File Handling in python

File Handling in python refers to the ability to work with files on your computer's file system. Python provides several built-in function and methods that allow you to open, read, write and manipulate files effectively.

- opening a file
- Modifying a file
- closing a file

What is a file ?

In python, a file is like a container where you can keep information. It can be regular text files that you can read and write like a letter or a story. Or it can be special binary file that stores complex data like pictures or music.

- Files are named locations on disks to store information
- They are used to **store data permanently**
- Data is stored in non-volatile memory

There are two types of files:

Text Files:

- Text Files are human-readable and store data as a sequence of characters
- They are commonly used for storing textual data such as plain text, configuratioon files, source code and more.
- You can open, read, write and manipulate text files using python's built in functions and methods.

Binary Files

- Binary files store data in a format that is not human readable.
- They are ised for storing non-textual data such as **images, videos, audio, files**, executables, and other binary data
- Binary files require **specific handling techniques** and are opened, read and written using binary mode in python.

In [1]:
```
age=[]
```

```
for i in range(4):
    age.append(int(input('enter your age')))
age
```

Out[1]:
```
[10, 20, 30, 40]
```

In [2]:
```
# rom ---> permanent basis
# txt,jpg,mp3,mp4
```

In [ ]:
```
#syntax
variable=open('file.ext','mode')
variable.operation
variable.close()
```

In [3]:
```
f=open('vipul.txt','w')
f.write('Hi this side vipul')
f.close()
```

In [5]:
```
f=open('vipul.txt','r')
content=f.read()
f.close()
print(content)
```

```
Hi this side vipul
And my friend is vipul
```

Modes:

- **r**: Mode will open the file in read mode
- **w**: This mode wil rewrite the file if it already exists or create a file
- **a**: This mode will append files or text in existing file
- **x**: Create mode, it will throw an error if that file already exists in library
- ***t***: text file, we can write **rt** to obtain this, means read as text which is by default
- **b**: b if we write b it will show as binary, **rb**

In [7]:
```
f=open('age.txt','w')
for i in range(3):
    f.write(input('enter your age'))
    f.write(',')
f.close()
```

In [8]:
```
f=open('age.txt','r')
content=f.read()
f.close()
```

In [9]:
```
content.split(',')
```

Out[9]:
```
['12', '42', '65', '']
```

In [10]:
```
f=open('vipul.txt','a')
f.write('\nHello,how are you?Khaana ka ke jana')
f.close()
```

In [11]:
```
f=open('vipul.txt','x')
f.write('\nprince') # price file does not exits thats is why error occur i onl
f.close()
```

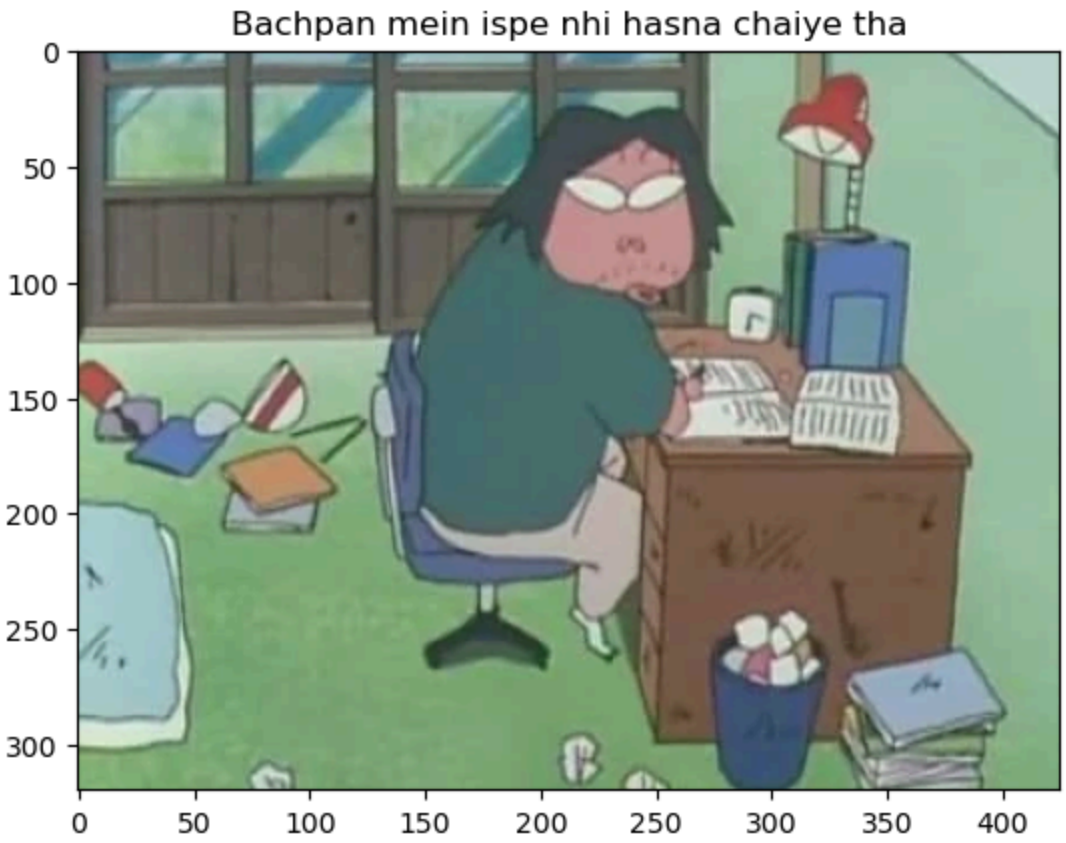
```
---------------------------------------------------------------------------
FileExistsError                           Traceback (most recent call last)
Cell In[11], line 1
----> 1 f=open('vipul.txt','x')
      2 f.write('\nprince') # price file does not exits thats is why error occu
r i only made vipul.txt only
      3 f.close()

File ~\anaconda3\Lib\site-packages\IPython\core\interactiveshell.py:324, in _mo
dified_open(file, *args, **kwargs)
    317 if file in {0, 1, 2}:
    318     raise ValueError(
    319         f"IPython won't let you open fd={file} by default "
    320         "as it is likely to crash IPython. If you know what you are doi
ng, "
    321         "you can use builtins' open."
    322     )
--> 324 return io_open(file, *args, **kwargs)

FileExistsError: [Errno 17] File exists: 'vipul.txt'
```

