



Programming Course

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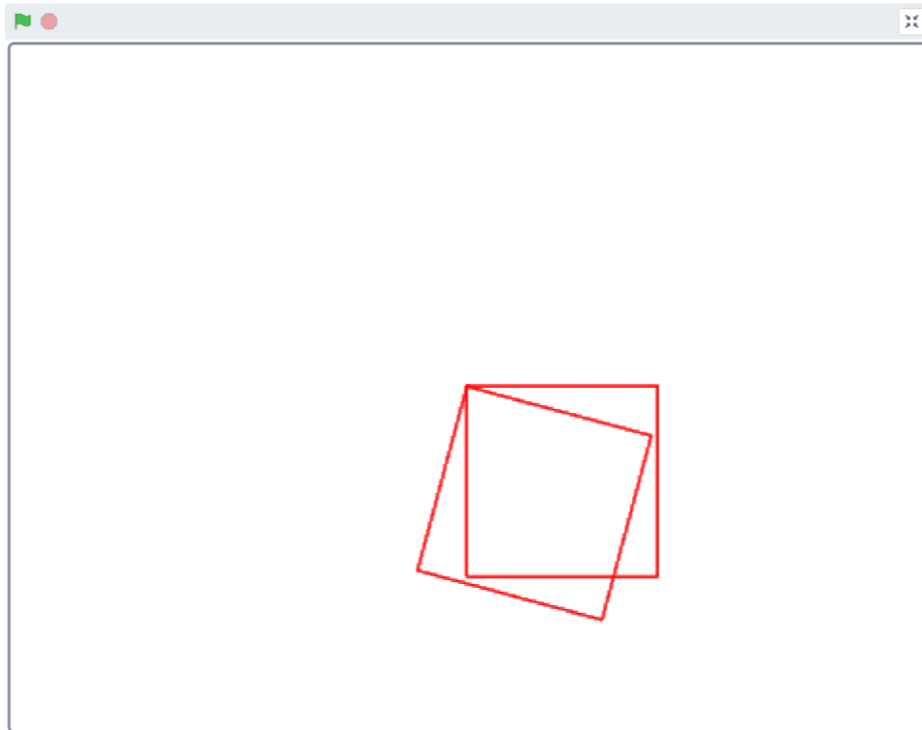
Exercise 1 (Basic character movement)

- Move the character X number of steps
- Make the character come back when he reaches the boundary of the screen
- When the character turns around, after reaching the boundary, he should stay on his feet instead of flip on his head
- Make the movement of the character look more realistic (have the characters feet move at every step)
- Get the above set of commands to repeat forever
- Add in a feature that will only get the character moving when the green button is pressed
- Ensure that the character always starts at the middle of the screen (X=0, Y=0)

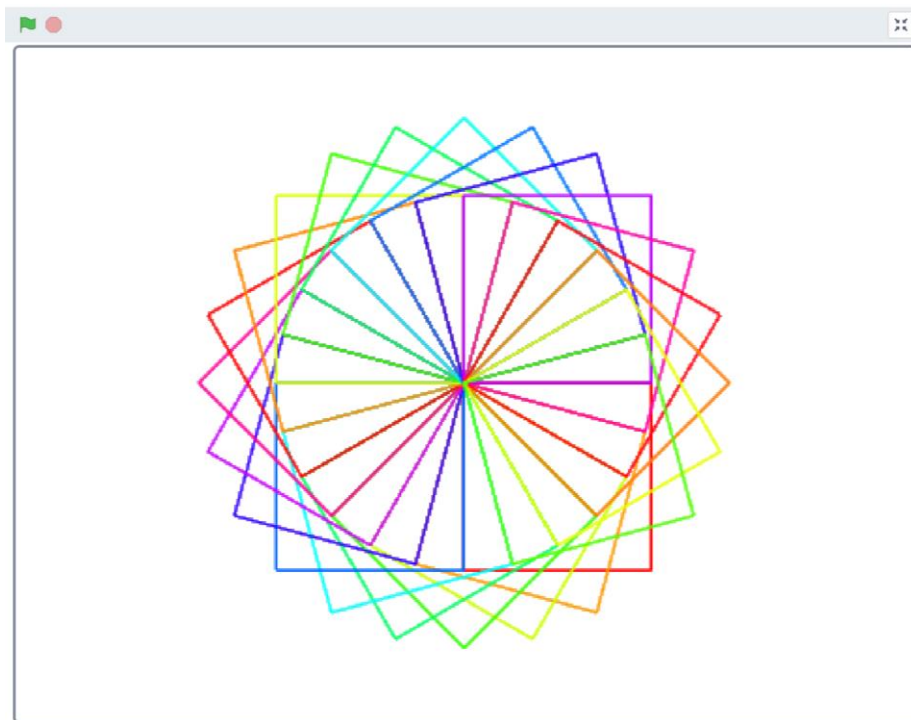
Exercise 2 (Drawing shapes)

