

Programming Fundamentals Lab



Lab # 01

Scratch

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Course Code: CL1002

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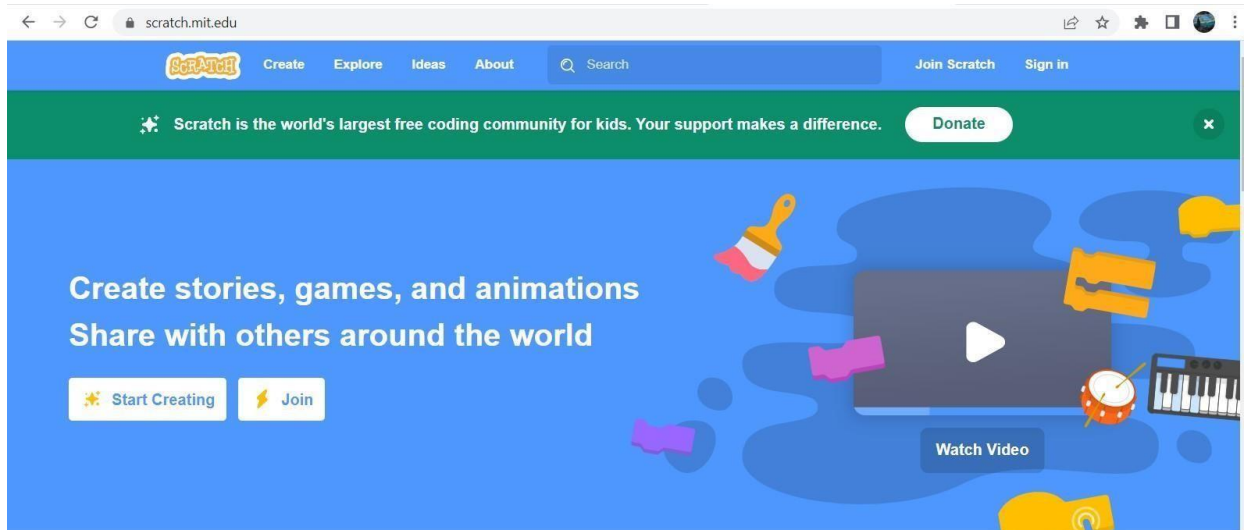
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Scratch:

Scratch is a high-level block-based visual programming language and website aimed primarily at children as an educational tool for programming. Users on the site, called Scratchers, can create projects on the website using a block-like interface. It is a visual programming language that allows students to create their own interactive stories, games and animations.

Website Link:

<https://scratch.mit.edu/>



Make your account by clicking on the **Join Scratch** and then fill all the details.

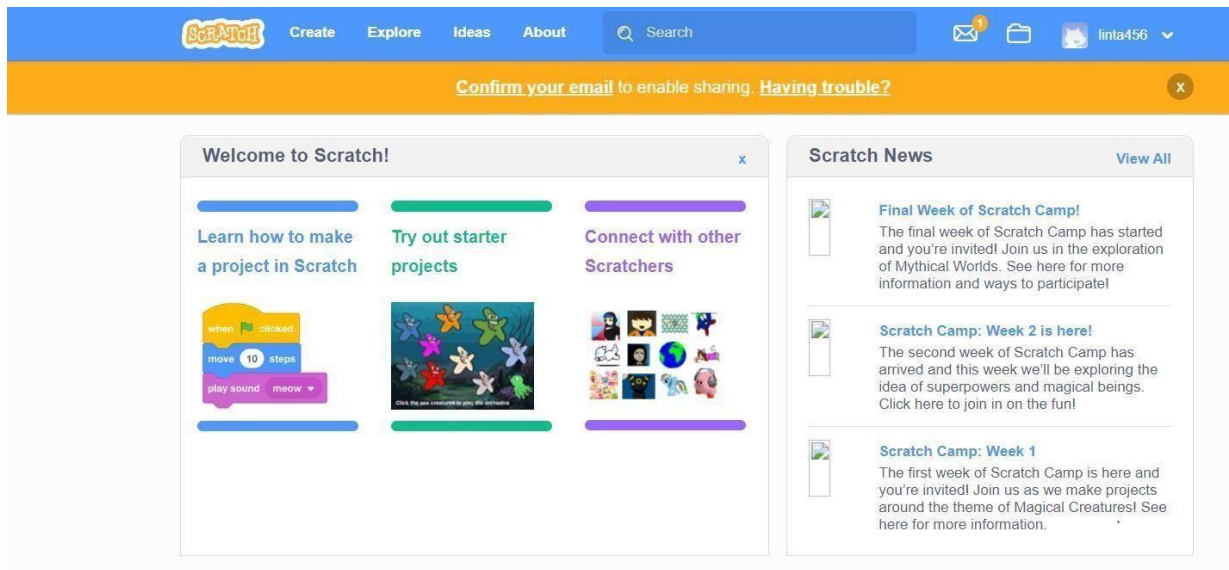
A screenshot of the Scratch 'Join Scratch' registration form. The form is titled 'Join Scratch' and has the subtitle 'Create projects, share ideas, make friends. It's free!'. It contains the following fields and elements:

