

Pseudocode Guide

Pseudocode has a limited command set. Many of these commands have similar equivalents in Python. Some don't.

You need to be able to understand a program when it is written in pseudocode, so you need to be familiar with it.

Pseudocode commands are shown in CAPITAL LETTERS.

Variables, input and output

Description	Syntax	Python equivalent
Setting a variable to a value	SET count TO 0 SET myString TO 'Hello World' SET name TO 'Anne' SET score TO score + 1	count = 0 myString = "Hello World" name = "Anne" score = score + 1
Input a value	RECEIVE theName FROM (STRING) KEYBOARD RECEIVE price FROM (INTEGER) CARD_READER The type of data is specified here. Data types can be: <ul style="list-style-type: none">• INTEGER• REAL – i.e. float (21.45)• BOOLEAN – True or False• CHARACTER – a single character• STRING• ARRAY	theName = input("Enter a name")
Output a value	SEND "Hello World" TO DISPLAY SEND score TO DISPLAY SEND "Your score is " & score TO DISPLAY Use & to concatenate	print("Hello World") print(score) print("Your score is " + str(score))

Example program

```
RECEIVE theName FROM (STRING) KEYBOARD
SET lives TO 3
SET level TO 1
SEND "Hello " & theName TO DISPLAY
```

Selection – using IF

Description	Syntax	Python equivalent
Simple IF – THEN block	<pre>IF lives = 0 THEN SEND "Game Over" TO DISPLAY END IF IF bubblePopped THEN SET score To score + 1 end IF</pre>	<pre>if lives == 0: print("Game Over") if bubblePopped: score = score + 1</pre>
IF – THEN – ELSE block	<pre>IF theAnswer = 42 THEN SEND "Well done" TO DISPLAY SET score TO score + 10 ELSE SEND "Incorrect" TO DISPLAY SET lives TO lives - 1 END IF</pre>	<pre>if theAnswer == 42: print("Well Done") score = score + 10 else: print("Incorrect") lives = lives - 1</pre>

Example program:

```
RECEIVE height FROM (INTEGER) KEYBOARD
IF height > 120 THEN
    SEND "You may go on this ride" TO DISPLAY
ELSE
    SEND "You are too short for this ride" TO DISPLAY
END IF
```

Loops

Repeat loops have no python equivalent.

Description	Syntax	Python equivalent
While loop Repeats loop body until the condition is true. Loop may not repeat once (if condition is True before the loop is entered)	WHILE score <> 10 DO SET score TO score + 1 END WHILE	while score != 10: score = score + 1
Repeat loop Condition at end of loop. Repeats loop until condition is true. Must execute at least once because the condition is at the end of the loop	REPEAT GET age FROM (INTEGER) KEYBOARD UNTIL age >= 18	Use a while loop to control this. The condition will need to be reversed age = int(input("Enter age")) while age < 18: age = int(input("Enter age"))
Repeat loop with set number of times to repeat	REPEAT LENGTH(name) TIMES SEND name TO DISPLAY END REPEAT	Use a simple for loop: for i in range(len(name)): print(name)
For loop	FOR index FROM 0 TO 9 DO SEND numberArray[index] TO DISPLAY END FOR	for index in range(0, 10): print(numberArray[index])
For loop with a step	FOR i FROM 0 TO 100 STEP 10 DO SET score TO score + i END FOR	for i in range(0, 100, 10): score = score + i
For Each loop – used for passing over an array	FOR EACH word FROM wordArray DO SEND word TO DISPLAY END FOREACH	for word in wordArray: print(word)

Example programs:

```
RECEIVE password FROM (STRING) KEYBOARD  
WHILE password <> "cliffpark" DO  
    SEND "Incorrect password" TO DISPLAY  
    RECEIVE password FROM (STRING) KEYBOARD  
END WHILE
```

```
RECEIVE theWord FROM (STRING) KEYBOARD  
FOR i FROM 1 TO LENGTH(theWord)  
    SEND theWord[i] TO DISPLAY  
END FOR
```

Arrays

Pseudocode arrays start at index 0.

Python generally implements arrays using lists.

Description	Syntax	Python equivalent
Initialise a simple array with a set of values	SET myArray TO [1, 2, 3, 4, 5]	myArray = [1, 2, 3, 4, 5]
Assign a value to an element in an array	SET myArray[3] TO 17	myArray[3] = 17
Assign a value to an element in a two dimensional array	SET classMarkArray[2, 4] TO 92	classMarkArray[2, 4] = 92

Example program:

```
SET seasonArray TO ["Winter", "Spring", "Summer", "Fall"]  
SET seasonArray[3] TO "Autumn"
```