University Institute of Engineering

Department of Computer Science & Engineering

Experiment: 1.1

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Branch: Computer Science & Engineering **Section/Group: 212-A**

Semester: 1st **Date of Performance: 01/09/22**

Subject Name: Disruptive technology-1

Subject Code: 22ECH-102

1. Aim of the practical: Data Types, Operators, File Handling in Python

2. Tool Used: Google Colab

3. Code Used:

(a) Numeric data type

```
a=54
b=7.125
print(a-b)
```

(b) Type conversions

```
a="1010110"
b=int(a,2)
print(b)
e=float(a)
print(e)
```

(c) Numeric Operations

```
a=hex(63)
b=oct(63)
print(a)
print(b)
```

(d) Lists

```
a=[23,24, 'kumar', 36, 8.87]
print(a[:])
print(a[:3])
print(a[0:4])
print(a[::-1])
print(a[0:5:2])
print(a[2][3])
```

(e) To delete the data

```
a=[12,556,'distro',24,99.99]
del a[2]
print(a)
a.remove(556)
print(a)
a.clear()
print(a)
```

(f) Tuples are not mutable

```
a=(74,46,220)
b=('linux', 'unix','ubuntu')
c=(74,46,220,['linux','unix','kernel'])
print(a[0])
print(b[:])
print(c[3][1])
c[3][1]='windows'
print(c)
```

(g) Dictionary are mutable and has key value pair

```
a={1:'python', 2:'go',3:'elixir', 'second':'haskell'}
print(a)
print(a[1])
print(a[2])
print(a[3])
print(a['second'])
```

(h) Sets

```
a={918,292,953,594,294,394,9546,9546,95626,945.7,162.0230}
a.add(100.100100)
print(a)
```

(i) Strings

```
a='Linux is the best'
print(a)
print(a[:])
print(a[2:10])
print(a[0:14:2])
print(a[::-1])
print(a[-7:-1])
```

Operators in python

(i) Arithmatic operators

```
a=5214
b=2
print('Addition:', a+b)
print('Substraction:', a-b)
print('Multiplication:', a*b)
print('Division:', a/b)
print('Remainder:', a%b)
print('Exponential:', a**b)
```

(ii) Assignment operators

```
a=90
add,sub,mul,div,expo,rem=0,0,0,1,1,1
add +=a
print(add)
sub -=a
print(sub)
mul *=a
print(mul)
div /=a
print(div)
expo **=a
print(expo)
rem %=a
print(rem)
```

(iii) Assingment operators

```
a=123
b=6
print(a==b)
print(a!=b)
print(a>b)
print(a<b)
print(a>=b)
print(a<=b)
```

(iv) Logical operators

```
a=656
b=224
print(a and b) # true if both are true
print (a or b) #true if either one is true
print (not a) # returns opposite value
print (not b)
```

(v) Bitwise operators

```
a=965
b=45
print (a&b)
print (a|b)
print (a^b)
```

(vi) Identity operators

```
a=45
b=45
print (a is b) # True if both a and b are equal (identical)
print (a is not b) # True if a and b are not equal (not identical)
```

(vii) Membership operator

```
a=[66,32,45,956]
print(66 in a)
print(956 not in a)
```

(viii) else-if condition for flow control

```
a=845
b=525
if a == b:
      print ('they are equal')
elif a > b:
      print ('a is larger')
else:
      print ('b is larger')
```

File Handling

1.1: Read a file and print its content line by line

```
#---------------------------------------------------------------------
# 1.1: Read a file and print its content line by line
#---------------------------------------------------------------------



# Example 1:

try:
      fp = open('/content/sample.txt')  # Open the file in reading mode
      for line in fp:              # Print line by line
            print (line)
      fp.close()                   # Close the file

except:
      print("Error!! No such file exist")
```

1.2: Writing 1 to 10 in file

```
#---------------------------------------------------------------------
# 1.2: Writing 1 to 10 in file
#---------------------------------------------------------------------

# Example 1:

fp = open('sample2.txt','w') # Open the file in writing mode

for i in range(1,11):
      fp.write(str(i) + "\n") # Writing to the file line by line
fp.close()

print ("Writing done !! \nOpen sample2.txt to view the content")
```

1.3: Read from one file, Convert it to upper case and write to other file

```
#------------------------------------------------------------------------
# 1.3: Read from one file, Convert it to upper case and write to other file
#------------------------------------------------------------------------
try:
      readFp = open('hello.txt','r') # Open the file in reading mode
      writeFp = open('result.txt','w') # Open the file in writing mode

      for line in readFp:
            writeFp.write(line.upper())

      readFp.close()
      writeFp.close()

      print ("Writing done !! \nOpen result.txt to view the content")

except:
      print("Error !! Unable to open file.")
```

1.4: Appending to a file

```
#------------------------------------------------------------------------
# 1.4: Appending to a file
#------------------------------------------------------------------------
try:
      readFp = open('append.txt','r') # Open the file in reading mode
      writeFp = open('append-result.txt','a') # Open the file in Append mode

for line in readFp:
      writeFp.write(line)


fp = open('result.txt','r') # Open the file in reading mode
for line in fp: # Print line by line
      print (line)
fp.close() # Close the file


print("Error!! No such file exist")

readFp.close()
writeFp.close()
```

```
      print ("Writing done !! \nOpen append-result.txt to view the content")

except:
      print("Error !! Unable to open file.")
```

1.5: Creating a file

```
#---------------------------------------------------------------------------
# 1.5: Creating a file
#---------------------------------------------------------------------------
try:
      writeFp = open('create.txt','x') # Creating the file
      writeFp.close()

      print ("Done")

except:
      print("Error !! File already exist.")
```

1.6: Get all the files (and directories) in the current directory - Version 1

```
#---------------------------------------------------------------------------
# 1.6: get all the files (and directories) in the current directory -
Version 1
#---------------------------------------------------------------------------

# Example 1:

import os
allFiles = os.listdir()
print(allFiles)
```

1.8: Get the current working directory

```
#---------------------------------------------------------------------------
# 1.8: Get the current working directory
#---------------------------------------------------------------------------
import os

# Getting the current work directory; similar to pwd in Linux
currentDirName = os.getcwd()

print(currentDirName)
```

1.9: Delete a file

```
#-------------------------------------------------------------------------
# 1.9: Delete a file
#-------------------------------------------------------------------------
import os

try:
      os.remove("xyz1.txt")
      print ("File Deleted !!")
except:
      print ("Error !! File not found ")
```

1.10: Check if File exist

```
#-------------------------------------------------------------------------
# 1.10: Check if File exist
#-------------------------------------------------------------------------
import os

if os.path.exists("textdata.txt"):
      os.remove("textdata.txt")
else:
      print("The file does not exist")
```