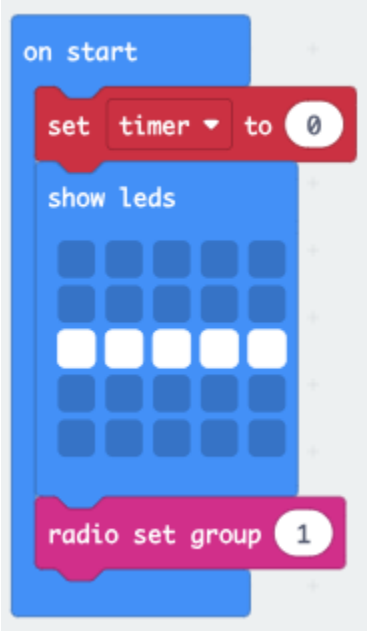
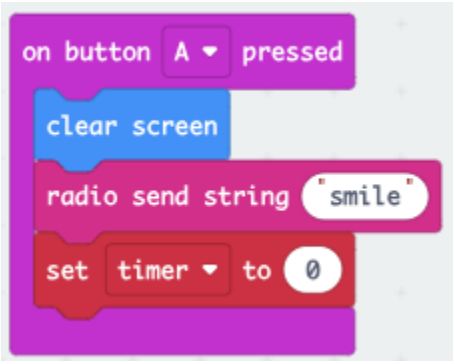
Micropet: spread a smile (https://makecode.microbit.org/S99589-08200-56952-85070)

1. **TO DO**: On start, set the timer to 0 seconds. Show a straight face on the screen. Set the number of your own radio group to ___. This sets the frequency of sound signals that you can send and receive.

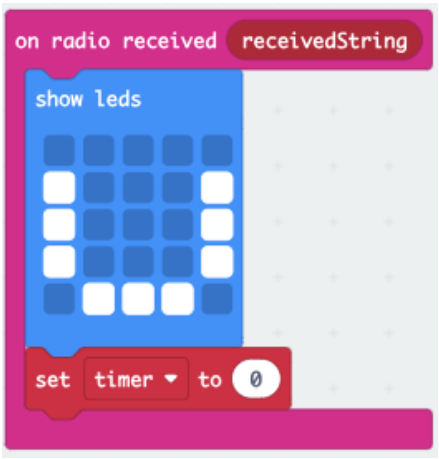


2. **TO DO**: When button A is pressed, make the face of the micropet disappear (clear the LED screen). Send a signal with a “smile” string. Reset the timer to 0.

