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Program Designs, Test Plans

Program 1: Drawing a star

Step I:

I must create a star using Python and Turtle. This star must begin its creation when the user clicks on it, erase after finishing, and then draw itself again if the user clicks on it again. The idea of the last part is obvious: there must be some sort of loop involved. My primary task is to see how I can make the turtle draw a star, the secondary functions are simple (for example, the turtle has a built-in function called clear which will erase the drawing). My plan is to use the penup, pendown, and setpos member functions. I will start at the top of the star, move diagonally downward, move diagonally right and up, hard left, diagonally right and downward, and then back to the origin position.

Step II:

Include Turtle library.

Create function “star”.

Start at (0, 0). Pen up. Move to (0, 60). This is where the tip of the star will be located.

Move to (-50, -50). This is the bottom left tip.

Move to (65, 20). This is the middle right tip.

Move to (-65, 20). This is the middle left tip- the exact opposite end of the previous tip.

Move to (50, -50). This is the bottom right tip.

Move back to origin.

Clear drawing.

Use “on click” function, pass the above function “star”.

Use window main loop member function to allow the user to click as many times as desired.

Step IV:

Value	Expected	Actual
Drawing only begins when clicked.	Must click drawing.	Expected.
Can draw again after drawing erases by clicking.	Can loop click.	Expected.
The turtle draws the same star each click.	Star loops.	Expected.

Program 2: Drawing my name

Step I:

I must recreate the same steps as in Program 1: I am to draw something only after clicked, erase it after completion, and allow for n number of clicks to occur, each being met with another drawing of my name.

Step II:

I will summarize most of the details because I took largely the same procedure as in Program 1.

Include Turtle library.

Create function “Alex”.

Use penup, pendown, setpos functions to write each letter of my name, A – L – E – X.

After finishing writing my name, clear the canvas.

Use onclick function with the function Alex passed as a parameter in conjunction with a window loop to allow the user to click the turtle and re-draw my name as many times as desired.

Step IV:

Value	Expected	Actual
My name only draws when the user clicks it.	Onclick function works.	Expected.
My name can be drawn as many times as desired just by repeatedly clicking the turtle.	Window loop works.	Expected.
After each iteration, my name is erased.	Clear function works.	Expected.