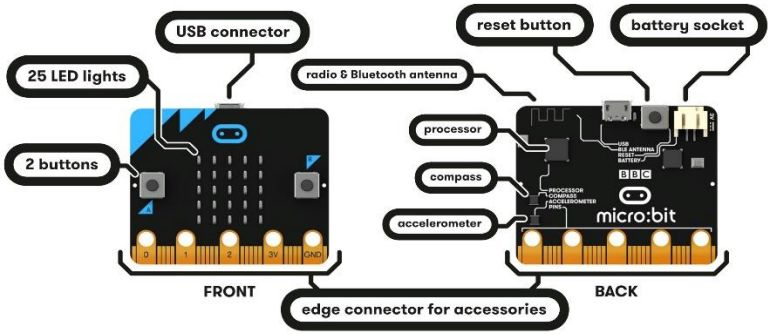
(rock, paper, scissors) Game Using Micro:bit

1 - What is micro:bit ? :

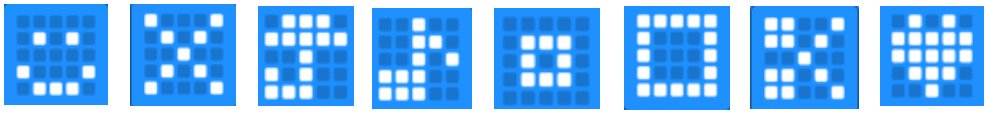
is a small, programmable computer designed to help students learn about technology, coding, and electronics.

2 - Micro: Bit Components:

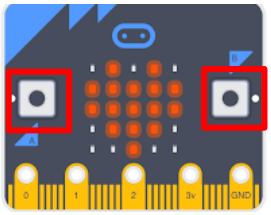


Front Side:

- LED Display (5x5 Grid):
  A grid of 25 small LED lights that can show numbers, letters, shapes, and even simple animations. You can program it to display images, text as shown below:



- Buttons (A and B):
  Two programmable buttons (A and B) that can be used for interacting with the micro:bit, such as controlling games or triggering actions in your program.



- USB Connector:
  A micro-USB port that is used to power the micro:bit and to transfer programs (code) from your computer to the micro:bit.

- Edge Connector for Accessories:
  The golden strip at the bottom has 25 pins. These can be connected to external components like sensors, motors, or LEDs, making the micro:bit highly customizable for projects.

Back Side:

- Radio & Bluetooth Antenna:
  Allows the micro:bit to wirelessly communicate with other devices, including other micro:bits or smartphones, using radio signals or Bluetooth.

- Reset Button:
  A small button to restart the micro:bit. This is useful if you want to run your program from the beginning or troubleshoot.

- Battery Socket:
  A slot for attaching an external battery pack to power the micro:bit when not connected to a computer.

- Processor:
  The (brain) of the micro:bit that runs the code you upload. It processes all inputs and controls the outputs.

- Compass:
  A sensor that detects the Earth's magnetic field, allowing the micro:bit to function as a digital compass or detect nearby magnets.

- Accelerometer:
  A sensor that detects motion and orientation. It can tell if the micro:bit is being shaken, tilted, or moved, which is great for motion-sensitive projects.

3- Components Quiz:

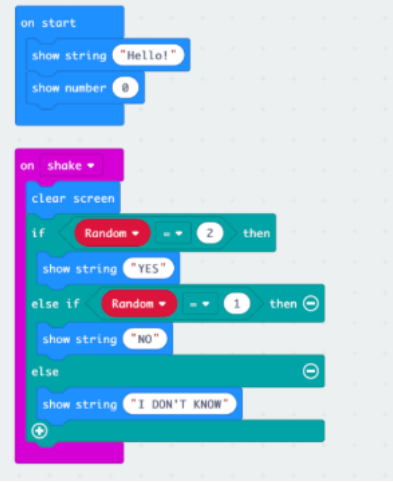
Kahoot Quiz

4 – How Can We Program The Micro:Bit?

