

IHF: CODE

PYTHON — SESSION 5

REVIEW

FUNCTIONS

FUNCTIONS – CREATE

```
def hello_world():  
    print("Hello World!")
```

FUNCTIONS – CALL

```
def hello_world():  
    print("Hello World!")
```

```
hello_world()
```

FUNCTIONS – PARAMETERS

```
def hello(name):  
    print("Hello, " + name + "!!")
```

```
hello("Alice")
```

```
hello("Bob")
```

```
hello("Charlie")
```

FUNCTIONS – PARAMETERS

```
def hello(name, age):  
    print("Hello my name is " + name)  
    print("I'm " + str(age) + " years old")  
  
    age_in_10_years = age + 10  
    print("In 10 years time I will be " + str(age_in_10_years))  
  
hello("Alice", 22)  
hello("Bob", 34)  
hello("Charlie", 17)
```

FUNCTIONS – PARAMETERS

```
def area(x, y, z):  
    print("The area is " + str(x * y * z))
```

```
area(12, 3, 4)
```

```
area(6, 14, 10)
```


FUNCTIONS – PARAMETERS

```
def <function_name>(<param_1>, <param_2>, ...):  
    <your code here>
```

FUNCTIONS – RETURNING

```
def area(x, y, z):  
    return x * y * z
```

```
cube1 = area(12, 3, 4)  
cube2 = area(6, 14, 10)
```

FUNCTIONS – SINGLE JOB

```
def hello(name, age):  
    print("Hello my name is " + name)  
    print("I'm " + str(age) + " years old")  
    print("In 10 years time I will be " + str(age_in_x_years(age, 10)))  
  
def age_in_x_years(age, years):  
    return age + years  
  
hello("Alice", 22)  
hello("Bob", 34)  
hello("Charlie", 17)
```

FUNCTIONS – RECURSION

```
def calc_factorial(x):  
    if x == 1:  
        return 1  
    else:  
        return (x * calc_factorial(x - 1))  
  
num = 4  
print("The factorial of " + num + " is " + str(calc_factorial(num)))
```

FUNCTIONS – RECURSION

```
def calc_factorial(x):  
    if x == 1:  
        return 1  
    else:  
        return (x * calc_factorial(x - 1))
```

# calc_factorial(4)	# 1st call with 4
# 4 * calc_factorial(3)	# 2nd call with 3
# 4 * 3 * calc_factorial(2)	# 3rd call with 2
# 4 * 3 * 2 * calc_factorial(1)	# 4th call with 1
# 4 * 3 * 2 * 1	# return from 4th call as number=1
# 4 * 3 * 2	# return from 3rd call
# 4 * 6	# return from 2nd call
# 24	# return from 1st call

QUESTIONS?

FILES

FILES – OPEN

```
f = open("my_file.txt", "r")
```


FILES – READ

```
f = open("my_file.txt", "r")  
print(f.read())
```

FILES – READ

```
f = open("my_file.txt", "r")  
for x in f:  
    print(x)
```

CODING TIME

SECTION A

```
cd kpmg-python-course/session_5/examples/
```

FILES – HANDLING

VALUE	ACTION	DESCRIPTION
"r"	Read	Opens a file for reading, error if the file does not exist
"a"	Append	Opens a file for appending, creates the file if it does not exist
"w"	Write	Opens a file for writing, creates the file if it does not exist
"x"	Create	Creates the specified file, returns an error if the file exists

FILES – WRITE

```
f = open("example.txt", "w")  
f.write("Hello World")  
f.close()
```

FILES – WRITE

```
f = open("example.txt", "w")  
f.write("Hello World")  
f.close()
```

```
f = open("example.txt", "a")  
f.write("It's nice to be here")  
f.close()
```

FILES – WRITE

```
f = open("names.txt", "a")

name = True
while name:
    name = input("Enter a name: ")
    f.write(name + "\n")

f.close()
```

CODING TIME

SECTION B

EXERCISES

Finish off any exercises you did not complete in the session

FURTHER HELP

DL-UKIHFCODE@KPMG.CO.UK