

Python Syntax Quick Reference for Path to STEM Projects Unit 3

TI-NSPIRE™ CXII PYTHON

Function	Example	Behavior
<code>from module_name import *</code>	<code>from ti_hub import *</code>	Imports all the functions in the ti_hub module for use in the program. The ti_hub module includes all the necessary additions needed for the Path to STEM Projects.
<code>var=analog_out("port")</code>	<code>switch=analog_out("BB 4")</code>	Controls an output device through a port, in this example, "BB 4". To find, "analog out", go to 8. TI Hub, 4. Add Output Device, 7. Analog Out.
<code>for index in range(stop value):</code> block	<code>for n in range(10):</code>	Repeats the statements in the block 10 times, If n is less than the stop value, 10, the loop continues to repeat. The block starts with a colon and includes the indented lines that follow.
<code>var=int(input("text"))</code>	<code>speed=int(input("ENTER OUTPUT VALUE"))</code>	To generate a prompt in your program, an input is needed (found under "4. Built-ins", "6. I/O"). If your input requires a number, like the example, choose from either int (integer) or float (decimal) found under "4. Built-ins", "5. Type". Define this line as a variable (in the example, it is "speed") so it can be used later when setting the speed in this example.
Input var.(option)	<code>a=switch.measurement()</code>	When using a defined analog output variable, such as the example "speed", pressing the decimal key right after "speed" will cause options to appear in a drop down list. These options include "measurement" (where the digital input value is measured), "set(value)" (where the user can assign a numeric value or numeric variable), "off()", and "on()". In the example, .set() is used to assign the speed of the motor.
<code>while var(Boolean)var:</code> block	<code>while n<speed:</code> <code>motor.set(n)</code> <code>print("analog out is set to",n)</code> <code>n+=1</code> <code>sleep(.1)</code>	while loops repeat the statements in the block if the condition at the top of the loop is true. In the example, looping continues until the variable "n" is equal to or greater than "speed". The following lines, "motor.set(n)" and <code>n+=1</code> is a way to build the motor's speed by 1 each loop.

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<code>text_at(vertical position,"text","horizontal position")</code>	<code>text_at(6,"RED","left")</code>	text_at is similar to "print" but enables a user to specify the row that the text should display on the calculator screen (1 through 8), and the horizontal position of the message (right, center, left).
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See TI-Innovator Hub Technology eGuide for more background on Hub-specific commands – [Link](#)

See TI-Nspire CXII Python Programming eGuide for more background on Python commands - [Link](#)