- Get the character to start in the middle of the screen (X=0, Y=0)
- Get the character to disappear from the screen
- Use the Add Extension at the bottom left to include the Pen feature
- Put down the pen on the screen
- Move 100 steps
- Ensure that you always move from left to right (90^0)
- Turn 90 degrees and move another 100 steps
- Now try to draw a square
- Get the program to run whenever the green button is pressed
- Change the color of the square to red
- Sometimes running a program many times may result in lines that we do not want to be present. To ensure that this does not happen we must **erase all** lines at the beginning of our program

- Now change the program so that it draws a triangle
- Change it again to draw a pentagon
- Now change back to drawing a square
- Draw a second square 15 degrees away from the first as shown:



- Change the color of the second square
- Draw multiple squares of different colors to complete a full circle to get something like:

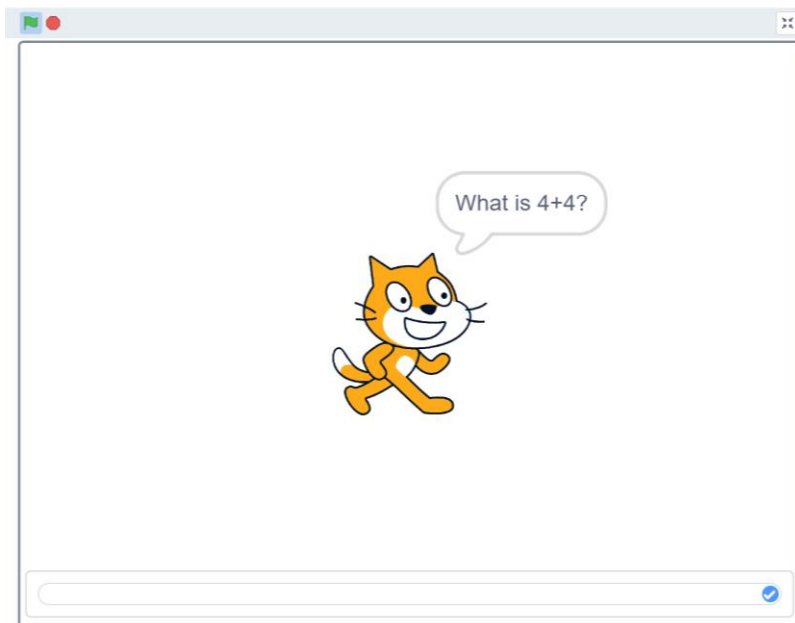


- Do the same for the triangle and the pentagon

- Change the program so that the character first asks the user for the number of sides and based on this the shape gets drawn (e.g. if user asks for shape with 3 sides then a triangle should be drawn)
- This is where we make use of a variable, which is a placeholder that will store the information entered so that we can make use of it elsewhere in our program

Exercise 3 (Doing some basic math)

- Make sure the character is being shown on the screen
- The program should run when the green button is pressed
- Create a variable called num1
- Create a variable called num2
- Set num1 to be a random number between 1 and 10
- Set num2 to be a random number between 1 and 10
- Make the character ask what is num1+num2, where num1 and num2 are substituted with the values from above:



- Once the person enters a number you need to check if the answer is correct
- If it is correct let the character say "Well Done!"
- If the answer is incorrect then the character should say "Sorry the correct answer is:" and give the correct answer
- Edit your program so that the character now asks four different questions and keeps the score of the number of correct answers
- At the end of the program the character should say "You have gotten X correct answers out of 4" where X is the number of correct answers