



i116 Basic of Programming - 1. Some program constructs (1)

What is programming?

- To write documents called *programs* in a language called *a programming language*, such as Java, C and Python.
- In a program, we write what we would like a computer to do, such as calculation of approximate values of √2 and π and making it possible to create cool presentation slides as the ones I am using.



i116 Basic of Programming - 1. Some program constructs (1)

What is programming?

• Let us suppose that we would like to calculate 5!.

5! = 5 * 4 * 3 * 2 * 1 * 1

• Let's write a program that calculates 5!.









What is programming?

What we have just seen can be written as a program in a programming language!

redBox = 1
blueBox = 1
while blueBox < 5 or blueBox == 5:
redBox = redBox * blueBox
blueBox = blueBox + 1</pre>



















i116 Basic of Prog	ramming - 1.	Some program constructs (1)			1	
		for (loop) statements					
	for	variable	in	ordered co	llection]:	
	1	block (fragment)					
The spaces or tabs (namely <i>indentations</i>) are extremely important.							
A string, such as 'JAIST', is an example of ordered collection.							
Let <i>N</i> be the number of elements in <i>ordered collection</i> .							
What is written in <i>block</i> is done repeatedly <i>N</i> times.							
In the <i>i</i> th iteration, the <i>i</i> th element is put in <i>variable</i> . <i>variable</i> can be used in <i>block (fragment)</i> .							





```
1116 Basic of Programming - 1. Some program constructs (1)

for (loop) statements

s = 'JAIST'

r = "

for c in s:

r = c + r

print('The reverse of ' + s + ' is ' + r + '.')

The two programs are different!

s = 'JAIST'

r = "

for c in s:

r = c + r

print('The reverse of ' + s + ' is ' + r + '.')
```