- 'Create a username' label followed by a text input field with placeholder text 'Username'.
- 'Create a password' label followed by two text input fields: the first with placeholder text 'Password' and the second with placeholder text 'Type password again'.
- A checkbox labeled 'Show password'.
- A large orange button labeled 'Next' at the bottom.
- A blue callout bubble on the right side of the form that says 'Don't use your real name'.

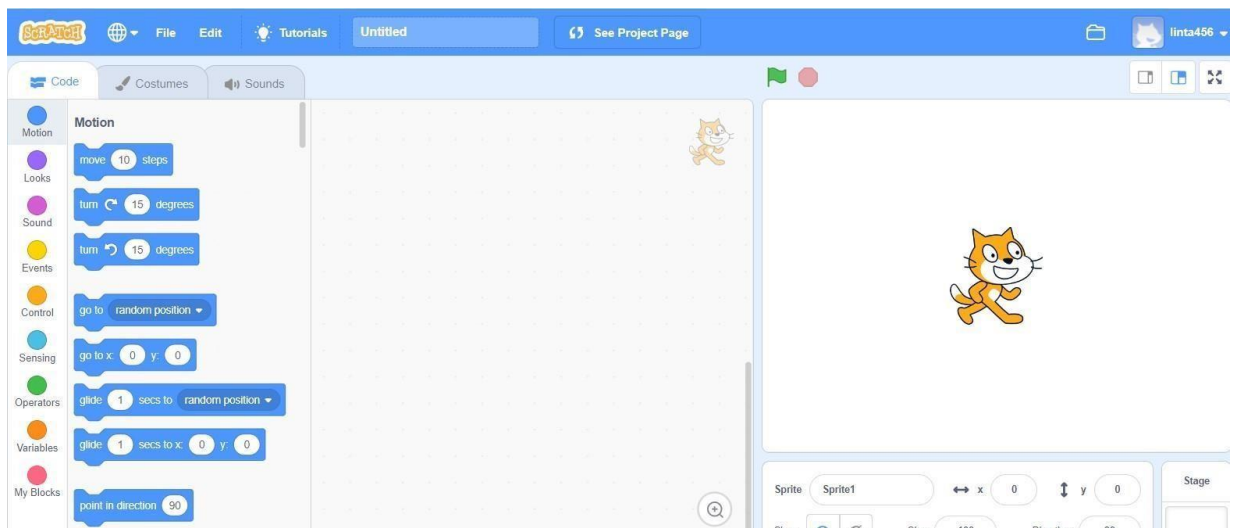
The background of the form is blue with the Scratch logo in the top left corner.

Create an interactive story

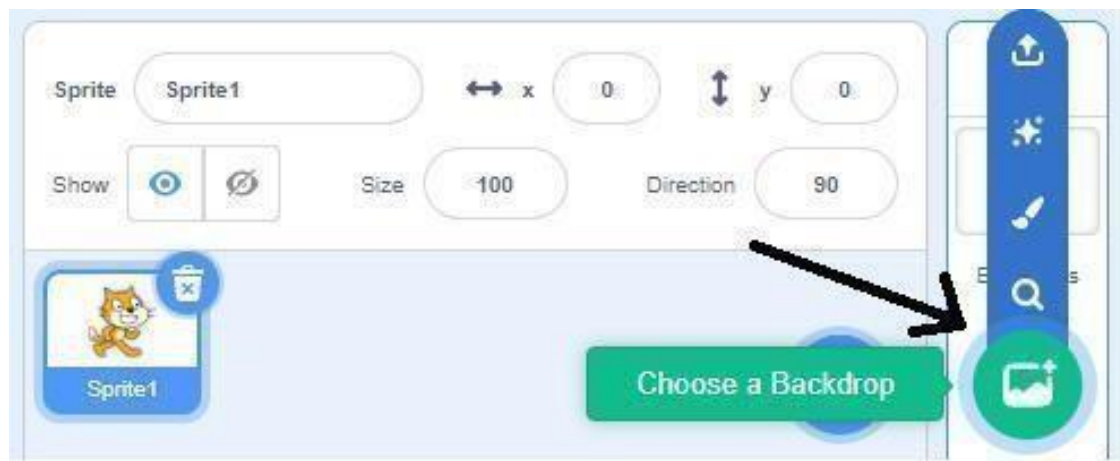
Now click on **create** at the top left corner.



Start creating your blocks!



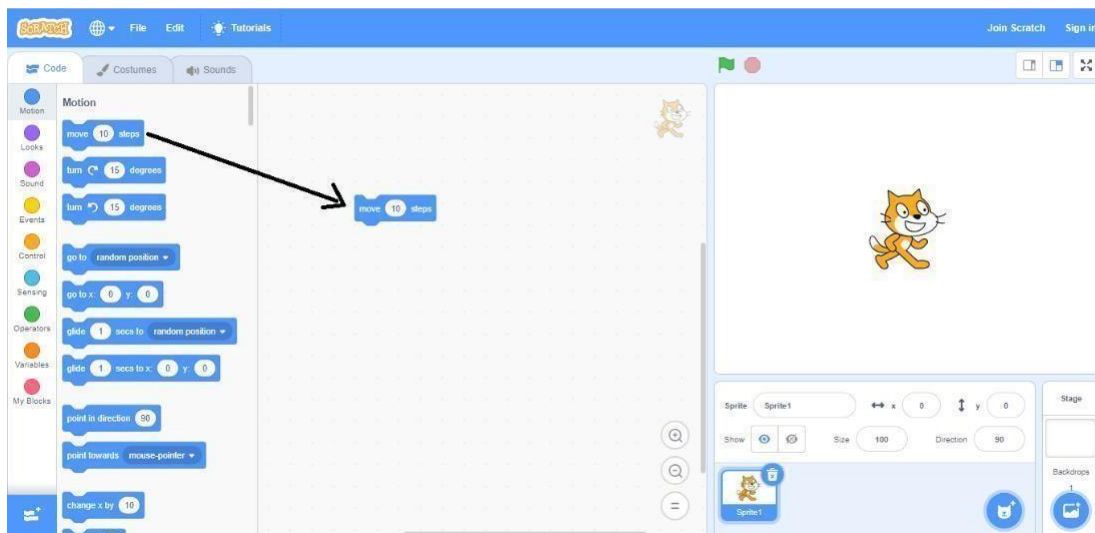
You can change the **Backdrop** from bottom right



Change the character **Sprite** by clicking on cat face logo

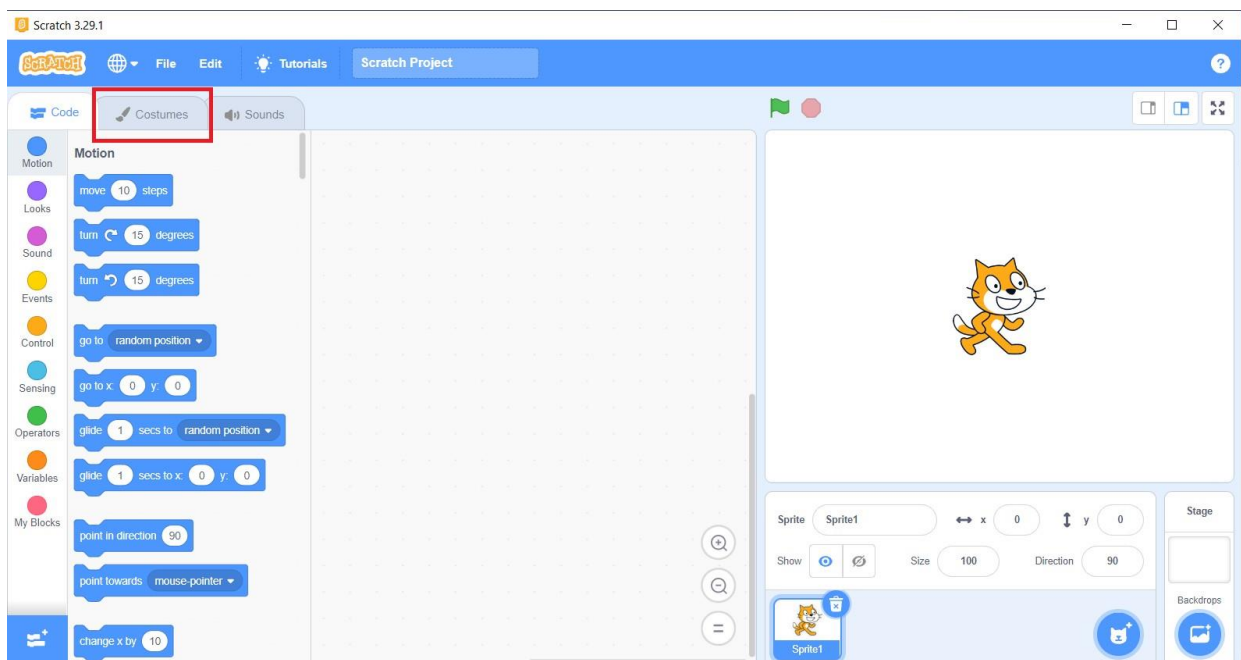


Drag the **Move** block in script area

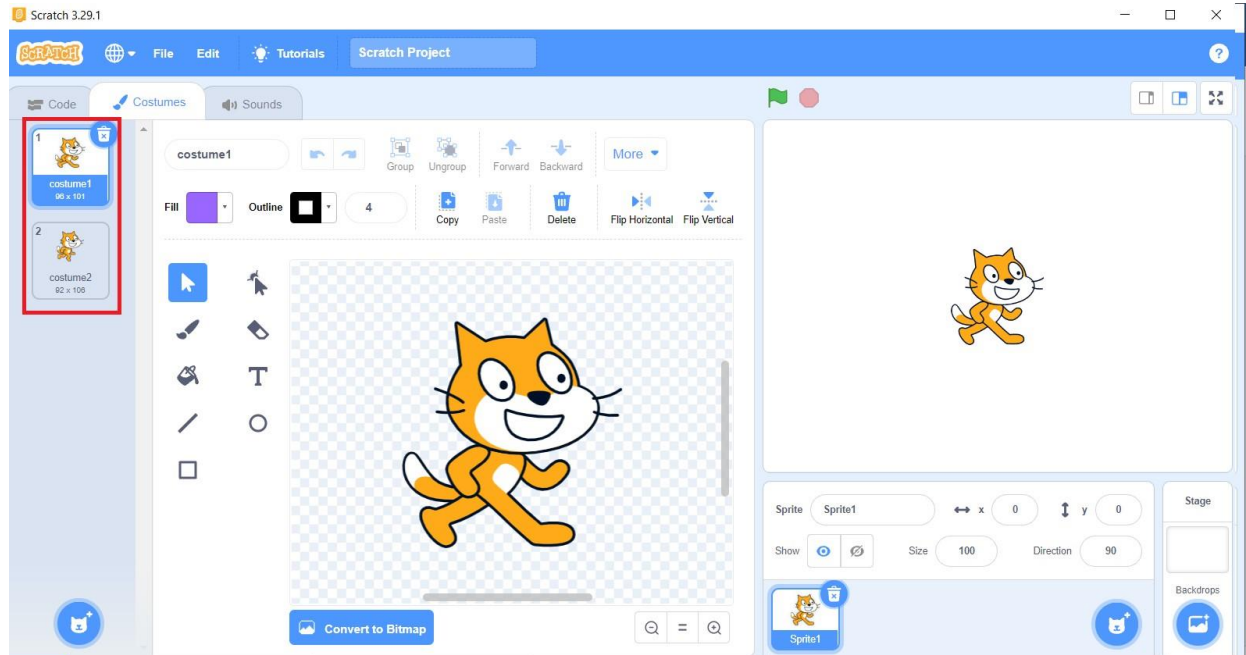


Animate a character in Scratch

You can see all the costumes (sprites) of a sprite by clicking on the **Costumes** button.



