

1.a) Given that the two files have been provided 1.tex file and 2. spice file these two files contain two fields the first field contains the kind of operation the CPU performs that can perform three categories reading, writing and instruction fetching, that indicates

0: read data,

1: write data and

2: instruction fetch

second field contains the addresses of operations performs. For the fetching of details and performing the analysis part we used Jupyter for getting the require task.

In the first data tex file that file contains two categories as mentioned above of the kind of operation CPU perform and addresses of operation performs. The first column is numerical category and the second column contains the categorical which addresses are different for every time for each operation with repetition contains the separate address as fallows fig:1.0

```
tex.head(5)
```

	operationperform	address
0	2	430d70
1	2	430d74
2	2	415130
3	0	1000acac
4	2	415134

Fig: 1.0

The tex file contains the 8,32,477 records of CPU performs. In this data they are zero null values (zero NAN's).

In the Second data spice ("Simulation Program with Integrated Circuit Emphasis") file that file also contains two categories as mentioned in the tex file of the kind of operation CPU perform and addresses of operation performs. The first column is numerical category and the second column contains the categorical as fallows fig:1.1

```
spice=pd.read_excel("Desktop\\spice.xlsx")
spice.head(5)
```

	operationperform	address
0	2	40bc74
1	0	7ffebac8
2	2	40bc78
3	2	40bc7c
4	0	1000fff0

Fig: 1.1

In the spice file contains 10 lakhs of records of CPU operation performs, in this data also they are zero null values.

```
sns.set_style("whitegrid")
sns.histplot(tex)
```

<matplotlib.axes._subplots.AxesSubplot at 0x1e2470a26a0>

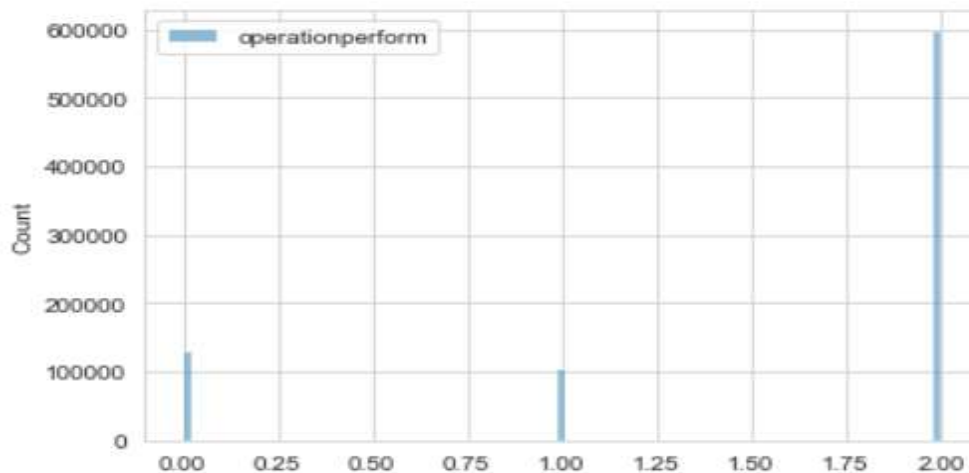


Fig: 2.0(histogram of tex data)

```
sns.set_style("whitegrid")
sns.histplot(spice)
```

<matplotlib.axes._subplots.AxesSubplot at 0x1e2380e2f98>

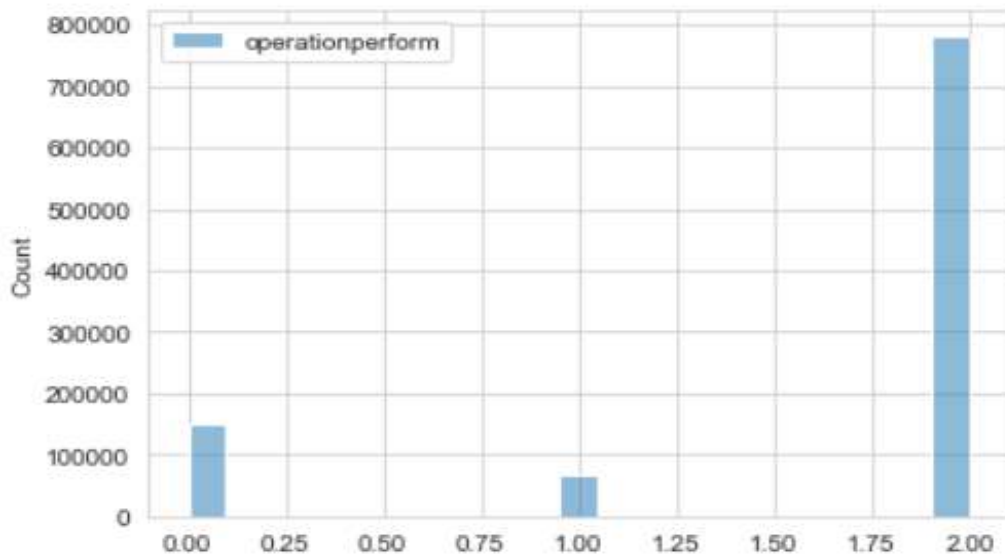


Fig:2.1(histogram of spice data)

1.b)

- From the data of tex we have considered that the writes having the lowest frequencies.
- The frequency of writes in the tex file is 1,04,513.
- The frequency of writes in the spice data is 66,538. (from histograms of 2.0 and 2.1)
- When we compare the two records from the two data writes of kind of Operation the CPU performs is less with comparison of read and instruction fetch.
- The frequency of reads in tex file is 1,30,655.
- The frequency of reads in spice file is 150699 it means spice data contains the higher performers of reading. When it is compare to tex file reads.
- The reads having the medium performance in both data of tex and spice when compare to writes and instruction fetch.
- In both data set the instruction fetch having the very higher performance and these having the huge frequency comparing to read and write.
- In tex having 5,97,309 and in spice having 7,82,764 frequency range.