Introduction to Programming

2017 Fall Midterm

범위는 Lecture 1(Python Basic), Lecture 2(Conditions, while-loop), Lecture 3(Variables, Types), Lecture 4(Functions), Lecture 5(Local/Global Variables, Graphical Objects) 입니다.

Python Basic

다음 단어에 대한 간단한 설명을 써라.

1	Program Sequence of instructions
2	Instructions Operations that the computer can already perform
3	Debugging Find the mistake and fix it.
4	Syntax Error Grammatically wrong code; Python cannot understand the program
5	Runtime Error While executing the program, the program suddenly terminates with an error.
6	Semantic Error The program runs without error messages, but the result is not supposed to do.

Operations

다음 코드의 결과값을 예상하라.

1	a = 3/2 print(a) 1.5
2	a = 5/3*3 print(a) 5.0
3	a = 5//3*3 print(a) 3
4	a = 3*3**3 print(a) 81

5	a = 5/(2//3) print(a) Error
6	a = 3+6/2 print(a) 6.0
7	a = 3 == 2 print(a) False
8	a = (100, 200) b = (100, 200) print(a == b) True
9	a = (100, 200) b = (100, 200) print(a is b) False
10	a = (100, 200) x = a y = a print(x is y) True
11	a = 'str' print(type(a)) <class 'str'>
12	a = (1,2,3) print(type(a)) <class 'tuple'>
13	a = (1.23) print(type(a)) <class 'float'>
14	x = 7 y = "7" print(x == y) False
15	x = 7 y = 7.0 print(x == y) True
16	x = 7 y = 7.0 print(x == y and not y == 7) False
17	x = True y = False print(x and y) False
18	x = True y = False print(x or y) True
19	x = True

	y = False print(x and not y) True
20	a = 3 + 6j print(type(a)) <class 'complex'>
21	a = "Hello" b = " World" print(a + b) Hello World
22	a = "hi " print(a*3) hi hi hi
23	a = "hi " b = 12 print(a + b) Error
24	a = 12 b = 13 print(a + b) 25
25	x = "quality" y = "quantity" print(x>y) False
26	x = "quality" y = "quali" print(x>y) True

Tuple

다음 코드의 결과값을 예상하라

1	a = (100, 200) print(a) (100, 200)
2	a = (100) print(type(a)) <class 'int'>
3	a = (100, 200, 300) print(a[1]) 200
4	a = (100, 200, 300) a[1] = 0 print(a) Error
5	a = (10, 20, 30, 40, 50) print(a[-1]) 50

6	a = (10, 20, 30, 40, 50) print(a[5]) Error
7	a = (10, 3.5, 'xy') x, y, z = a print(y) 3.5
8	a = (10, 3.5, 'xy') x, y = a Error print(y)

If-statement

다음 코드의 결과값을 예상하라

1	b = False
	if b:
	  print("Hi~")
	else:
	  print("so sad...") so sad...

2	b = None
	if b:
	  print("You got F")
	else:
	  print("You got A+") You got A+

3	count = 0
	if not count:
	  print("not count") not count
	else:
	  print("count")

4	A = 90
	B = 80
	C = 70
	score = 85
	if score > A:
	  print("A")
	if score > B:
	  print("B") B
	if score > C:
	  print("C") C

5	A = 90
	B = 80
	C = 70
	score = 85
	if score > A:
	  print(“A”)
	elif score > B:
	  print(“B”) B
	elif score > C:
	  print(“C”)

For-loop

다음 코드의 결과값을 예상하라

1	for i in range(3): print(i) 0₩n1₩n2 Note: ₩n 은 줄 바꿈
2	for i in range(2, 5): print(i) 2₩n3₩n4
3	for i in range(3, 9, 2): print(i**2) 9₩n25₩n49
4	for i in range(5, -1, -2): print(i) 5₩n3₩n1

5	for i in range(5):
	  print(i+3) 3₩n4₩n5₩n6₩n7
	  i += 2

6	for i in (1,5,9): print(i-1) 0₩n4₩n8

While-loop

다음 코드의 결과값을 예상하라

1	n = 3
	while(n>1):
	  print(n) 3₩n2
	  n -= 1

2	n = 3 while(n): print(n) 3₩n2₩n1 n -= 1

Function

다음 코드의 결과값을 예상하라

1	def f(s): print(s) f('hi') hi
2	def f(s): print('s') f('hi') s
3	def f(s): print(s) print(f('hi')) hi₩nNone

4	def g(t):
	m = t[0]
	for i in t:
	if i > m: m = i
	return m
	a = (0,1,2,3,6,5,4)
	print(g(a)) 6

5	def f(a):
	if a == 0:
	return 1
	return f(a-1) * a
	print(f(5)) 120

6	def f(a, n):
	if n == 0:
	return (a)
	return (a, f(a, n-1))
	print(f(3,3)) (3, (3, (3, 3)))

Global Variable

다음 코드의 결과값을 예상하라

1	a = 0
	b = 0
	def f(a):
	  a = 3
	  b = 3
	f(a)
	print(a) 0
	print(b) 0

2	a = 0
	b = 0
	def f(a):
	  global b
	  a = 3
	  b = 3
	f(a)
	print(a) 0
	print(b) 3

3	a = 0
	b = 0
	def f(a):
	  global a, b Error
	  a = 3
	  b = 3
	f(a)
	print(a)
	print(b)

4	a = 0
	b = 3
	def f():
	  global b
	  b = a
	f()
	print(a) 0
	print(b) 0

5	x = True y = True z = 0

	def set():
	  global z
	  z += 1
	  return True
	x == y and set()
	print(z) 1

6	x = True
	y = False
	z = 0
	def set():
	  global z
	  z += 1
	  return True
	x == y and set()
	print(z) 0

7	x = True
	y = True
	z = 0
	def set():
	  global z
	  z += 1
	  return True
	x == y or set()
	print(z) 0

8	x = True
	y = False
	z = 0
	def set():
	  global z
	  z += 1
	  return True
	x == y or set()
	print(z) 1