There are two ways to program the Micro:Bit:

- By programing Languages:
  Python or JavaScript

- Programing Blocks (Drag and Drop Commands):

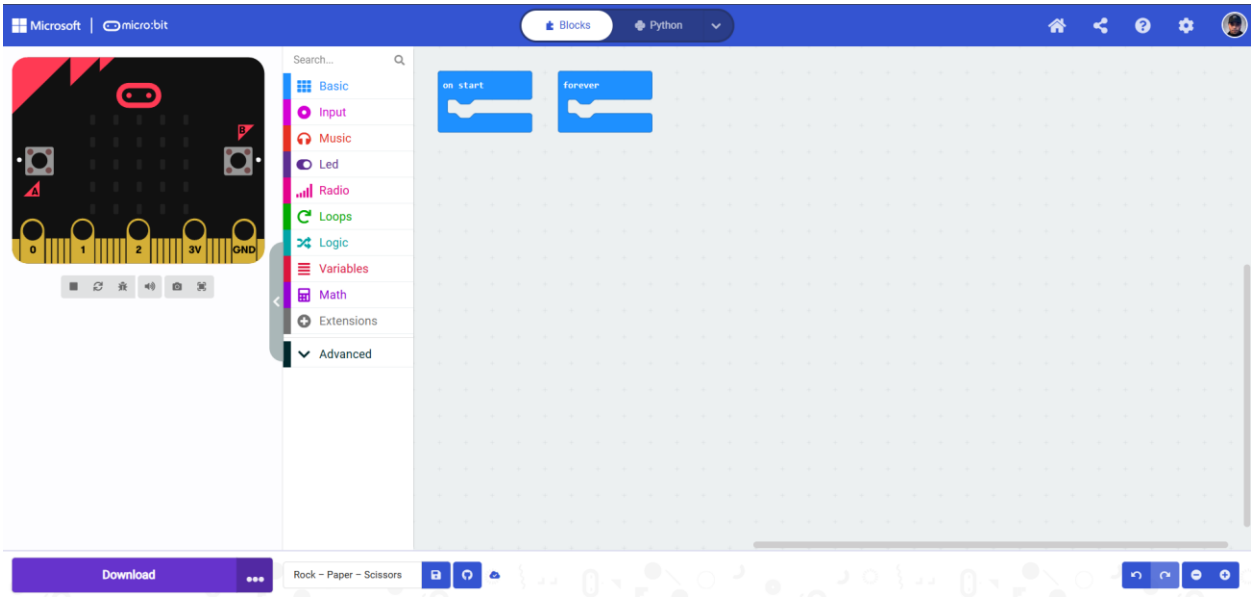


5 – Programing Blocks (Drag and Drop Commands):

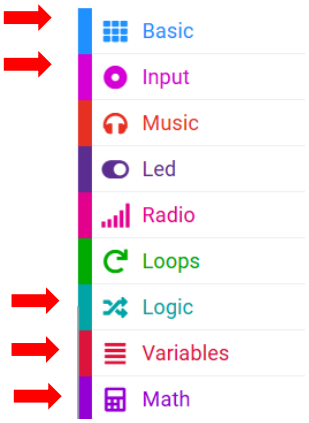
Now let we go through how to make (Rock Paper Scissors) Game as your first project by using Programing Blocks

- **Step 1 :**
  Search for MakerCode Editor in google :
  https://makecode.microbit.org/#editor

- **Step 2 :**
  Click on new project and name it : Rock – Paper – Scissors
  Then this screen will appear

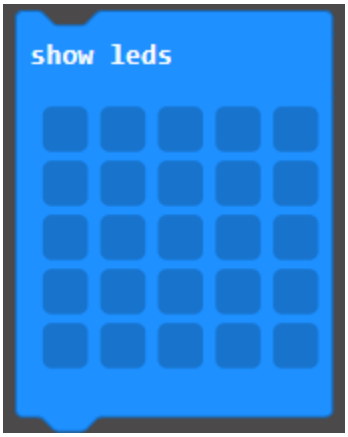


- **Step 3 :**
  We just will use this command Groups:



  From Basic:

