

Defining a Function

1.**define** 2.**function name** 3.**paranthesis**

↑ ↑ ↑

def **my_function** **()** **:** → 4.**colon**

→ **Indentation** print "hello from my function!"



```
def my_function () :  
    print "hello from my function!"
```

Calling the Function

```
my_function()
```

Write name of the
function and put the
paranthesies

hello from my function

ENGR 101 - Study Questions (Week 3)

1. Find and correct all the errors in the code below:

```
x=10
function f()
    y=2
    x = x+1
print x, y
```

2a. What is the output of the followings?

```
sum_two_numbers(8,16)
```

```
sum_two_numbers(3,4)
```

```
def sum_two_numbers(a,b):  
    print a+b
```

2b.What is the output of the followings?

```
sum_two_numbers(a,b)  
sum_two_numbers(3,4)
```

```
a = 4  
b = 5  
def sum_two_numbers(a,b):  
  
    print a+b
```

2c.What is the output of the followings?

```
sum_two_numbers(a,b)  
sum_two_numbers(3,4)
```

```
a = 4  
b = 5  
def sum_two_numbers(a,b):  
    a = 2  
    b = 3  
    print a+b
```

3. The general formula for the n^{th} term of an arithmetic sequence is $a_n = a_1 + (n-1)d$. Given a sequence with $a_1 = 3$ and $d = 2$, write a Python function to find the n^{th} term of the sequence. Use your function to find the 99th term.

4. The sum of internal angles of a polygon is given by $(n-2)*180$ degrees where n is the number of sides of the polygon. Define a function `reg_polygon_internal` that takes an integer n as an argument and prints the degree measure of an internal angle of the n -sided **equilateral** polygon. Some common polygons you can test your function with: triangle ($n=3$), square ($n=4$), pentagon ($n=5$), and octagon ($n=8$).

5. A function takes two arguments and prints its output. When given 25 and 5 as argument, it prints 625; and when the arguments are "PYTHON" and 2, it prints out "PYTHONPYTHONPYTHONPYTHON". How would you define such a function?

6. Write a function that takes four arguments x_1 , y_1 , x_2 , y_2 where each (x, y) pair refers to a point on a 2D Cartesian plane and prints the distance between the two points (x_1, y_1) and (x_2, y_2) . You are encouraged to use functions from the math module.

8. What is the output of the following? Assume math module has been imported.

- max("sehir")

- abs(pow(-5, 3))

- 211*len("engr")

- math.sin(math.radians(math.pi/2)**2)+ math.cos(math.radians(math.pi/2)**2))

9. Do some magic using 5, 9, 3, 1, 8 once and end up with 198885.

10. The simple interest I on an investment P made at an annual interest rate of $r\%$ for a time period of t years is given by $I = Prt$. Write a function *simple_interest* that takes three arguments P , r , and t and prints the interest generated by the investment.

11. Write a function that takes as arguments the width and the height of a rectangle and computes the rectangle's area and perimeter. When you run your program the result should look like this:

E.g. for input (5,4):

The rectangle's area is 20.

The rectangle's perimeter is 18.

12. Write a function that takes an input in kilometers, and prints to the screen this input written in miles. The conversion formula is:

$$\text{Miles} = \text{Kilometers} * 0.6214$$

13. Write a function named `twice()` that takes one argument and prints it twice to the screen. Now write another function that takes two argument, concatenates them (careful with the type of your input) and uses the function `twice()` to write it twice in the screen. It should work even when the inputs are numbers.

14. What is the output of the following code:

```
import math
x = math.sqrt(9) + math.sqrt(25)

print x
```

15. Where is the error in the following code:

```
def square(x):  
    y=x*x  
    print "Value of x squared is" + str (y)  
  
z = square(10)  
print(y)
```

16. Write a function that takes a string and an integer as input (string, y). The function should print the string y times, and each time the string should be written in a new line.