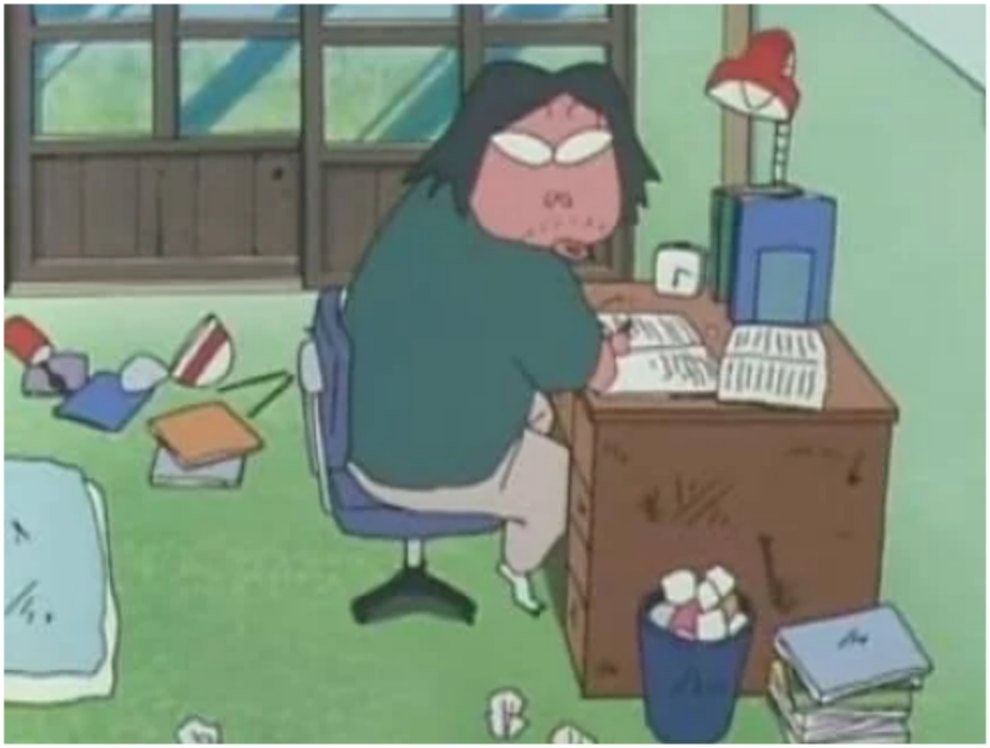
In [12]:
```
# binary
f=open('yonro.webp','rb')
content=f.read()
# print(content)
f.close()
```

In [13]:
```
# matplotlib
import matplotlib.pyplot as plt
import matplotlib.image as mpimg
img=mpimg.imread('yonro.webp')
plt.imshow(img)
plt.title('Bachpan mein ispe nhi hasna chaiye tha')
plt.show()
```



In [15]:
```
# matplotlib
import matplotlib.pyplot as plt
import matplotlib.image as mpimg
img=mpimg.imread('yonro.webp')
plt.imshow(img)
plt.title('Bachpan mein ispe nhi hasna chaiye tha')
plt.axis('off')
plt.show()
```

Bachpan mein ispe nhi hasna chaiye tha



In [ ]: