Module and Functional Testing
FunNums
Foul Owls
December 2, 2017

Module: BalloonGame::satisfiesInequality
Tested By: Austin
Equivalence Classes

Equivalence Class	Description	Possible Values
EClt	Less than target	For target is ½:, ¼, 1/8
ECgt	Greater than target	For target is ½:, ¾, 5/8
ECet	Equal to target	For target is ½:, 2/4, 4/8
ECgte	Less than or equal to target	For target is ½:, 2/4, 3/8
ECelte	Greater than or equal to target	For target is ½:, 2/4, 5/8
ECv	Valid Inputs	0 < val < 1
ECiv	Invalid Inputs	Val <=0, val >= 1

Test Cases:

Equivalence Class	Input		Expected Output
	Inequality	Fraction	
EClt AND ECv	<	1/2	True
ECgt AND ECv	<	1/2	False
ECet AND ECv	<	1/2	False
ECgte AND ECv	<	1/2	False
ECelte AND ECv	<	1/2	True
EClt AND ECv	<	1/2	Error
ECgt AND ECv	<	1/2	Error
ECet AND ECv	<	1/2	Error
ECgte AND ECv	<	1/2	Error

ECelte AND ECv	<	1/2	Error

Module: BalloonGame::FractionNumberGenerator
Tested By: Cesar

Equivalence Classes:

Equivalence Class	Description	Possible Values
ECgt,eq	Game Type Involves Equality	**Game Type**: “LEQ_game”, “GEQ_game”, “EQ_game”
ECgt,neq	Game Type Does Not Involves Equality	**Game Type:** “LT_game”, “GT_game”
ECgt,error	Invalid Game Type Specified	**Game Type:** null, 5, “EQ_games**s**”...
ECta,eq	Target Fraction Has Valid Known Equivalent Fractions	**Target:** ½, ¼, ⅓, ⅕, ⅘, ⅔, ⅖, ¾, ⅗ Or Equivalent fraction
ECta,neq	Target Fraction Does Not Necessarily Have Known Equivalent Fractions	**Target:** Any randomly generated fraction (Numerator ranging from 1 to13 , Denominator ranging from 2 to 14)

Test Cases:

Equivalence Class	Input		Expected Output
	GameType	**Target**	**New Target Fraction**
ECgt,eq	“LEQ_game”	N/A	Fraction that is a member of ECtat,eq
ECgt,neq	“GT_game”	N/A	ECta,neq
ECgt,error	Int 10	N/A	Error

	GameType	Target	New Fraction To Compare With
ECgt,eq AND ECta,eq	“EQ_game”	1/2	Equivalent fraction of the target, that is also a member of ECta,eq
ECgt,eq AND ECta,neq	“LT_game”	3/11	Error
ECgt,neq AND ECta,eq	“EQ_game”	target	Error
ECgt,neq AND ECta,neq	“LT_game”	target	Any fraction member of ECta,neq

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Module: OwlGame::ExpressionEvaluator::evalExpr
Tested By: Derek
Equivalence Classes:

Equivalence Class	**Description**	**Possible Values** N = integer from 1 to 25 Op = { +, -, /, * }
ECvalidExpr	Valid expressions are those that for each operator, have exactly 1 number surrounding it.	N Op N, N Op N Op N Op N, N Op N Op N Op N
ECinvalidExpr	Invalid expressions are those that are of length 1, those that contain >= 2 numbers in a row, those that contain >=2 operators in a row, those that don’t have exactly 1 number surrounding each operator.	N, N N, Op Op Op N, N Op N N Op N, N Op Op N Op N

Test Cases:

Equivalence Class	**Input (space separated strings of numbers and operators)**	**Expected Output**
ECvalidExpr	“1 + 2”	3
ECvalidExpr	“2 * 3 * 4”	24
ECvalidExpr	“1 / 4 + 2”	2
ECvalidExpr	“4 / 1 * 3 * 4”	64
ECvalidExpr	1 - 1 - 1 - 1	-2
ECinvalidExpr	“”	null
ECinvalidExpr	“1”	null
ECinvalidExpr	“+ 1”	null
ECinvalidExpr	“3 * 4 / / 5”	null
ECinvalidExpr	“+ + *”	null
ECinvalidExpr	“10 - - 3”	null

Module: GameView::updateGameTimer
Tested By: Jacob
Equivalence Classes

Equivalence Class	Description	Possible Values
ECpos	Input for timeToAdd is a positive number	1, 2, 3, 4, 5, etc
ECneg	Input for timeToAdd is a negative number	-1, -2, -3, -4, -5, etc
ECgt	Input for timeToAdd is greater than current time	When current time is 4: 5, 6, 7, etc

EClt	Input for timeToAdd is less than current time	When current time is 4: 3, 2, 1, -1, -2, etc

Test Cases:

Equivalence Class	**Input**		**Expected Output**
	Number	current time	
ECpos AND ECgt	+4	5	Current time = 9
ECpos AND EClt	+4	3	Current time = 7
ECneg AND ECgt	-4	5	Current time = 1
ECneg AND ECls	-4	-5	Error

Module: BubbleGame::checkTouchRadius
Tested by: Alan
Equivalence Classes:

Equivalence Class	**Input**	**Possible Value** (If center of circle is (0,0) and its radius is 3)
ECxgteq	x value is outside the range of the circle or is exactly on the rim of the circle	3,4,5,6,....etc -3,-4,-5,-6..etc
ECygteq	y value is outside range of the circle outside the range of the circle or is exactly on the rim of the circle	3,4,5,6,....etc -3,-4,-5,-6..etc
ECxlt	x value is inside the range of the circle	-2,-1,0,1,2
ECylt	y value is inside the range of the circle	-2,-1,0,1,2
ECxerror	Invalid x input	Any value that is not an integer: 0.15

ECyerror	Invalid y input	Any value that is not an integer: 0.15

Test Cases:

Equivalence Class	**Input**		**Expected Output** (If center of circle is (0,0) and its radius is 3)
	x	**y**	
ECxgteq AND ECygteq	4	4	false
ECxgteq AND ECylt	4	0	false
ECxltE AND Cygteq	0	4	false
ECxlt AND ECylt	0	0	true
ECxgteq AND ECyerror	4	0.15	error
ECxltE AND ECyerror	0	0.15	error
ECxerror AND Cygteq	0.15	4	error
ECxerror AND ECylt	0.15	0	error