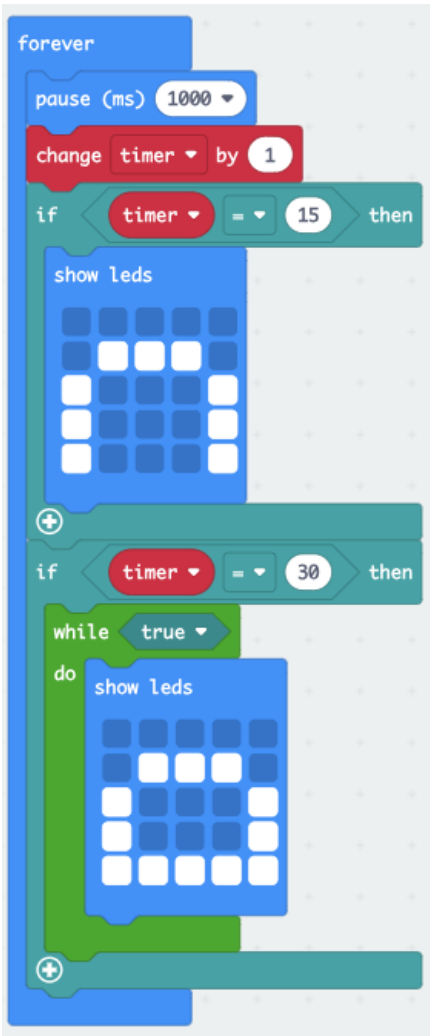


3. When button B is pressed, reset the micropet to ‘on start’ settings.

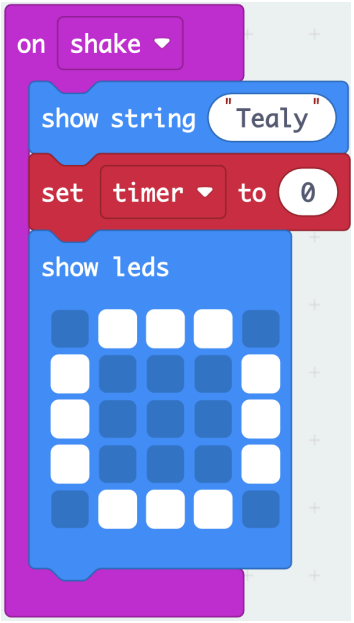
4. **TO DO**: When you receive a message (string), display a smiley face. Reset the timer to 0.



5. For every second passed, the timer is increased by 1 second. If the timer reaches 15 seconds, show a sad face. If 30 seconds passed, show a sadder face.



6. **TO DO:** On shake, show your name. Reset the timer to 0 seconds. Show a shocked face.



7. **CHALLENGE**: Can you send a hello message with your name to a friend, saying "___ says hi"? Make sure that you are able to show messages received on your own micropet as well.

   Hints

   1. You should modify two blocks: 'on button A pressed' and 'on radio receivedString'.
   2. The variable 'receivedString' contains the message that your friend has sent you.

Snake game (https://makecode.microbit.org/S15646-93614-80922-63090)

LED Positions (Coordinates)

Row = X
Column = Y
Position = (Row, Column)

Variables

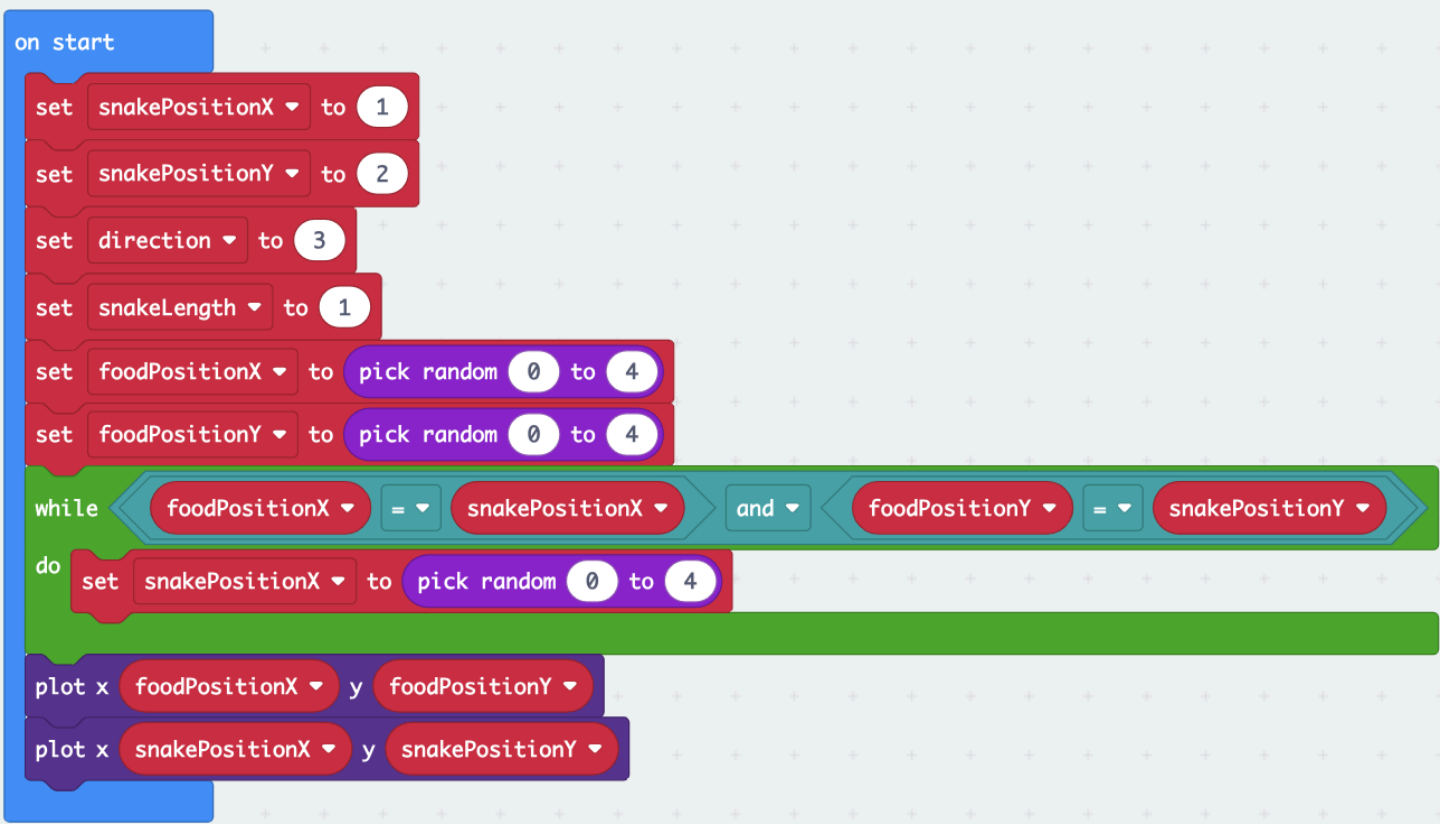
snakePositionX - the row of the position of the snake (0 to 4).
snakePositionX - the column of the position of the snake (0 to 4).
direction - the moving direction of the snake (left = 1, up = 2, right = 3, down = 4).
snakeLength - the length of the snake.
foodPositionX - the row of the position of the snake (0 to 4).
foodPositionX - the column of the position of the snake (0 to 4).

