ACTIVITY SHEET

SESSION 12

Making a Speech to Text Bot

In this session, we are going to create a script in PictoBlox, that can convert, what you speak into text format and can also make a conversation with you, like a bot.

This activity sheet belongs to _____

MATERIALS REQUIRED

□ Computer/Laptop/Tab with PictoBlox installed

SPEECH RECOGNITION

Speech Recognition is the ability of a machine to identify words and phrases in spoken language (also called: natural language) and convert them to a form that machines can understand (machine-readable format).

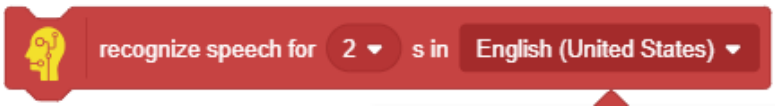
SPEECH-TO-TEXT BLOCKS IN PICTOBLOX

The **Artificial Intelligence** extension in PictoBlox has blocks dedicated to speech recognition. Let's first add this extension to our project:

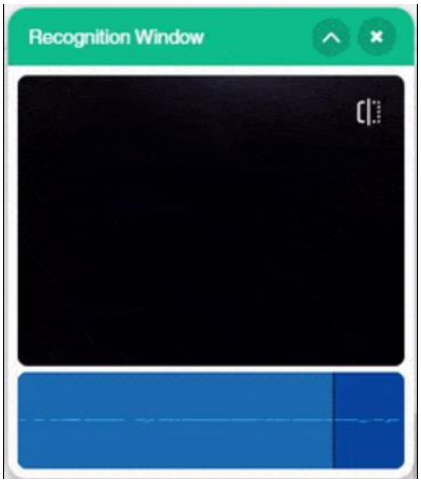
1. Create a new project in PictoBlox.
2. Next, click on the **Add Extension** button and add the **Artificial Intelligence** extension.

SPEECH RECOGNITION BLOCK

- In order to perform Speech Recognition we have the recognize speech for () s in the () block in the Artificial Intelligence extension.



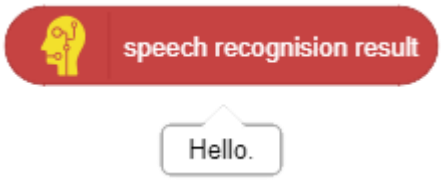
- When this block is executed, a **Recognition Window** opens up, and you will get a specified time, (ex: 2 seconds, depending on what value you have specified in the block) during which PictoBlox will record whatever you say.
- Once recorded, the speech will be converted to the text of the language you spoke in and that text will be saved locally, on your device.



SPEECH RESULT BLOCK

- Once you have recorded your speech using the **Recognition Window**, you need to get it back so that you can use it somewhere ex: to display it or speak it.

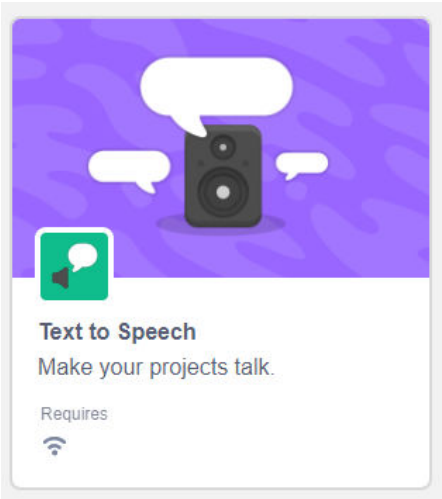
- This can be done using the **speech recognition result** block. This block gives you back, the last text that it detected from the speech.
- Now, let us make a project using the speech recognition blocks, that we learned above. We will be making a script, that will recognize our voice command, analyze it and respond back to us.



STEP-BY-STEP

1. First, add the **Text to Speech** extension to the palette, by clicking on the **Add Extension** button. This extension will translate, the text we have saved (using the above speech recognition blocks), back to speech.
2. Add a **when flag clicked** block into the scripting area.
3. From the Text to Speech palette, drop a **set voice to ()** block under **when flag clicked block**, and from the dropdown choose "squeak".
4. Add a **say ()** block from the Looks palette under the previous block and write "**Hello My name is Tobi**".
5. Add a **speak ()** block from the Text to Speech palette and write the same message – "**Hello My name is Tobi**".