The cat has two costumes named **costume1** and **costume2**.



To animate the cat, you can use the **switch costume** block with **wait** to see the cat in animation.

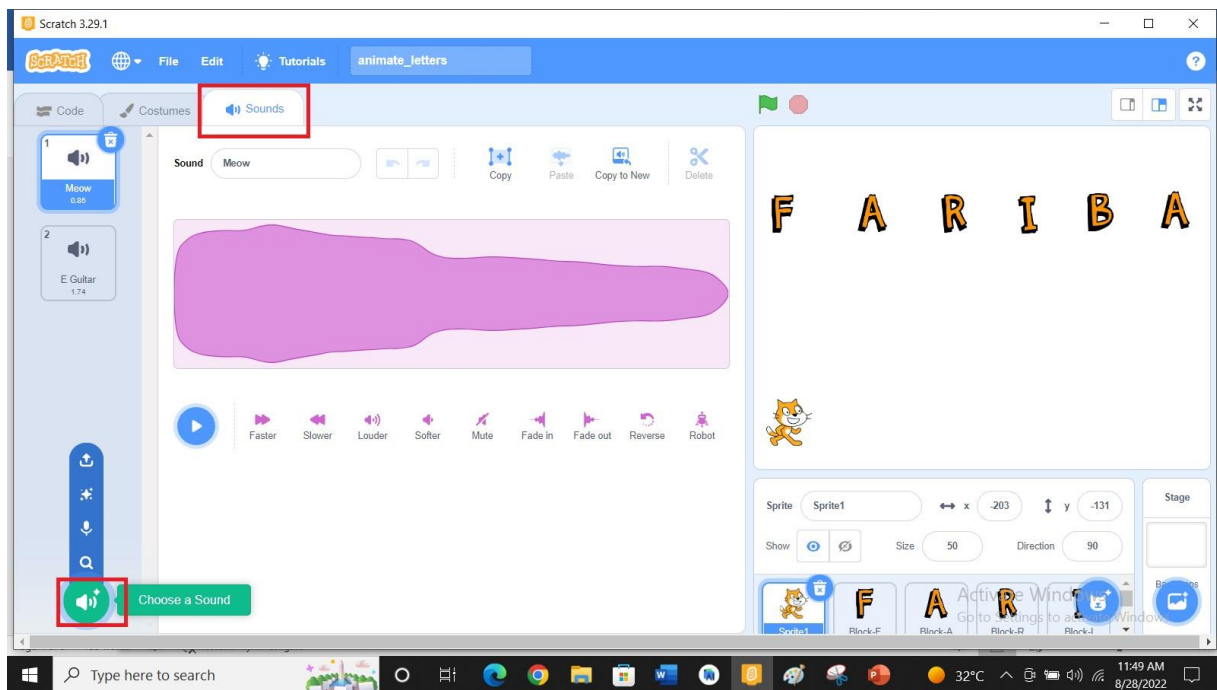
The following code blocks will animate the cat.

