File Handling

```
#Working with Text (Notepad) files
```

```
#writing the content to blankfile.txt
#step 1: open the file
#step 2: writing into the file
#step 3: saving the file and closing it
file=open('/content/blankfile.txt','w')  #write mode
file.write("This is the lab for file handling")
file.close()  #saving and closing
```

```
file=open('/content/blankfile.txt','w')  #write mode
file.write("This is the lab for IT606 Programming using Python")
file.close()  #saving and closing
```

```
file=open('/content/blankfile.txt','w')  #write mode
file.write("Welcome to DAIICT, Gandhinagar")
file.close()  #saving and closing
```

Switching to Append Mode

```
file=open('/content/blankfile.txt','a')  #append mode
file.write("This is the lab for file handling")
file.close()  #saving and closing
```

```
file=open('/content/blankfile.txt','a')  #append mode
file.write('\n')    #new line
file.write("This is the lab for IT606 Programing using Python")
file.close()  #saving and closing
```

```
file=open('/content/blankfile.txt','a')  #append mode
for i in range(10):
  file.write(str(i))
  file.write('\n')
file.close()  #saving and closing
```

```
file=open('/content/blankfile.txt','a')  #append mode
file.write('\n')
file.write("Only even numbers from 0-10")
file.write('\n')
for i in range(10):
  if(i%2==0):
    file.write(str(i))
    file.write('\n')
file.close()  #saving and closing
```

```
#reading the file
file=open('/content/blankfile.txt','r')  #read mode
print(file.read())
```

```
    Welcome to DAIICT, GandhinagarThis is the lab for file handling
    This is the lab for IT606 Programing using Python
    Only even numbers from 0-10
    0
    2
    4
    6
    8
```

```python
#reading the file
file=open('/content/blankfile.txt','r')  #read mode
variable_abc=file.read()
```

```python
type(variable_abc)
```

```
    str
```

```python
#reading till specific number of characters
file=open('/content/blankfile.txt','r')  #read mode
print(file.read(20))
```

```
    Welcome to DAIICT, G
```

```python
#reading line-by-line
file=open('/content/blankfile.txt','r')  #read mode
print(file.readline())
```

```
    Welcome to DAIICT, GandhinagarThis is the lab for file handling
```

```python
file=open('/content/blankfile.txt','r')
print(file.readline())
```

```
    Welcome to DAIICT, GandhinagarThis is the lab for file handling
```

Writing into CSV files

```python
import csv
fields=['Name','Surname']
rows=[['Nishith','Kotak'],
      ['Sachin','Tendulkar'],
      ['Virat','Kohli'],
      ['Mahendrasingh','Dhoni'],
      ['Suresh','Raina']]
filecsv='/content/demo.csv'
with open(filecsv,'w') as csvfile:
  csvwriter=csv.writer(csvfile)
  csvwriter.writerow(fields)
  csvwriter.writerows(rows)
```

```
#Writing in an excel file
```

```
pip install xlsxwriter
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/sim
Collecting xlsxwriter
  Downloading XlsxWriter-3.0.3-py3-none-any.whl (149 kB)
     |████████████████████████████████| 149 kB 5.1 MB/s
Installing collected packages: xlsxwriter
Successfully installed xlsxwriter-3.0.3
```

```python
import xlsxwriter
workbook=xlsxwriter.Workbook('/content/excelfiledemo.xlsx')
worksheet=workbook.add_worksheet()
worksheet.write('A1','Hello')
worksheet.write('B1','DAIICT')
worksheet.write('C1','Python')
worksheet.write('D1','Programming')
worksheet.write('B2','Lab')
worksheet.write('C3','IT606')

workbook.close()  #saving and closing
```

```python
#worksheet.write(row,column,content)
workbook=xlsxwriter.Workbook('/content/excelfiledemo.xlsx')
worksheet=workbook.add_worksheet()

for i in range(1,5):  #rows
  for j in range(1,5):  #columns
    worksheet.write(i,j,'DAIICT'+str(i+j))
workbook.close()
```

```python
#removing a file
import os
os.remove('/content/blankfile.txt')
```

```python
import os
if os.path.exists('/content/demo.csv'):
  os.remove('/content/demo.csv')
else:
  print("File not found")
```

```
File not found
```