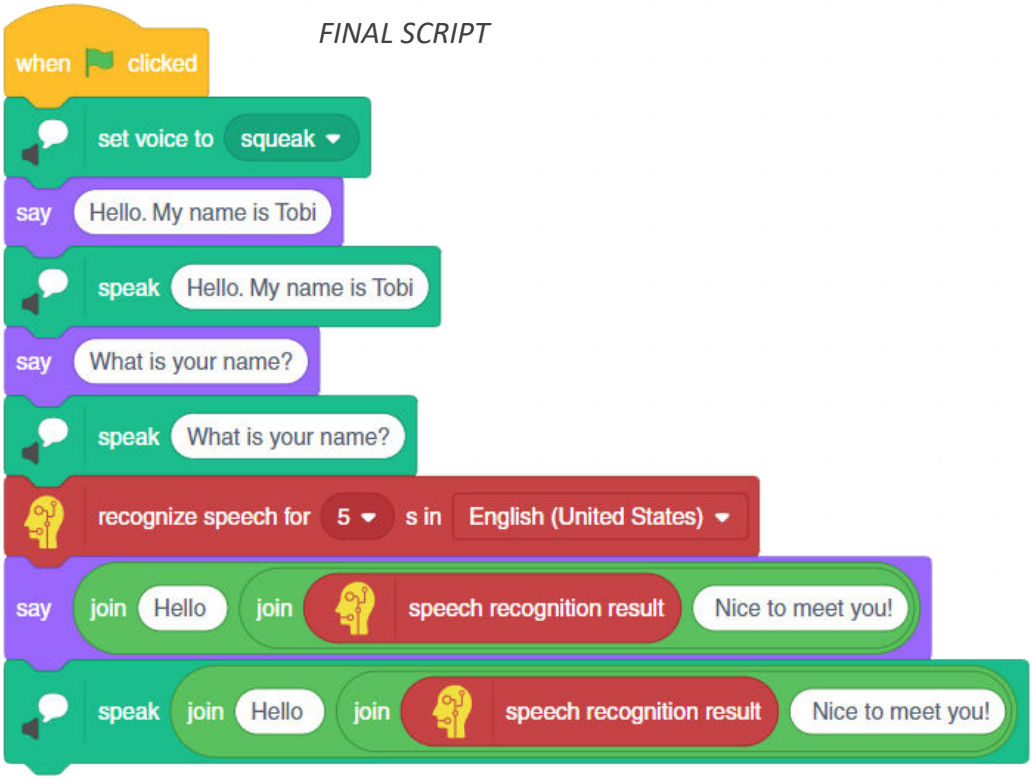
STEP 1



STEPS 2-7

6. Now, repeat the above two steps to add another message – **"What is your name?"** (within **say()** and **speak()** blocks).
7. After completing the above code, add a **recognize speech for () s in ()** block below the **speak ()** block. Change the time to **5** seconds and the language to **English (United States)**.
8. Next, add a **say ()** block below the **recognize speech for () seconds in ()** block.
9. Now take two **join () ()** blocks from the operator palette and add one in the empty space of **say()** block and write "**Hello**" in the first empty space of the **join () ()** block and in the second empty space add another **join () ()** block.
10. Add a **speech recognition result** block in the first **()** of second **join () ()** block and write – **"Nice to meet you"** in the second **()**.
11. Next, add a **speak ()** block below the **say()** block and add the similar blocks that you added in the **say()** block, two **join ()** blocks, and a **speech recognition result** block. Also, add the same text as the above **say()** block.
12. Click the **green flag** to start the script, and talk with your new friend, '**Speech to Text Bot**'.

FINAL SCRIPT



SAVING THE PROGRAM

Save the project file as **Speech to Text Bot.** Check page 3 if you missed how to save the project.