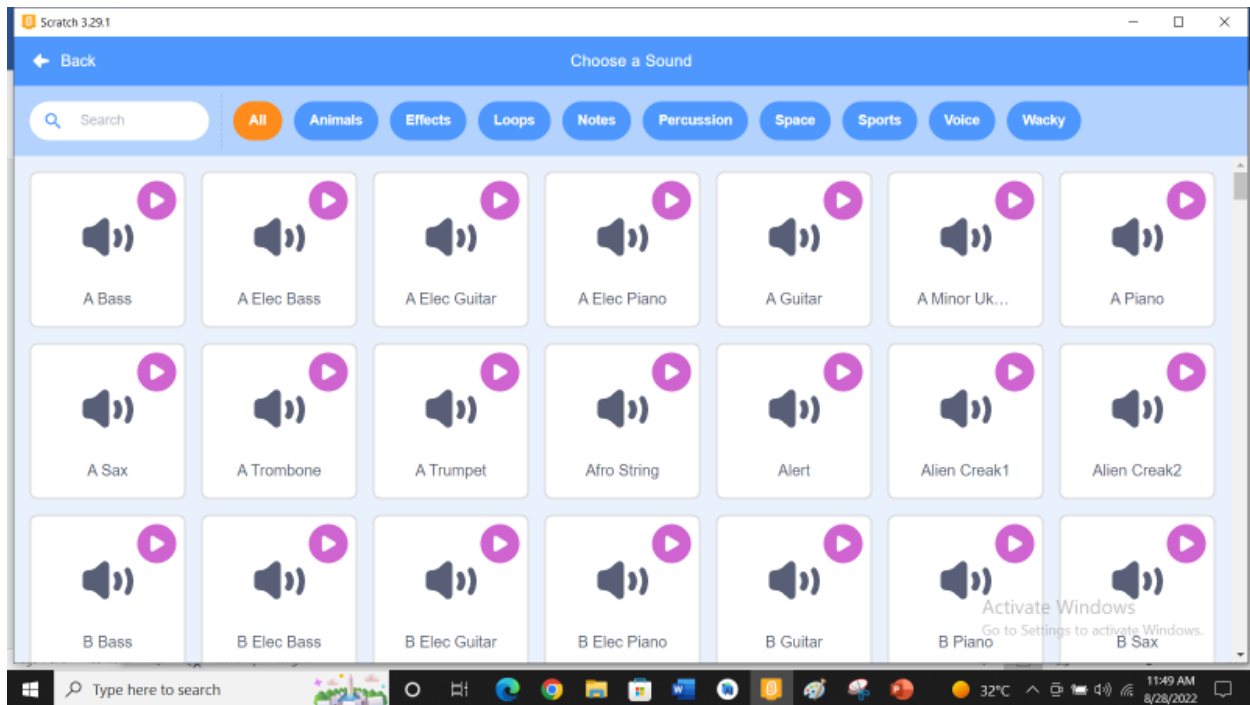


Add Sounds

To add built-in or external sounds, you can click on the Sounds button.

