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Programming and Data Structures with Python

CPU   DISK
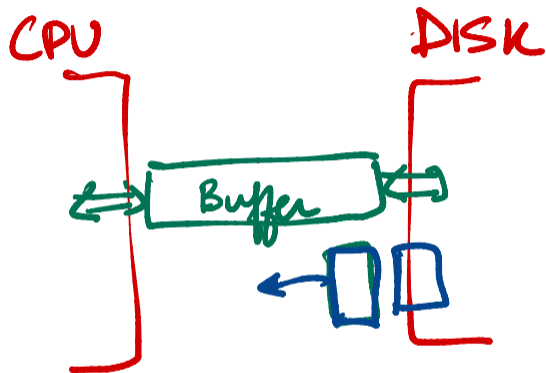
Buffer

Interact with buffer

"File handle"

1. Open file
   Create file handle,
   connects to file

2. Read/write to file handle

3. Close file

Open file

Open (filename, mode)

returns a
file handle

name of
file

read
Write

Text files
Sequential
access
begin to end

fh = open ("abc.txt", "r")
                              "w"

content = fh.read() $\rightsquigarrow$ string with entire file

$\Downarrow$

Line1 -- \n Line \n -- \n

↳ part of input

x = input() — read one line

end of line "\n"

\n — not part of input

Press ENTER

fh.readline()

    Read one line (includes trailing "\n")

fh.readlines() $\longrightarrow$ List of lines

    fh = open("abc.txt", "r")
    for l in fh.readlines():

Close file handle

fh.close()

"Disconnects file"

Write

fh = open("xyz", "w")

Create or overwrite

fh = open("xyz", "a")

Append to end

fh.write(s)

Add "\n" yourself

fh.writelines()

Write a list of
strings

infile = open("abc", "r")

outfile = open("xyz", "w")

for l in infile.read()
   outfile.write(l)

has \n

has \n

infile.close()
outfile.close()

infile =

outfile =

contents = fh.readlines()

fh.writelines(contents)

Go to a specific position

fh.seek(-)

Sequential

Textfile

| Line 1 \n | Line 2 \n | Line 3 \n |

→ readline()

→ readline()

→

End of file   read ... will return "

Library to handle matrices

$$m = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$$

$$[[0,1], [1,0]]$$

m[1][1]

array

Python sequence $\longrightarrow$ create numpy array

m[1][2] $\rightsquigarrow$ m[1,2]

"Broadcast"   m * 3   scalar multiplication