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Project 1 Test plan

Calling Function	Variable	Test case	Input values	Driver functions	Expected outcomes	Actual outcomes
mainMenu	userChoice	Negative number Out of bounds: High Out of bounds: Low First digit: Letter First digit: Non-numeric First digit: Blank Space Multiple digits	Input < 0 Input > 2 Input < 1 Input == a Input == / Input == 3 Input == Input == 123	antValidate() mainMenuValidate do if while()	Sentinel variable prevents while-loop exit. Continuous loop prompts user to re-enter different value.	Sentinel variable prevents while-loop exit. Continuous loop prompts user to re-enter different value.
		Correct range	Input == 1		Integer 1 or 2 is returned to calling function.	Integer 1 or 2 is returned to calling function.
gameInfo	boardRows	Extremely large number	Input == 1000	antValidate() boardInfoValidate() do if while()	A large vertical game board is produced. Iterations of Langton's ant are not impacted.	Game board iterations past a certain point (around 478) are no longer accessible when attempting to scroll through entire output.
		Negative number	Input < 0		Sentinel variable	Sentinel variable
		Out of bounds: Low	Input < 1		prevents while-loop	prevents while-loop
		First digit: Letter	Input == a		exit. Continuous	exit. Continuous
		First digit: Non-numeric	Input == /		loop prompts user	loop prompts user

		First digit: Blank	Input == 3		to re-enter different	to re-enter
	-	Space	Input ==		value.	different value.
		Small number	Input == 1		A game board of height 1 is produced. Does not impact game operation.	A game board of height 1 is produced. Does not impact game operation.
		Negative number	Input < 0		Sentinel variable	Sentinel variable
	-	Out of bounds: Low	Input < 1	prevents wh exit. Continu	prevents while-loop	prevents while-loop
	=	First digit: Letter	Input == a		exit. Continuous	exit. Continuous
	=	First digit: Non-numeric	Input == /		loop prompts user	loop prompts user
	•	First digit: Blank	Input == 3		to re-enter different	to re-enter
	=	Space	Input ==		value.	different value.
boar	rdCols	Small number	Input == 1	width 1 is pro Does not imp game operati A large horizo game board is produced. Ite of Langton's a not impacted Sentinel varia prevents whil exit. Continuo loop prompts to re-enter di value. 1 iteration of Langton's ant	A game board of width 1 is produced. Does not impact game operation.	A game board of width 1 is produced. Does not impact game operation.
		Extremely large number	Input == 1000		A large horizontal game board is produced. Iterations of Langton's ant are not impacted.	Formatting is unreadable. However, the program runs.
	userSteps	Negative number	Input < 0		Sentinel variable	Sentinel variable
		Out of bounds: Low	Input < 1		prevents while-loop	prevents while-loop
		First digit: Letter	Input == a		exit. Continuous	exit. Continuous
		First digit: Non-numeric	Input == /		loop prompts user	loop prompts user
user		First digit: Blank	Input == 3		to re-enter different	to re-enter
		Space	Input ==			different value.
		Small number	Input == 1		1 iteration of Langton's ant is output to consol.	1 iteration of Langton's ant is output to consol.

		Extremely large number	Input == 1000		1000 iterations of Langton's ant are output to consol.	1000 iterations of Langton's ant are output to consol.
		Out of bounds: Low	Input < 1		·	Sentinel variable
		First digit: Letter	Input == a		Sentinel variable prevents while-loop exit. Continuous loop prompts user to re-enter different value.	prevents while-loop
		First digit: Non-numeric	Input == /			exit. Continuous
		First digit: Blank	Input == 3			loop prompts user
		Space	Input ==			to re-enter
	startCol	Out of bounds: High	Input > boardCols			different value. Sometimes, user prompt iterates twice.
		Correct range	boardCols <= Input >=1		Ant character placed on appropriate spot on game board.	Ant character placed on appropriate spot on game board.
		Out of bounds: Low	Input < 1		gaine board.	Sentinel variable
		First digit: Letter	Input == a	_		prevents while-loop
		First digit: Non-numeric	Input == /		Sentinel variable	exit. Continuous
	startRow	First digit: Blank	Input == 3		prevents while-loop exit. Continuous loop prompts user to re-enter different value.	loop prompts user
		Space	Input ==			to re-enter
		Out of bounds: High	Input > boardRows			different value. Sometimes, user prompt iterates twice.
		Correct range	boardRows <= Input >= 1		Ant character placed on appropriate spot on game board.	Ant character placed on appropriate spot on game board.
endMenu	userInput	Out of bounds: Low	Input < 1	antValidate() mainMenuValidate do if while()	Sentinel variable prevents while-loop exit. Continuous loop prompts user	Sentinel variable
		Out of bounds: High	Input > 2			prevents while-loop
		First digit: Letter	Input == a			exit. Continuous
		First digit: Non-numeric	Input == /			loop prompts user
		First digit: Blank	Input == 3			

Space	Input ==	to re-enter different	to re-enter
Multiple digits	Input == 123	value.	different value.
		Integer 1 or 2 is	Integer 1 or 2 is
Correct range	Input == 1	returned to calling	returned to calling
		function.	function.