

Department of Computer Science
Final Exam Spring 2020

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Subject: Data Sciences

BS (CS,SE)

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Note:

At the top of the answer sheet there must be the ID, Name and semester of the concerned Student.

Students must have to provide the output of their respective programs. Students have same answers or programs will be considered fail. Programs in Python and codes should be explained clearly.

As this assignment is online so incase of any ambiguity my Whatsapp no. is 034499121116.

Q1. a. Why Functions are used discuss in detail?

Ans: Functions:

The functions are used in the programming to bundle the set of instructions which we want to use repeatedly or that because of their complexity which are better self contained in a sub program and which which is called when needed which means that a function is a piece of code written to carry out a specific task and to carry out that specific task the function maybe or maybe not need multiple inputs when the task is carried out thn the function can or can not return one or more values.

b. How arguments are used in function , write a simple program in Python?

Ans: An argument is the value that is sent to the function when it is called.

```
def greet(name, msg) :  
    #this is the function which will greets the person with the provided  
    message  
    print("Hey" , name + ' , ' + msg)
```

```
greet( "Irfan" , "How is Your day!")
```

OUTPUT:

Hey Irfan, How is Your day!

Q2. a. Why `.upper()`, `.lower()`, `capitalize()` and `.swapcase()` function are used ?

Ans: **.upper()** :

It is the method which converts all the characteristics to the uppercase.

Syntax: `string.upper()`

.lower():

It is the method which is used to convert all the characters into the lower case.

Syntax: `string.lower()`

capitalize():

In Python it is used to convert the first character of a string to the uppercase letter and lowercases all other characters if any.

Syntax: `string.capitalize()`

.swapcase():

It is the method which is used to convert all the lower case characters into uppercase and vice versa

Syntax: `string.swapcase()`

b. Write a program in which the discussed functions are used.

Note : Q2 part a functions.

Ans:

`.upper:`

String = " today is very sunny day!"

```
Print(string.upper() )
```

Output:

```
TODAY IS VERY SUUNY DAY!
```

```
.lower():
```

```
string= "TODAY IS VERY SUUNY DAY!"  
print(string.lower() )
```

Output:

```
today is very sunny day!
```

```
.capitalize():
```

```
string = " python is wOndErful"  
capitalized-string=string.capitalize()  
print('Old String: ` , string)  
print( `Capitalized String: ` , capitalized_string)
```

Output:

```
Old String: python is wOndErful  
Capitalized String: Python is wonderful
```

```
.swapcase():
```

```
string= "python is wonderful."  
print(string.swapcase() )
```

Output:

```
PYTHON IS WONDERFUL.
```

Q3. a. What are the rules for defining the function?

Ans:

There are some rules for the defining of the function. The function block begin with the keyword def which is followed by the function name and the parentheses (()).

Any input parametes or the arguments should be placed within these parentheses or you can also define the parameters inside these parentheses.

b. Write a suitable program of our defined function in Python?

Ans:

```
def our-function():  
    print("This is our new defined function")  
    print("That's pretty cool")  
  
our_function()
```

Q4. a. What are the rules for defining the function and Parameter passing to the function?

Ans :

When the arguments are passed by the value that is when the function is called the parameter receives a copy of the arguments value which is not its address and this rule applies to all the scalar values structure and unions passed as arguments modifying of a parameter does not modify the corresponding argument passed by the function call.

b. Write a suitable program of our defined function by parameter passing in Python?

Ans:

```
def our_function(phrase) :  
    print(phrase)  
    own_function("It's a sunny day")
```

Output:

It's a sunny day

Q5. a. What are return values to a Function discuss in detail?

Ans:

A return is the statement which is used to the end the execution of the function call and returns the result to the caller the statement after the return statements are not executed and if the return statement is without any expression then the special value none is returned. And the return statement can not be used outside the function.

Syntax:

```
def fun():  
    statements  
    .  
    .  
    return [expression]
```

b. Write a suitable program of a Function with returning value?

Ans:

```
def add(a, b):  
  
    return a + b  
  
def is_true(a):  
  
    res = add(2, 3)  
    print("Result of add function is {}".format(res))  
  
    res = is_true(2<5)  
    print("\nResult of is_true function is {}".format(res))
```

Output:

Result of add function is 5

Result of is_true function is True