ACTIVITY SHEET

SESSION 13

Smart Lamp



In this session, we are going to create our very own Smart Lamp, that can switch ON or OFF based on our voice command, just like Alexa/Siri. We will use the LED matrix of Quarky as a lamp for this.

This activity sheet belongs to

MATERIALS REQUIRED

Quarky Robot

STEP-BY-STEP

- 1. Let's begin by first connecting Quarky to PictoBlox.
 - **1.1.** First, connect **Quarky** to your laptop using **USB cable**.
 - 1.2. Open PictoBlox and create a new file. Select the coding environment as Block Coding.
 - 1.3. Select the Board as Quarky. Next, select the Serial port to connect Quarky and press Connect.

STEP 2

- 2. Next, add the following two extensions to your palette by clicking on the Add Extension button -: 2.1. Artificial Intelligence extension.
 - 2.2. Text to Speech Extension





3. Add a when flag clicked block into the scripting area.

Activity Sheets

- From the Text to Speech palette, drop a set voice to () block under when clicked block, and from the dropdown choose "squeak".
- 5. Add a recognize speech for () s in () block below the set voice to () block. Change the time to 5 seconds and the language to English (United States).
- 6. Add an if () else block and inside the if-condition, add a () contains ()
 ? block from the Operator palette.
- Add speech recognition result block inside the () contains ()? block and in the second space add On. This will test whether you said On or not.
- Next, add a say () block from the Looks palette under the previous block and write "Turning the lights on".
- Add a speak () block from the Text to Speech palette and write the same message – "Turning the lights on".
- **10.** Add a **display matrix as ()** block to turn on the LEDs of Quarky, for when you say **On**.
- **11.** Duplicate the **if-else** block (by right clicking on it, as done in the previous session) and place it inside the else branch of the first **if-else** block.
- **12.** Now, inside the if-condition of the duplicated **if-else** block, do the following:

12.1.Change the condition to **Off**.

12.2. Inside the say () and speak () blocks, edit the message to "Turning the lights off".

- **12.3.** Remove the **display matrix as ()** block and add a **clear screen** block.
- 13. Next, in the else branch add the say () and speak () blocks, and write the message I do not understand your commands in both the blocks.
- 14. Yayy! You have finally built, a **Smart Lamp**, that you can switch ON or OFF with your voice.

SAVING THE PROGRAM

Save the project file as Smart Lamp. Check page 3 if you missed how to save the project.

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