17. Using the variable `x = "I like "` write a function that will print out a list of your three favorite fruits.

E.g. For inputs `("apple","orange","banana")` it should print

I like apple

I like orange

I like banana

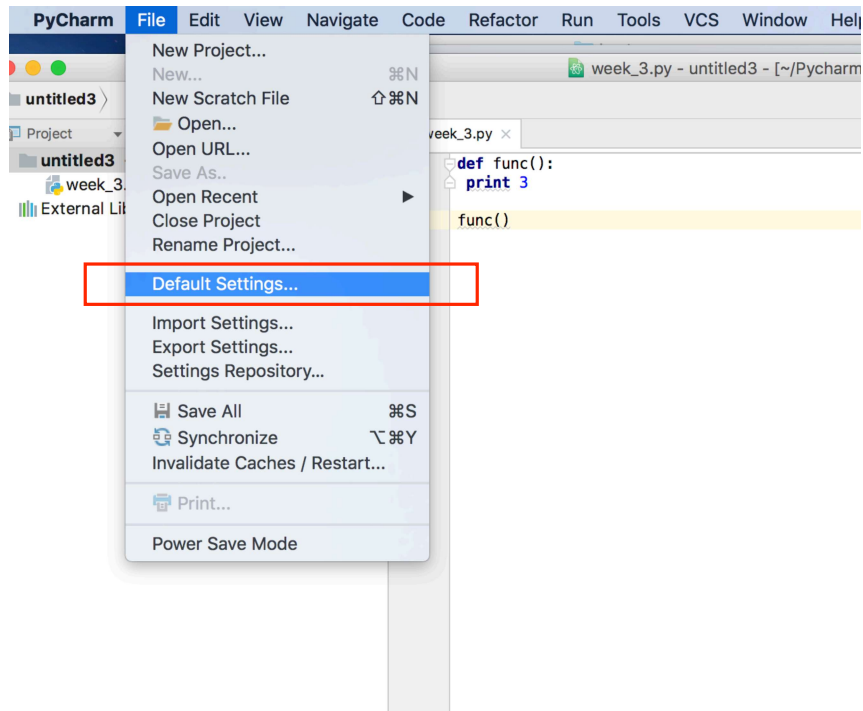
18. Write a function that takes three arguments the hours, minutes and seconds representing the current time, and converts the given time to seconds.

19. Given sides a and b of a right triangle write a function to compute the hypotenuse using the Pythagoras theorem $a^2+b^2=c^2$.

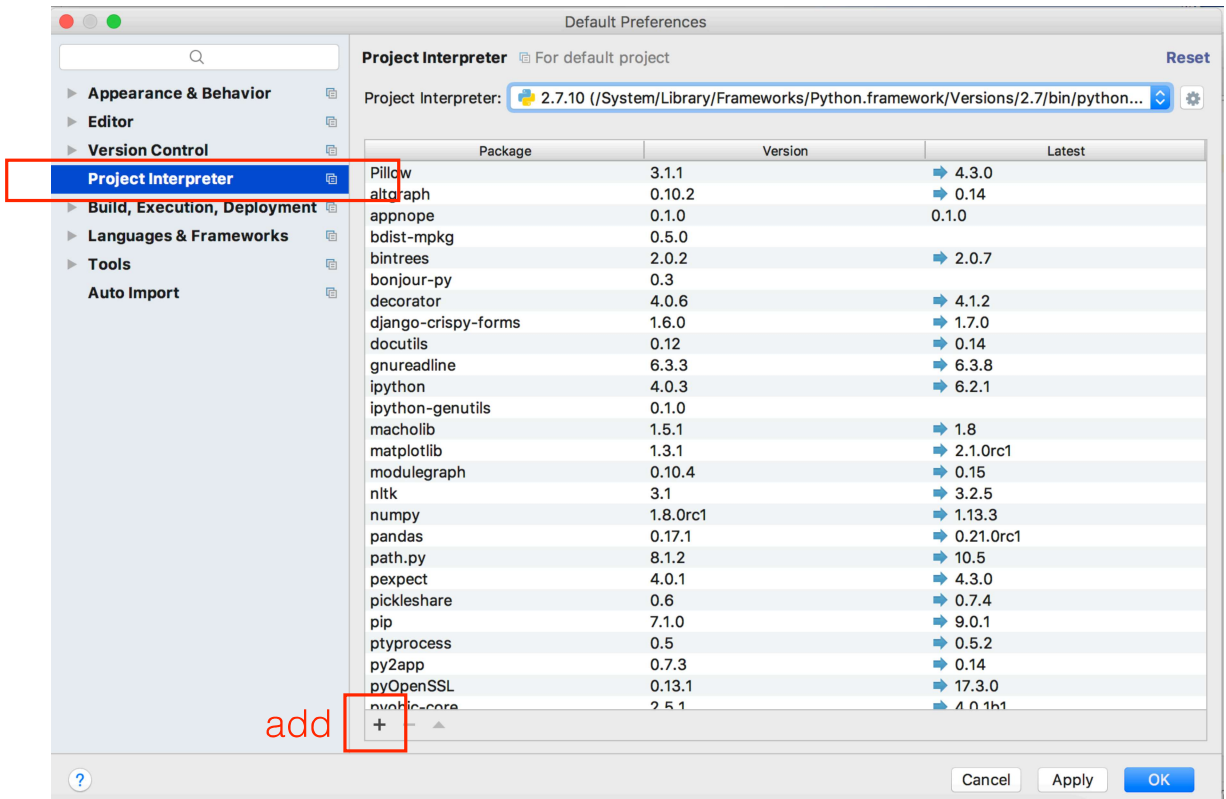
20. Write a function that calculates the same percentage of two numbers. The function should print the percentage value as an integer.

E.g. for input (10,50,30) the result should be: 50% of 10 is 5.
50% of 30 is 15.

Swampy Installation



Swampy Installation



Swampy Installation

