File Handling and Error Handling in python

File operatons

```python
#opening a file
file=open("/content/prafful.txt","r")

file=open("/content/prafful.txt","w")

file=open("/content/prafful.txt","w")
print(file.write("this is a old file,i am not good\n"))
file.close()
```

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```python
#Reading a file
file = open("/content/prafful.txt", "r")
content = file.read()
print(content)
file.close()
```

```
this is a old file,i am not good
sdiyfgis
sojbjbvjisn
oppopopopopopopopo
apapapapapapapapappa
alalalaalalalal
```

```python
#Writing a file
file = open("/content/prafful.txt","w")
print(file.write("This is an old but new file,but donot use it\n"))
file.close()
```

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```python
#Appending to a file
file = open("/content/prafful.txt","a")
file.write("i am adding a appended line to this\n")
file.close()
```

```python
#using 'with' Statement
with open("/content/prafful.txt","r") as file:
  content=file.read()
  print(content)
```

```
This is an old but new file,but donot use it
i am adding a appended line ti this
i am adding a appended line to this
```

```python
#File Handling Modes
with open("/content/scarface.jpg","rb") as file:
  data = file.read()
```

Error Handling

```python
#Try-Except Block
try:
  num = int(input("Enter the number:"))
  print(10 / num)
except ZeroDivisionError:
  print("you can not divide by zero")

Enter the number:0
you can not divide by zero

#final block
try:
  num = int(input("Enter the number:"))
  print(10 / num)
except ZeroDivisionError:
  print("you can not divide by zero")
finally:
  print("execution is done")


Enter the number:0
you can not divide by zero
execution is done

#Raising Exceptions
def check_age(age):
  if age < 18:
    raise valueError("age must be 18 or older")
    return True
    try:
      check_age(17)
    except ValueError as e:
      print(e)
```

Hands-on-practice

```python
# 1.Reaading and writing to a file
with open("/content/prafful.txt","w") as file:
  file.write("python is easy but not easy\n")

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

```
python is easy but not easy


# 2.Appending data to file
with open("/content/prafful.txt","a") as file:
 file.write("today is 5th day of python\n")

with open("/content/prafful.txt","r") as file:
 content = file.read()
 print(content)

python is easy but not easy
today is 5th day of python
today is 5th day of python
today is 5th day of python
today is 5th day of python


# 3.Handling division by zero error
try:
  num = int(input("Enter the number:"))
  print(10 / num)
except ZeroDivisionError:
  print("you can not divide by zero")
except valueError:
  print("invalid input! enter integer")

Enter the number:0
you can not divide by zero

#Generate a random number between 1 and 6
import random
random_number = random.randint(1,6)
print("the random number is:",random_number)

the random number is: 1
```

Problem solving

```
# creating and writing to afile
with open("/content/data.txt","w") as file:
  file.write("hello world!")

#Read from a file
with open("/content/data.txt","r") as file:
  print(file.read())

hello world!
Welcome to Python programming!
```

```python
#Append to a File
with open("data.txt", "a") as file:
    file.write("\nWelcome to Python programming!")

#Count Lines in a File
with open("data.txt", "r") as file:
    print(len(file.readlines()))
```

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```python
#Count Words in a File
with open("data.txt", "r") as file:
    content = file.read()
    print(len(content.split()))
```

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```python
#Copy File Contents
with open("data.txt", "r") as source, open("copy.txt", "w") as destination:
    destination.write(source.read())

#Check if File Exists
import os
print(os.path.exists("data.txt"))
```

True

```python
#Read File Line by Line
with open("data.txt", "r") as file:
    for line in file:
        print(line, end="")
```

hello world!
Welcome to Python programming!

```python
#Search for a Word in a File
with open("data.txt", "r") as file:
    for line in file:
        if "Python" in line:
            print(line)
```

Welcome to Python programming!

```python
#Write a List to a File
numbers = [1, 2, 3, 4, 5]
with open("numbers.txt", "w") as file:
    file.write("\n".join(map(str, numbers)))
```