Functions

drawSnake - Updates the LED position of the snake on the screen.
eat - When the snake eats the food, it increases in length by 1.
reset - Sets the snake back to its original position.

TO DO 1: Snake Coordinates

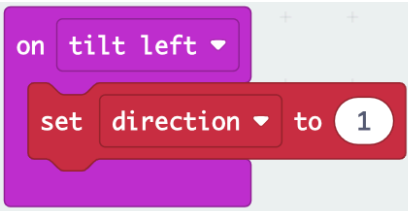
1. Set the starting position of the snake to row 1, column 2 (snakePositionX = 1 and snakePosition Y = 2).
2. Set the starting direction of the snake facing right (direction = 3).
3. Set the starting length of the snake to 1 (snakeLength = 1).
4. Draw/plot the starting position of the snake.



TO DO 2: Change the direction of the snake

Set the direction of the snake according to the following input.

1. Left



2. Up:

3. Right:

4. Down:

TO DO 3: Move the snake in the correct direction

The snake is moving and changing its position every second (1000ms).

1. Draw the snake by 

-> 

-> 

2. If the snake's direction is towards the left (direction = 1), change the row by -1.
3. If the snake's direction is upwards (direction = 2), change the column by -1.
4. If the snake's direction is towards the right (direction = 3), change the row by 1.
5. If the snake's direction is downwards (direction = 4), change the column by 1. (Note: direction is 4 since it is not 1, 2, or 3).

TO DO 4: Game over if the snake moves out of the screen

1. If the row and column positions of the snake are out of the LED, the game is over – show a sad face.
2. Show the score – which is the snake length.
3. Reset the game by calling the function ‘reset’.
4. If the positions of snake head and food are equal, the snake successfully eats the food. Do this by calling the function ‘eat’.