Unit 7: The TI-RGB Array | **Skill Builder 2: A Rainbow of Color**

In this lesson, you will generate random colors on each of the LEDs on the TI-RGB Array.

Objectives:

- Use getKey( ) to end a program
- Use randInt( ) to light a random LED in a random color

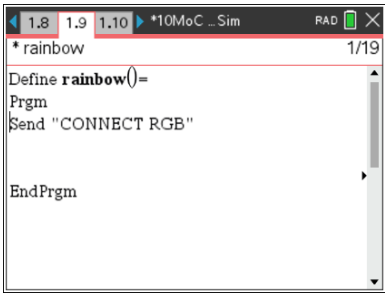
We will use the random number generator **randInt( )** to make random LEDs light up in random colors.

1. Start a new program - we called it **rainbow()** - and add

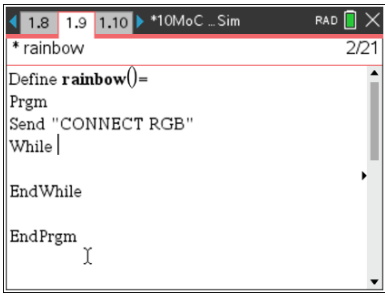
   Send "CONNECT RGB"

   Using **menu > HUB > Send "CONNECT-Output…** and select **RGB** from the next menu.

   Type the closing quote and parenthesis.

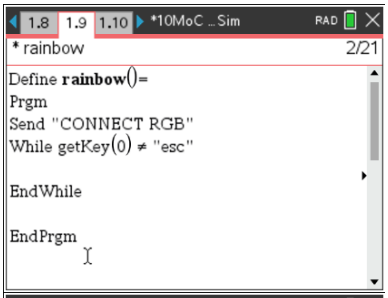


2. Add a **While… EndWhile** loop using **menu > Control > While…EndWhile**



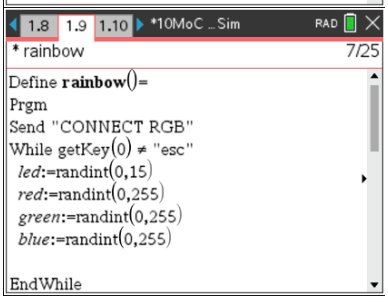
3. The loop will end when the **[esc]** key is pressed. The condition is:
   While **getkey(0) ≠ "esc"**

   ≠ is found on **ctrl =**
   type the quotes using [ctrl] [*] then the letters *esc*.



4. In the loop body write four statements to assign random integers to four variables representing the LED number and the red, green, and blue values.

   led **:= randInt(0, 15)**
   red **:= randInt(0, 255)**
   green **:= randInt(0, 255)**
   blue **:= randInt(0, 255)**

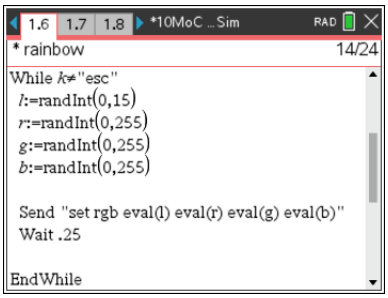


5. Add the **Send** statement to control one of the TI-RGB Array LEDs:

   Send "SET RGB eval(led) eval(red) eval(green) eval(blue)"

   and a **Wait** statement to slow the lights down:

   Wait .25



6. Press **ctrl-R** to run the program to see a wide variety of colors blinking.

   Press **[esc]** to stop the program. Notice that the LEDs are still lit even though the program has ended. Fix this by turning them off just after the **EndWhile** statement by adding the statement:

   EndWhile
   Send "SET RGB ALL 0 0 0"
   EndPrgm