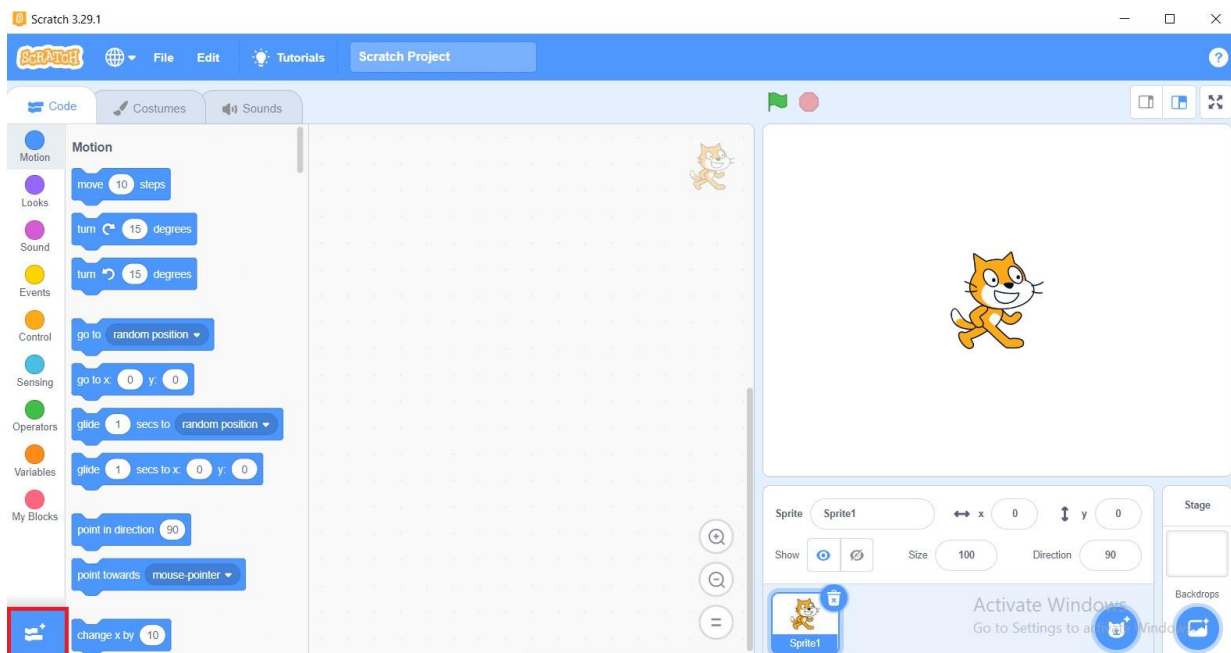
On the bottom left corner, you can see the sounds icon. From there you can add the built-in or external sounds to your sprite.



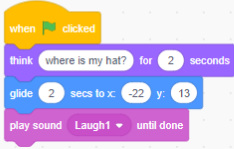



Extensions

You can add extensions to use additional functionalities like music, pen, text to speech,



translate, etc. To add extensions, click on the **extensions** icon on the bottom left.





Sprite: Witch

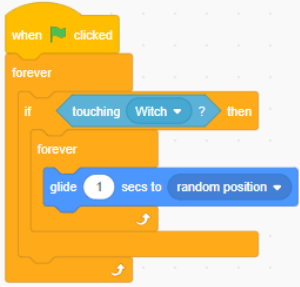
Size: 70


Direction: 90

Witch Wizard Hat

Stage

Backdrops: 4





Sprite: Wizard Hat

Size: 50

Direction: 90

Wizard Hat

Stage

Backdrops: 4

Task 1:

Create a story in which there is a dragon, and a butterfly in a Jungle. The dragon should come closer to the butterfly and then fire on it with his mouth. After that the butterfly should disappear.

Task 2:

Create any interactive story that includes the sprite and the backdrop of your choice. Use different blocks to make your story creative and interactive. Let's see what's in your mind!

References

<https://scratch.mit.edu/> [https://en.wikipedia.org/wiki/Scratch_\(programming_language\)](https://en.wikipedia.org/wiki/Scratch_(programming_language))