(1) Use print() and input() With int()

In [ ]:
```
'''
Write a program that:

(1) Requests the user’s first name;
(2) Requests the user’s last name; and
(3) Prints the message:

Hello ### ###
Welcome to the world of Python!

>>>
Enter your first name: Blake
Enter your last name: Pappas
Hello Blake Pappas
Welcome to the world of Python!
'''
```

In [1]:
```
fname = input('Enter your first name: ')
lname = input('Enter your last name: ')
print('Hello ' + fname + ' ' + lname)
print('Welcome to the world of Python!')
```

```
Enter your first name: Blake
Enter your last name: Pappas
Hello Blake Pappas
Welcome to the world of Python!
```

In [ ]:
```
'''
Write a program that:

(1) Requests the user’s first name;
(2) Requests the user’s last name; and
(3) Prints the message:

'Hello ### ###'
'Welcome to the world of Python!'

>>>
Enter your first name: Blake
Enter your last name: Pappas
'Hello Blake Pappas'
'Welcome to the world of Python!'
'''
```

In [2]:
```
fname = input('Enter your first name: ')
lname = input('Enter your last name: ')
print("'Hello " + fname + ' ' + lname + "'")
print("'Welcome to the world of Python!'")
```

```
Enter your first name: Blake
Enter your last name: Pappas
```

```
'Hello Blake Pappas'
'Welcome to the world of Python!'
```

In [ ]:
```
'''
Write a program that:

(1) Requests the user’s name;
(2) Requests the user’s age; and
(3) Computes the user’s age one year from now and prints the message:

>>>
Enter your name: Blake
Enter your age: 23
Blake, you will be 24 next year!
'''
```

In [3]:
```
name = input('Enter your name: ')
age = input('Enter your age: ')
print (name + ', you will be ' + str(int(age) + 1) + ' next year!')
```

```
Enter your name: Blake
Enter your age: 23
Blake, you will be 24 next year!
```

(2) One-Way If Statements

In [ ]:
```
'''
Write a program that:

(1) Requests the user's age; and
(2) If "age" is greater than 62, prints:

You can get Social Security benefits!

If "age" is not greater than 62, prints nothing.

>>>
Enter your age: 64
You can get Social Security benefits!

>>>
Enter your age: 60
'''
```

In [5]:
```
age = input('Enter your age: ')
if int(age) > 62:
    print('You can get Social Security benefits!')
```

```
Enter your age: 64
You can get Social Security benefits!
```

In [ ]:
```
'''
Write a program that:
```

```
(1) Requests the user's age; and
(2) If "age" is greater than 62, prints:

You can get Social Security benefits!
Goodbye.

If "age" is not greater than 62, prints:

Goodbye.

>>>
Enter your age: 64
You can get Social Security benefits!
Goodbye.

>>>
Enter your age: 60
Goodbye.
'''
```

In [6]:

```
age = input('Enter your age: ')
if int(age) > 62:
    print('You can get Social Security benefits!')
    print('Goodbye.')
else:
    print('Goodbye.')
```

```
Enter your age: 64
You can get Social Security benefits!
Goodbye.
```

In [ ]:

```
'''
Write a program that:

(1) Inputs 'We have large bonuses in this year!' to a variable "report"; and
(2) If string 'large bonuses' appears in the variable "report", prints:

Vacation time!
'''
```

In [7]:

```
report = 'We have large bonuses this year!'
if 'large bonuses' in report:
    print('Vacation time!')
```

```
Vacation time!
```

In [ ]:

```
'''
Write a program that:

(1) Inputs 20 to a variable hits;
(2) Inputs 0 to a variable shield; and
(3) If the variable "hits" is greater than 10 and the variable "shield" is 0, prints:

You're dead...
'''
```

In [8]:
```
hits = 20
shield = 0
if hits > 10 and shield == 0:
    print("You're dead...")
```

```
You're dead...
```

(3) Two-Way If Statement

In [ ]:
```
'''
Write a program that:

(1) Requests the current temperature; and
(2) Prints two different messages:

If the temperature is higher than 86, prints:

It is hot!
Be sure to drink liquids.
Goodbye.

If the temperature is lower than or equal to 86, prints:

It is not hot!
Bring a jacket.
Goodbye.

>>>
Enter current temperature: 90
It is hot!
Be sure to drink liquids.
Goodbye.

>>>
Enter current temperature: 80
It is not hot!
Bring a jacket.
Goodbye.
'''
```