  We need 3 of

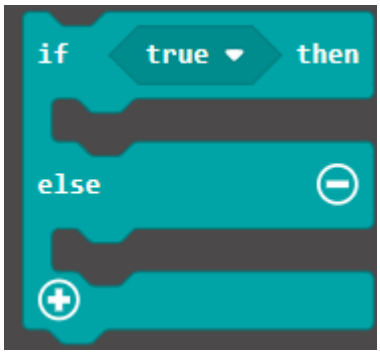


  From Input :

  We need 3 of

  From Logic :

  We need :

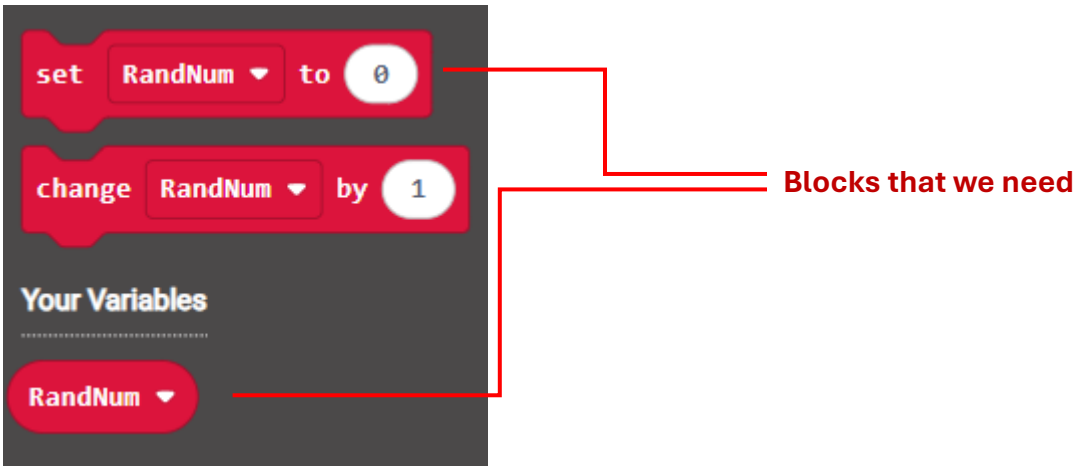


  AND

From Variables :

Go to click on Make a Variable... button and name a variable “Random_Number“ or “RandNum” For Short then click **OK**

These Blocks will appear:

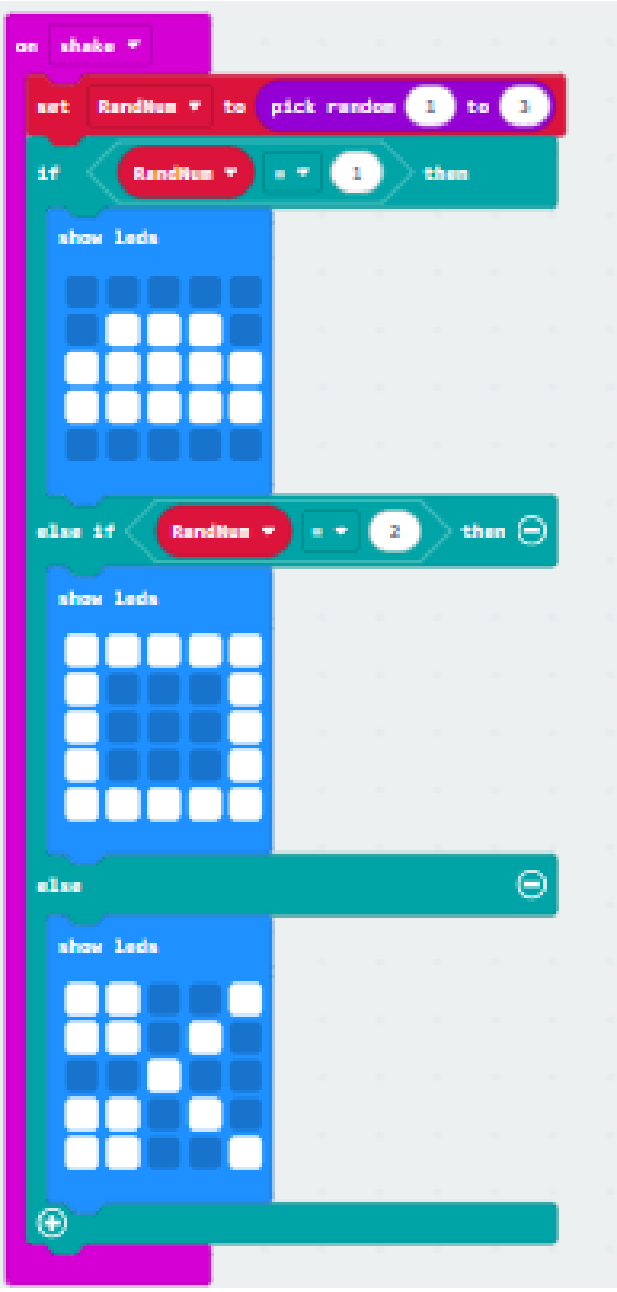


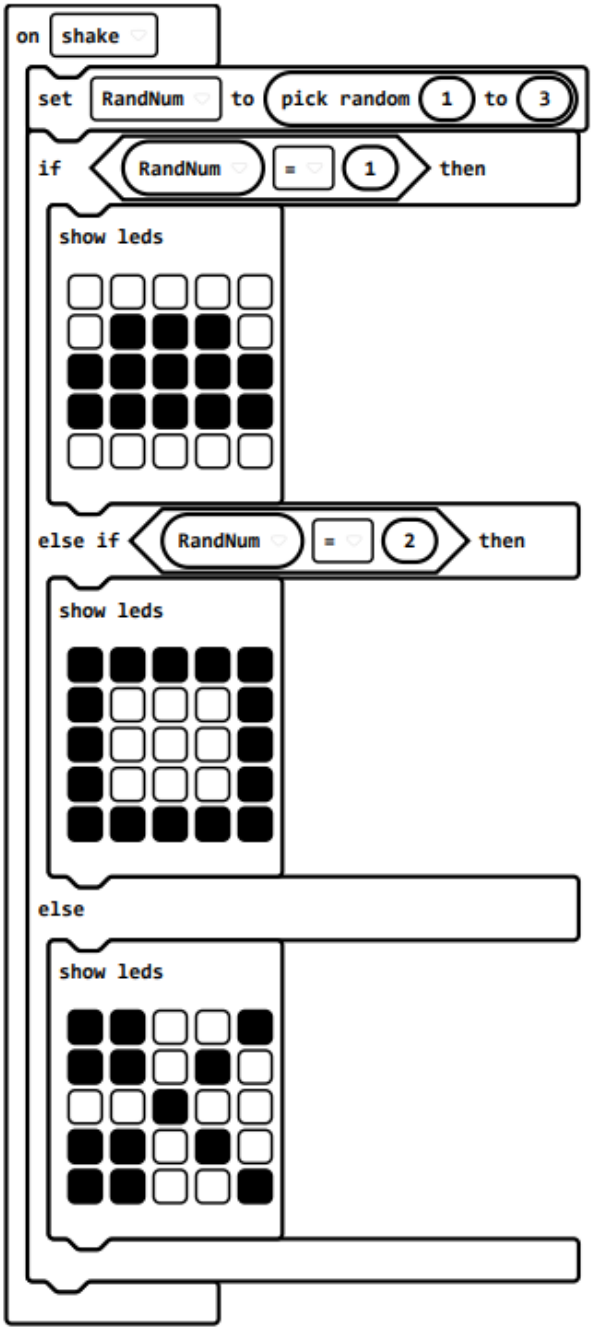
From Math :

Scroll down until you find **(Pick Random)** Block

Set the range of numbers From 1 to 3

This should be looks like when we finished :





6 - Programing Blocks (Drag and Drop Commands) Quiz:

Kahoot Quiz

7 – Your turn to make (Rock – Paper - Scissors) Game:

Now students should make the project in 20 minutes as a competition