based on state transition analysis