Errors and Exceptions Exception Handling

```
#Error1: IOError Exception
```

```python
import sys
file=open('except.txt')
for i in range(10):
  print(i)
```

```
----------------------------------------------------------------------
FileNotFoundError                         Traceback (most recent call last)
<ipython-input-1-b48eb8f0d9c0> in <module>
      1 import sys
----> 2 file=open('except.txt')
      3 for i in range(10):
      4   print(i)

FileNotFoundError: [Errno 2] No such file or directory: 'except.txt'
```

```
try:
  file=open('except.txt')
except IOError:
  print("File not found")
for i in range(10):
  print(i)
```

```
File not found
0
1
2
3
4
5
6
7
8
9
```

```
#KeyError: Dictionary Key-Value
dictionary={'a':5,'b':2}
```

```
dictionary['c']
```

```
----------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
<ipython-input-22-8368e4ddad1c> in <module>
----> 1 dictionary['c']

KeyError: 'c'
```

```
try:
  dictionary['c']
except KeyError:
  print("Key not found")
```

```
Key not found
```

```
#Error 3: ARITHMETIC error
```

```
#DivisionbyZero error
7/0
```

```
---------------------------------------------------------------------------
ZeroDivisionError                          Traceback (most recent call last)
<ipython-input-42-26e34639a331> in <module>()
      1 #DivisionbyZero error
----> 2 7/0

ZeroDivisionError: division by zero
```

```
try:
  open('mytxt.txt')
except KeyError:
  print("Key error block")
except ArithmeticError:
  print("this is arithmetic error")
except:
  print("DAIICT IT606")
```

```
    DAIICT IT606
```

```
#Overflow error
import math
math.exp(1000)    #e^1000
```

```
---------------------------------------------------------------------------
OverflowError                             Traceback (most recent call last)
<ipython-input-49-92a401694d4a> in <module>()
      1 #Overflow error
      2 import math
----> 3 math.exp(1000)

OverflowError: math range error
```

```
try:
  math.exp(1000)
except:
  print("overflow error")
for i in range(10):
  print(i)
```

```
    overflow error
    0
    1
    2
    3
    4
    5
    6
    7
    8
    9
```

```
#Index Error
```

```
lista=[1,2,3,4,5]    #index--> range is [0,4]
lista[5]
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
<ipython-input-53-89944fc970ca> in <module>()
        1 lista=[1,2,3,4,5]    #index--> range is [0,4]
----> 2 lista[5]

IndexError: list index out of range
```

```
lista=[1,2,3,4,5]
try:
  lista[5]
except:
  print("specify the value in the range of a list")
```

```
      specify the value in the range of a list
```

```
#NameError
```

```
print(abcd)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-56-ce1394b9d4d9> in <module>()
----> 1 print(abcd)

NameError: name 'abcd' is not defined
```

```
try:
  print(abcd)
except:
  print("variable abcd is not defined")
```

```
      variable abcd is not defined
```

```
def demo():
  print(abcd)
demo()
```

```
    -----------------------------------------------------------------------
    NameError                                Traceback (most recent call last)
    <ipython-input-61-1edacbb03e2a> in <module>()
          1 def demo():
          2    print(abcd)
    ----> 3 demo()
```

```
demo()
```

```
    -----------------------------------------------------------------------
    NameError                                Traceback (most recent call last)
    <ipython-input-59-0ac004a6afed> in <module>()
    ----> 1 demo()

    <ipython-input-58-a4e33c55fac1> in demo()
          1 def demo():
    ----> 2    print(abcd)

    NameError: name 'abcd' is not defined
```

```
try:
  def demo():
    print(abcd)
  demo()
except:
  print("variable is not defined")
```

```
    variable is not defined
```

```
#type error
```

```
lista=[1,2,3,4,5]
string="hello all"
lista+string
for i in range(10):
  print(i)
```

```
    -----------------------------------------------------------------------
    TypeError                                Traceback (most recent call last)
    <ipython-input-65-6eb9f3d0e7c5> in <module>()
          1 lista=[1,2,3,4,5]
          2 string="hello all"
    ----> 3 lista+string
          4 for i in range(10):
          5    print(i)

    TypeError: can only concatenate list (not "str") to list
```

```
lista=[1,2,3,4,5]
string=input("enter the string: ")
try:
  lista+string
```

```
except:
  fileerror=open('/content/errorlogs.txt','a')
  fileerror.write('\n')
  a="concatenation is not possible for user input: "+ string
  fileerror.write(a)
  fileerror.close()

for i in range(10):
  print(i)
```

```
enter the string: DAIICT
0
1
2
3
4
5
6
7
8
9
```