

Worksheet 21st February

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).

snakePositionY - 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).

foodPositionY - the column of the position of the snake (0 to 4).

Functions

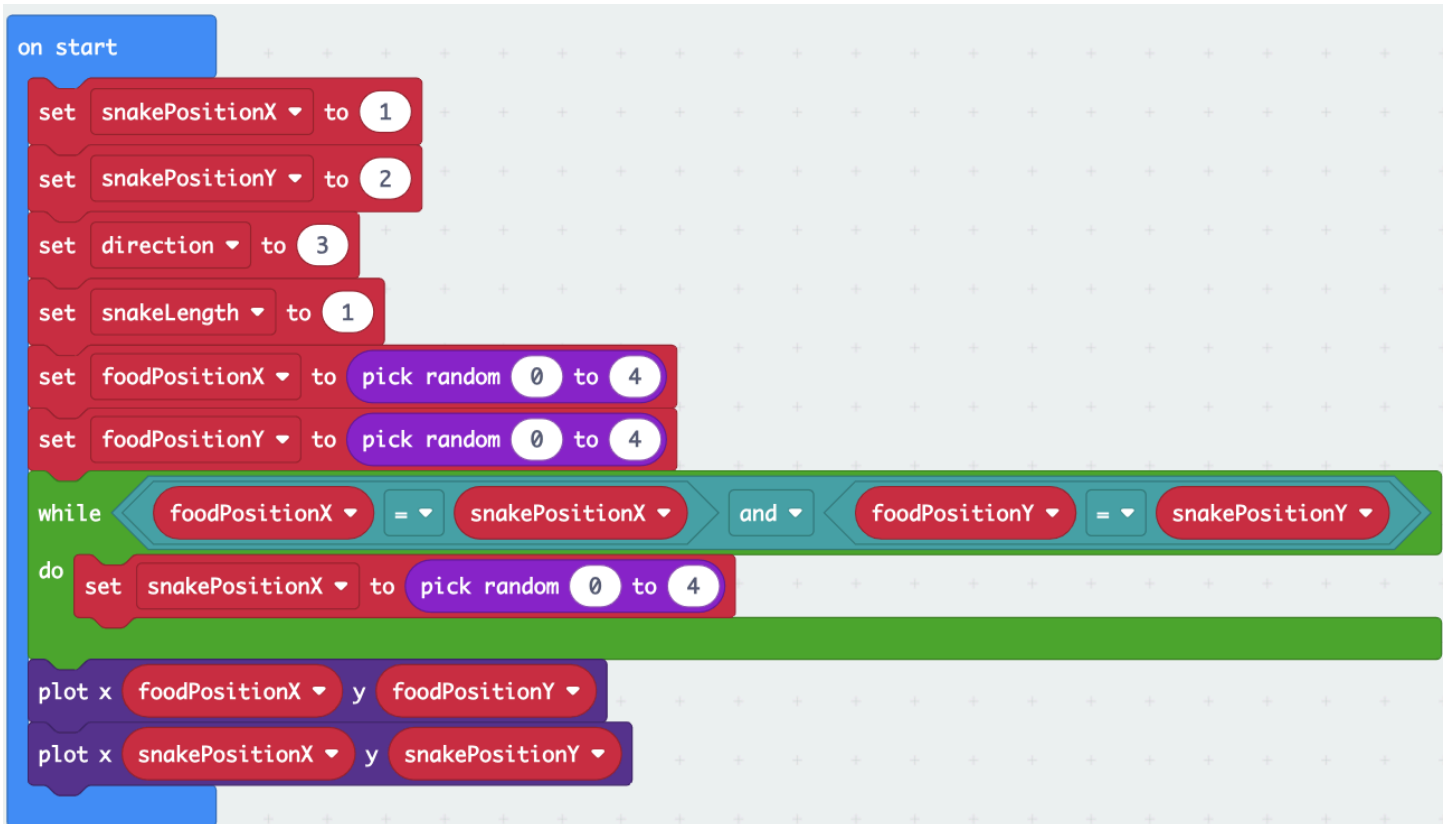
drawSnake - Updates the LED position of the snake on the screen.

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

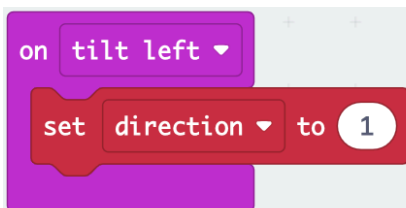
1. Set the starting position of the snake to row 1, column 2 (snakePositionX = 1 and snakePositionY = 2).
2. Set the starting direction of the snake facing right (direction = 3).
3. Set the starting length of the snake to 1 (snakeLength = 1).
4. Draw/plot the starting position of the snake.



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'.