In [9]:
```
temp = input('Enter current temperature: ')
if int(temp) > 86:
    print('It is hot!')
    print('Be sure to drink liquids.')
else:
    print('It is not hot!')
    print('Bring a jacket.')
print('Goodbye.')
```

```
Enter current temperature: 90
It is hot!
Be sure to drink liquids.
Goodbye.
```

In [ ]:
```
'''
Write a program that:

(1) Requests the user’s name;
(2) Requests the user’s age; and
(3) Prints a message saying whether the user is eligible (i.e. age >= 18) to vote or no

If the user's age is greater than or equal to 18, prints:

###, you can vote.

If the user's age is smaller than 18, prints:

###, you can't vote.

>>>
Enter your name: Marie
Enter your age: 17
Marie, you can't vote.

>>>
Enter your name: Blake
Enter your age: 23
Blake, you can vote.
'''
```

In [10]:
```
name = input('Enter your name: ')
age = input('Enter your age: ')
if int(age) >= 18:
    print(name + ', you can vote.')
else:
    print(name + ", you can't vote.")
```

```
Enter your name: Blake
Enter your age: 23
Blake, you can vote.
```

(4) For Loop Statement

In [ ]:
```
'''
Write a “spelling” program that:

(1) Requests a word from the user; and
(2) Prints the characters in the word from left to right, one per line.

>>>
Enter a word: clemson
The word spelled out:
c
l
e
m
s
o
```

```
n
'''
```

In [11]:
```
word = input('Enter a word: ')
print('The word spelled out: ')
for var in word:
    print(var)
```

```
Enter a word: clemson
The word spelled out:
c
l
e
m
s
o
n
```

In [ ]:
```
'''
Write a “spelling” program that:

(1) Requests a list from the user; and
(2) Prints the items in the list from left to right, one per line.

>>>
Enter a list: ['apple', 'pear', 'strawberry']
The word spelled out:
apple
pear
strawberry
'''
```

In [12]:
```
lst = input('Enter a list: ')
print('The word spelled out: ')
for w in eval(lst):
    print(w)
```

```
Enter a list: ['apple', 'pear', 'strawberry']
The word spelled out:
apple
pear
strawberry
```

(5) Using the range() Function to Write For Loops That Will Print the Following Sequences:

In [ ]:
```
# 0, 1, 2, 3, 4, 5, 6, 7, 8 , 9, 10
```

In [13]:
```
for n in range(11):
    print(n)
```

```
0
1
2
```

```
3
4
5
6
7
8
9
10
```

In [ ]:
```
# 1, 2, 3, 4, 5, 6, 7, 8, 9
```

In [14]:
```
for n in range(1, 10):
    print(n)
```

```
1
2
3
4
5
6
7
8
9
```

In [ ]:
```
# 0, 2, 4, 6, 8
```

In [15]:
```
for n in range(0, 9, 2):
    print(n)
```

```
0
2
4
6
8
```

In [ ]:
```
# 1, 3, 5, 7, 9
```

In [16]:
```
for n in range(1, 10, 2):
    print(n)
```

```
1
3
5
7
9
```

In [ ]:
```
# 20, 30, 40, 50, 60
```

In [17]:
```
for n in range(20, 61, 10):
    print(n)
```

```
20
30
40
```

```
50
60
```

(6) Defining New Functions

In [ ]:
```
'''
Write function hello() that:

(1) Takes a name (i.e., a string) as input; and
(2) Prints a personalized welcome message (i.e. Welcome, ###, to the world of Python.)

>>> hello('Julie')
Welcome, Julie, to the world of Python.
'''
```

In [18]:
```
def hello(name):
    print('Welcome, ' + name + ', to the world of Python.')
```

In [19]:
```
hello('Julie')
```

```
Welcome, Julie, to the world of Python.
```

In [ ]:
```
'''
>>> hello('Julie', 'How are you?')
Welcome, Julie, How are you?

>>> hello('Julie')
Welcome, Julie, to the qworld of Python.
'''
```

In [20]:
```
def hello(name, msg = 'to the world of Python.'): # Takes two values. However, only nee
    print('Welcome, ' + name + ', ' + msg)
```

In [21]:
```
hello('Julie')
```

```
Welcome, Julie, to the world of Python.
```

In [ ]:
```
'''
Write function rng() that:

(1) Takes a list of numbers as input; and
(2) Returns the range of the numbers in the list

>>> rng([4, 0, 1, -2])
6
'''
```

In [22]:
```
def rng(lst):
    r = max(lst) - min(lst)
    return r
```

In [23]:
```
rng([4, 0, 1, -2])
```

Out[23]: 6