**PATUAKHALI SCIENCE AND TECHNOLOGY UNIVERSITY**

**COURSE CODE CCE-112**

**SUBMITTED TO:**

### **Prof. Dr. Md Samsuzzaman**

### **Department of Computer and Communication Engineering**

**Faculty of Computer Science And Engineering**

**SUBMITTED BY:**

**Md. Sharafat Karim**

ID: **2102024**,

Registration No: **10151**

**Faculty of Computer Science and Engineering**

Date of submission: **27 March, 2023**

Assignment: Lab Problem 09

Assignment title: Rainbow lines

1. What happens when a sprite moves after it has run the *pen down* block?

Answer: When a sprite moves after it has pen down block, it creates a line from a specific point to another specific point. The color and thickness of the trail can be customized using other pen-related blocks in Scratch, such as "set pen color" and "set pen size". This can be used to create various effects, such as drawing shapes and patterns, or simply to trace the movement of the sprite. If the sprite lifts the pen up by running the "pen up" block, then it will no longer leave a trail as it moves.

1. If some code moves a sprite but no line is drawn behind it, what might cause this problem?

Answer: If a sprite is moved in Scratch programming, but no line is drawn behind it, there could be several reasons why this problem is occurring. Here are some possible causes:

* The "pen down" block has not been run: In order for a sprite to draw a line as it moves, the "pen down" block needs to be run first. If this block has not been included in the code or is placed after the movement blocks, then the sprite will move without leaving any trail.
* The pen color or size has not been set: Even if the "pen down" block has been run, if the pen color or size has not been set using the appropriate blocks, the sprite may appear to be moving without drawing anything.

1. Which block causes the lines in the *Rainbow Lines* program to look like a rainbow?

Answer: In the Rainbow Lines program in Scratch programming, the block that causes the lines to look like a rainbow is the "set pen color" block. This block can create a line from a specific point to another specific point.

1. Which code block do you use to make the rainbow lines thicker?

Answer: To make the rainbow lines thicker in the Rainbow Lines program in Scratch, we can use the "set pen size" block. This block allows we to set the width of the line that the sprite draws as it moves. To make the line thicker, simply increase the value of the block. For example, we might set the pen size to 5 or 10 to create a thicker line.

1. How do you turn on Turbo Mode? How do you turn it off?

Answer: To turn on the turbo mode, here are the steps required,

* Click on the "File" menu at the top left of the Scratch editor.
* Select "Turbo Mode" from the drop-down menu.
* Click on "Turn On" to enable Turbo Mode.

Once Turbo Mode is turned on, the code will execute more quickly than it would in regular mode. This can be helpful when testing and debugging your projects.

To turn off Turbo Mode, simply repeat the above steps but select "Turn Off" instead of "Turn On". Note that turning off Turbo Mode may cause your code to execute more slowly than it did with Turbo Mode enable.

* Click on the "File" menu at the top left of the Scratch editor.
* Select "Turbo Mode" from the drop-down menu.
* Click on "Turn Off" to enable Turbo Mode.

1. How do you duplicate a sprite and its code blocks?

Answer: To duplicate a sprite we can right click a sprite and click on “duplicate” button. It’ll also copy its code blocks.

1. Where does a sprite point when its direction is 90 degree?

Answer: When a sprite has a direction of 90 degree it points toward the positive x axis. Then we can move it forward or, to the right from left.

1. What is the degree direction for pointing up?

Answer: The degree direction for pointing up is 0 degree. When we set it 0 then we can go upwards.

1. You want a sprite to point down and move in that direction. In which color of blocks category would you find code blocks to do this?

Answer: To make a sprite point down and move in that direction in Scratch programming, you would find the code blocks to do this under the "Motion" category of blocks. Specifically, you can use the following blocks:

* "Point in direction": This block sets the direction that the sprite is facing, measured in degrees. To make the sprite face downwards, set the value to 270°.
* "Move \_ steps": This block moves the sprite forward by a specified number of steps. You can adjust the value to make the sprite move further or shorter distances.

By combining these two blocks, you can make the sprite point down and move in that direction. Start by using the "point in direction" block to make the sprite face downwards, and then use the "move \_ steps" block to move it in that direction.

1. How do you select a new backdrop from Scratch’s Backdrop Library?

Answer: To select a new backdrop from Scratch's backdrop library, follow these steps:

* Click on the "Stage" icon in the bottom-left corner of the Scratch editor to switch to the stage view.
* Click on the "Choose backdrop" button in the top-left corner of the stage area. This will open the backdrop library.
* Browse through the available backdrops by clicking on the thumbnails or using the search bar at the top of the library window.
* When you find a backdrop you want to use, click on it to select it.

The new backdrop will be added to the project and displayed on the stage.

1. You see a sprite named **Sprite1** in the Sprite list. How do you rename the sprite?

Answer: To rename a sprite on the bottom right corner of the screen there is a text box with the label, “Sprite”. On that text box we have to write the desired name and press enter key.