

Lesson 3: Worksheet 3.1 – Turn right

In this activity, you need to write a program that will make your Edison robot turn right.

Look at the following program:

```
1
2 #-----Setup-----
3
4 import Ed
5
6 Ed.EdisonVersion = Ed.V2
7
8 Ed.DistanceUnits = Ed.CM
9 Ed.Tempo = Ed.TEMPO_MEDIUM
10
11 #-----Your code below-----
12 degreesToTurn = 90
13 Ed.Drive(Ed.SPIN_RIGHT, Ed.SPEED_6, degreesToTurn)
14
```

Look at line 13 of the program. Remember that the `Ed.Drive` function has three input parameters: direction, speed, and distance. In this program, the distance parameter is not a number but is 'degreesToTurn'.

This is a variable.

In Python, variables are reserved memory locations to store values. This means that when you create a variable, you reserve some space in the program's memory.

A variable represents a value that is set somewhere in your program.

Look at line 12 of the program. This is where the value of 'degreesToTurn' is being set. This is called assigning a value to a variable. In Python, the equal sign (=) is used to assign values to variables.

You can use variables to store values that are used in several places throughout a program. This can be very helpful, especially if the value of a variable changes. By using variables, you only need to make the change in one line of the code to adjust the value everywhere that variable is being used in your program.

Your turn:

Write the program, then download and run the program with your Edison. Use activity sheet 3.1 or coloured tape to mark 'start' and 'end' angle marks on a desk or the floor as a test area for your program.

1. Describe what the robot does and why it does this when you run the program.

Name _____

Add a new line to the end of your program (after line 13) and add the following code to your program:

```
Ed.Drive(Ed.SPIN_LEFT, Ed.SPEED_6, degreesToTurn)
```

Download and run the program with your Edison in your test area.

2. Describe what the robot does and why it does this when you run the updated program.

Now edit your program so that your Edison will first turn 180 degrees to the right, then 180 degrees to the left.

Hint: Remember you can change the value of the degreesToTurn variable.

Download and run your updated program with your Edison in your test area to see if your change was successful.

3. What line or lines in your program did you change? Write down the updated line or lines.

Variable names must follow certain rules in Python. For example, no special characters like # or \$ are allowed. Try changing the name of the variable 'degreesToTurn'. Experiment with different possible names and use the 'Check Code' button to find which names are allowed and which are not.

4. Give two examples of illegal variable names you discovered.