Scratch Programming: 7. Design

Task: Create a maze game. Allow the user to move the sprite around a maze, if successful tell the user they have finished.

Lesson Objectives:

To learn how to
- design a program in Scratch
- use simple logic
- use the paint editor

What do you need to do?

Follow the instructions below.

Important. **Always save your work regularly. Use the 'Save as' option so you know where the file is saved.**

Design

Option A. Try to achieve the goal by yourself

By this stage you should be able to design the program without instructions. Look at the end of the program (e.g. watch the video or https://www.youtube.com/watch?v=1qwbVGUeW2w at 16:17) and design your own maze. You know the goal of walking through a maze already, so option A is to just complete the task without assistance.

Option B. Try to achieve the goal by yourself using the following design

- Look at the both mazes in the video and in the demonstration.
- Create your own maze (using the paint editor)
- Place the cat at the start
- Use costumes to allow the cat to walk
- Allow the user to move the cat (up, down, left & right)
- Stop the cat walking through the walls
- End the game

For fun!
- Add sound effects
- Make the cat grow when it touches a wall.
- Try a different maze (http://www.mazegenerator.net/)

Option C. Instructions

Creating your own maze is a task that does not need any assistance but here are some instructions in case you get into any difficulty.
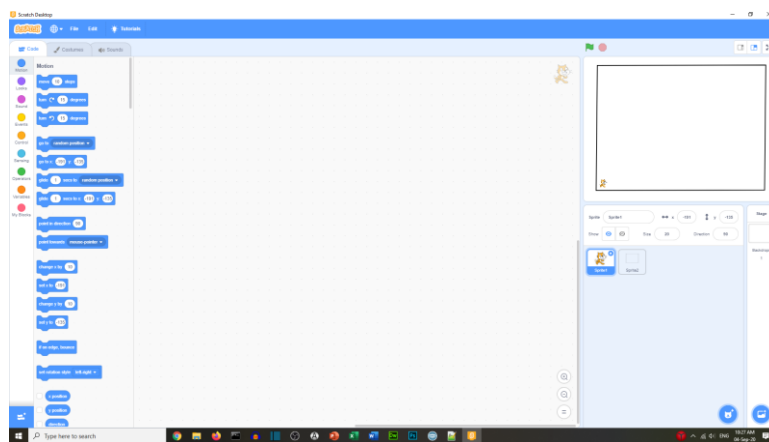
Create the maze
- Maze as a sprite
- Draw a horizontal line
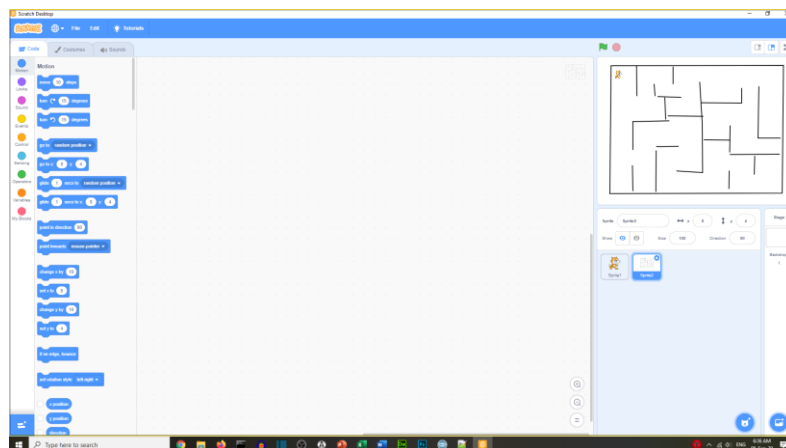- Draw a vertical line

- Copy, paste, then move, these lines to make the outside wall
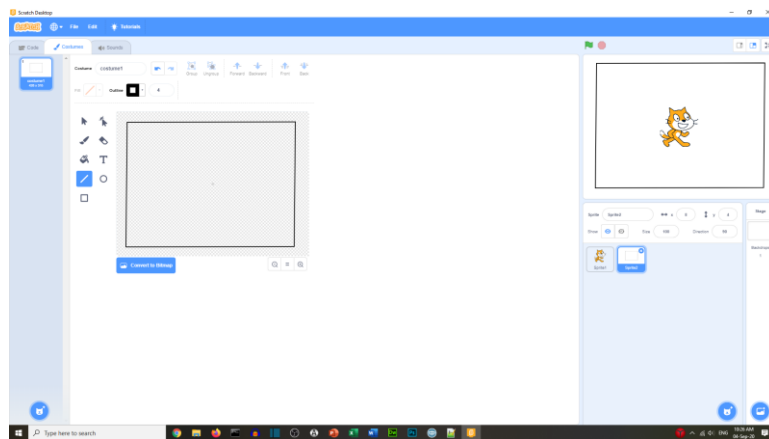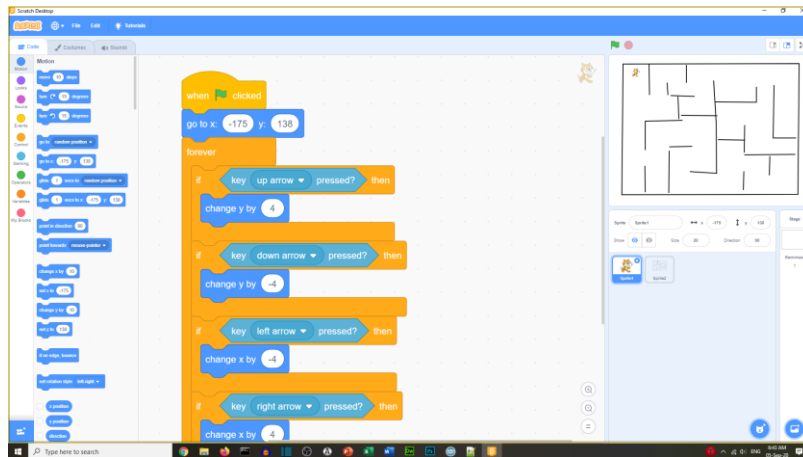

