LAB ACTIVITY 2:
Introduction to Basic Operations in Python

Learning Outcomes:

By the end of this laboratory session, you should be able to:

1. **Construct Python variables correctly**
2. **Manipulate Python literals using converting operation**

Hardware/Software: Computer, Phyton 3.5 or above.

Activity 2A

Activity Outcome: Construct Python variables correctly.

Procedure:

Step 1: Open Code editor and type the following code:

```
website = "example.com"
print(website)

#Assigning a new value to website
website = "pmtg.com"
print(website)

#Assigning multiple values to multiple variables
a, b, c = 5, 4.5, "Phyton"
print (a)
print (b)
print (c)

#Boolean literals
x = (1 == True)
y = (1 == False)
a = True + 4
b = False + 10
print("x is", x)
print("y is", y)
print("a:", a)
```

Step 2: Save, compile, and run the program. Save the program as `Act2A.py`. Write the output in the area below.

Output:

```
example.com
pmtg.com
5
4.5
Python
X is True
Y is False
a: 5

***Repl Closed***
```

Activity 2B

Activity Outcome: Construct input() functions

Procedure:

Step 1: Open code editor and type the following code:

```
#program to calculate area of rectangle
#get input from user
width = input("Please input width:")
height = input("Please input height:")

#calculate area
width = float(width)
height = float(height)
area = width * height
area = round(area,2)     # to format to 2 decimal places

#display output
print ("Width :", width)
print ("Height:", height)
print ("Area of rectangle:", area)
```

Step 2: Save, compile and run the program. Save the program as `Act2B.py`. Write the output in the area below.

Output:

```
Please input width:10
Please input height:2
Width= 10.0
Height= 2.0
Area of rectangle: 20.0

***Repl Closed***
```

Activity 2C

Activity Outcome : String formatting.

Procedures:

Step 1: Open code editor and type the following code:

```
name = "Khabib"
age = 34
marks = 99.00

string1 = 'Hey %s' % (name
print(string1)

string2 = 'My age is %d' % (age
print(string2)

string3= 'Hey %s, my age is %d' % (name,age)
print(string3)

string3= 'Hey %s, my subject mark is %f' % (name,marks)
print(string3)
```

Output:

```
Hey Khabib
My age is 34
Hey Khabib, my age is 34
Hey Khabib, my subject mark is 99.000000

***Repl Closed***
```

Activity 2D

Activity Outcome : String Operators

Procedures:

Step 1: Open code editor and type the following code:

```
#Strings in action
Temp='abc' + 'def'        # concatenation: a new string
print(Temp)
Temp1='Jeng!' * 4          # repeat the string for n time
print(Temp1)

#Indexing and slicing
S = 'spam'
Temp3=S[0], S[-2]               # indexing from or end
print(Temp3)
Temp4=S[1:3], S[1:], S[:-1]     # slicing: extract section
print(Temp4)

#Changing and formatting
S = S + 'Spam!'    # to change a string, make a new one
print(S)

#Common string tools
S = "spammify"
print(S.upper())             # convert to uppercase
print(S.find("mm"))          # return index of substring
print(int("42"), str(42))    # convert from/to string

print(S.split('mm'))                  # splitting and joining
Temp5='XX'.join(S.split("mm"))
print(Temp5)
```

Step 2: Save, compile and run the program. Save the program as `Act2D.py`. Write the output in the area below.

Output:

```
abcdef
Jeng!Jeng!Jeng!Jeng!
('s', 'a')
('pa', 'pam', 'spa')
spamSpam!
SPAMMIFY
3
42 42
['spa', 'ify']
spaXXify

***Repl Closed***
```

Activity 2E

Activity Outcome : Manipulate Python literals using converting operation

Procedures:
Step 1: Open code editor and type the following code:

```
#1. Converting Strings to Numerics
#Using int()function
x = "37"
y = "20"
z = int(x) - int(y)
print(z)

#Using float()function
w = "23.23"
v = "23.00"
a = float(w) - float(v)
print(a)

#2.Converting Numerics to Strings
#Using the str() function
print (str(23))    # Integer to String
print (str(23.3)) # Float to String

#Using the format() Function
print ("My age is {}".format(21))
```

Step 2: Save, compile and run the program. Save the program as `Act2E.py`. Write the output in the area below.

Output:

```
17
0.23000000000000043
23
23.3
My age is 21

***Repl Closed***
```