File handling and erroe handling

File handling(opening a file)

```
file=open('/content/file1.txt','r')
```

Reading a file

```
file=open('/content/file1.txt','r')
content=file.read()
print(content)
file.close()
```

```
its not raining now
```

Writing a file

```
file=open('/content/file1.txt','w')
file.write('its not raining now')
file.close()
```

Appending a file

```
file=open('/content/file1.txt',"a")
file.write('its is raining again')
file.close()
```

Using 'with' statement

```
with open('/content/file1.txt','r') as file:
  content=file.read()
  print(content)
```

```
its not raining nowits is raining againits is raining againits is
raining again
```

File handling modes

```
with open('/content/download.jpeg','rb')as file:
  data=file.read()
```

ERROR HANDLING

Try-exept block

```
try:
  num=int(input('enter a number:'))
  print(10/num)
```

```
except ZeroDivisionError:
  print('you cannot divide by zero')
except ValueError:
  print('Invalind input! please enetr a number')
```

```
enter a number:int
Invalind input! please enetr a number
```

Finally block

```
try:
  file=open('/content/download.jpeg','r')
except FileNotFoundError:
  print('file not found')
finally:
  print('execution complete')
```

```
execution complete
```

Raising Epectations

```
def check_age(age):
  if age<18:
    raise ValueError('age must be 18 or older')
  return True
try:
  check_age(16)
except ValueError as e:
    print(e)
```

```
age must be 18 or older
```

HANDS ON PRACTICE

Reading and Writing to a file

```
with open('/content/file1.txt','w') as file:
  file.write('python is awesome!\n')
with open('/content/file1.txt','r') as file:
 print(file.read())
```

```
python is awesome!
```

Appending Data to a file

```
with open('/content/file1.txt','a') as file:
  file.write('lets learn file handling!\n')
```

```
with open('/content/file1.txt','r') as file:
 print(file.read())
```

```
python is awesome!
lets learn file handling!
```

Handling Division by Zero Error

```
try:
  num1=int(input('enter a numerator:'))
  num2=int(input('enter a denominator:'))
  result=num1/num2
  print('result:',result)
except ZeroDivisionError:
  print('cannot divide by zero')
except ValueError:
  print('invalid input! please enter a number')
```

```
enter a numerator:40
enter a denominator:2
result: 20.0
```

Creating a Custom Exception

```
class NegativeNumberError(Exception):
  pass
  def check_positive(number):
    if number<0:
      raise NegativeNumberError('Negative number entered')
  try:
    num=int(input('enter a positive numner:'))
    check_positive(num)
    print('you entered a positive number')
  except NegativeNumberError as e:
      print(e)
```

```
enter a positive numner:12
you entered a positive number
```

count lines in a file

```
def count_lines_in_file(file_path):
    with open(file_path, 'r') as file:
        lines = file.readlines()
        return len(lines)
file_path = '/content/file1.txt'
```

```
print(f'Number of lines in the file:
{count_lines_in_file(file_path)}')
```

```
Number of lines in the file: 2
```

count word in a file

```
def count_words_in_file(file_path):
    with open(file_path, 'r') as file:
        text = file.read()
        words = text.split()
        return len(words)
        file_path = '/content/file1.txt'
word_count = count_words_in_file(file_path)
print(f'The file has {word_count} words.')
```

```
The file has 7 words.
```

Copy file contents

```
with open('/content/file1.txt', 'r') as source_file:
    data = source_file.read()
with open('copy.txt', 'w') as dest_file:
    dest_file.write(data)
print("File copied successfully!")
```

```
File copied successfully!
```

Check if file exists or not

```
import os
if os.path.isfile('/content/file1.txt'):
    print("File '/content/file1.txt' exists.")
else:
    print("File '/content/file1.txt' does not exist.")
```

```
File '/content/file1.txt' exists.
```

Read file line by line

```
with open('/content/file1.txt', 'r') as file:
    for line in file:
        print(line.strip())
```

```
python is awesome!
lets learn file handling!
```

Random number generator

```
import random
random_number=random.randint(2,10)
print('the random number is ',random_number)
```

```
the random number is  8
```