Reduce the size of the cat to 20%

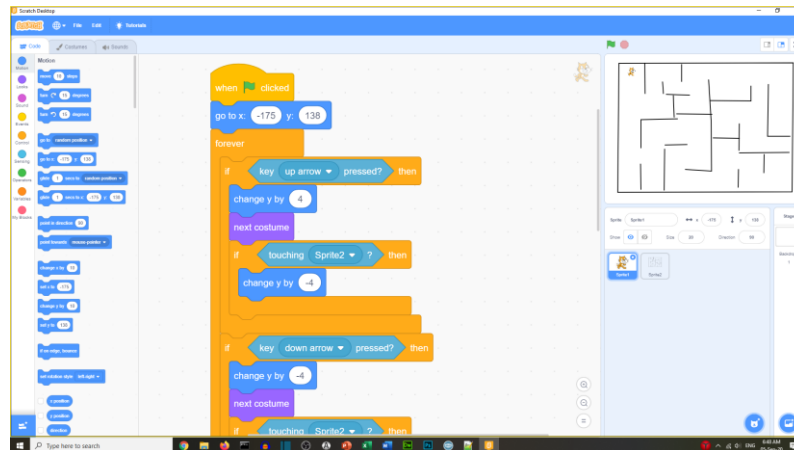Create the maze with inside walls

Moving the sprite

- Always place the sprite at the start
- Use the 'up', 'down', 'left' and 'right' arrow keys
- For each direction use the key_____ pressed block
- Put these inside an if block

- Move 4 steps

- Make the cat walk by using the 'next costume' block

Stopping the cat walk through the maze walls
- Inside an if block
- Use if touching the maze sprite (e.g. Sprite2)
- Change by the opposite of the walk
- Direction up
  - change y by 4 for walk
  - If touching maze – change y by -4
- Direction left
  - change x by -4 for walk
  - If touching maze – change x by 4

End the game
- Create another sprite, a red 'x'
- If touching this sprite
- Say "you've won!" for 2 seconds
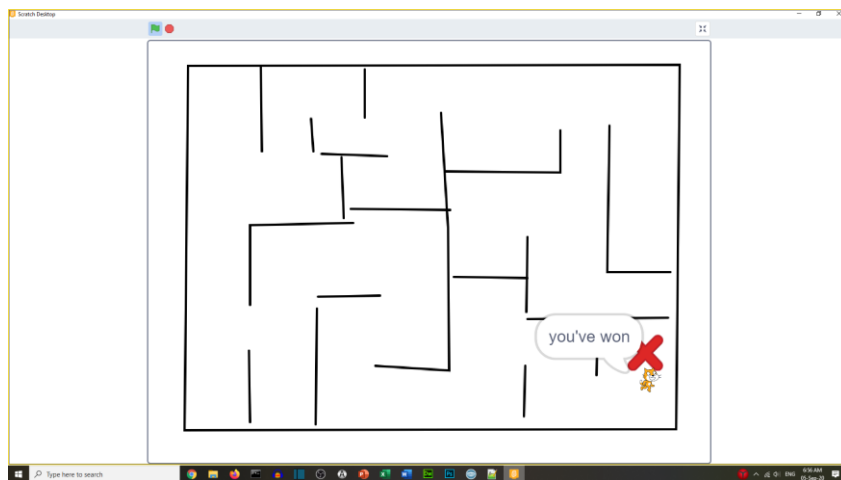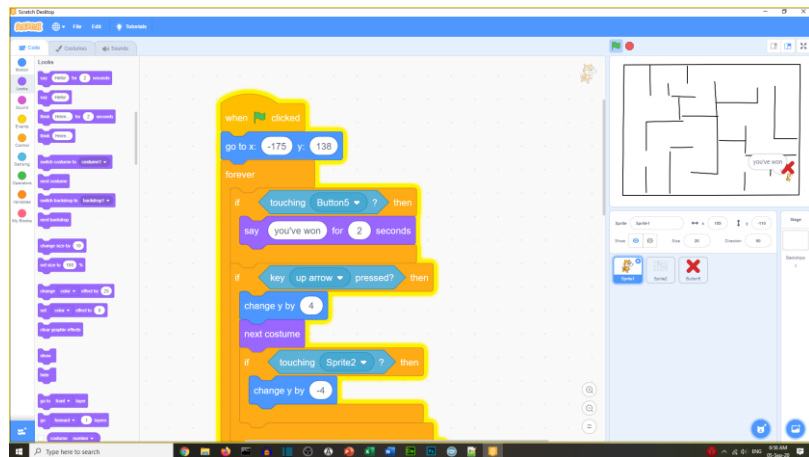
Other things to do:
- Add sound effects
- Increase the cat size if it touches the wall
- Try a different maze
  - http://www.mazegenerator.net/

Well done you have completed Task 7