Practical No: 7

Implement Conditional Probability And Joint Probability using Python.

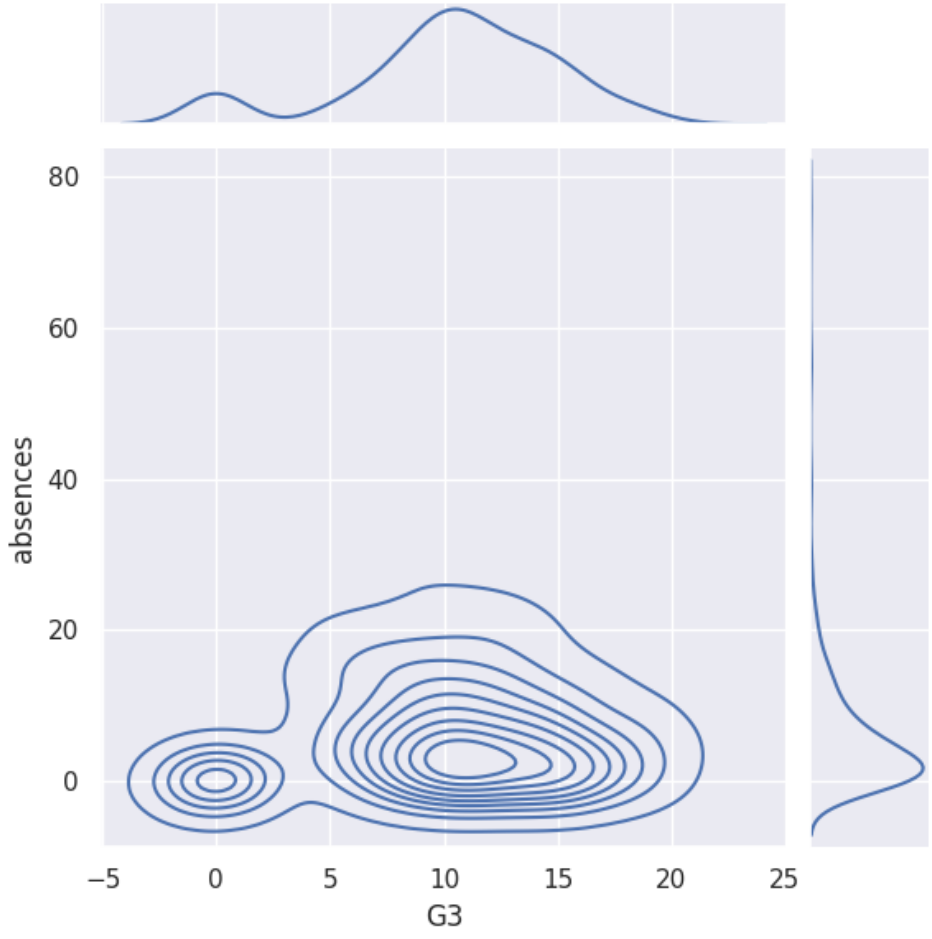
AIM: Implement joint probability using Python.

Code:

```
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import pandas as pd
sns.set()
# Read the dataset
data = pd.read_csv('/content/student-mat.csv')
# Create a joint plot
sns.jointplot(data=data, x='G3', y='absences', kind='kde')

# Display the plot
plt.show()
```

Output:



b) AIM: Implement Conditional Probability using Python.

Code:

```
import pandas as pd
df = pd.read_csv('/content/student-mat.csv')
f.head(3)
len(df)
import numpy as np
df['grade_A'] = np.where(df['G3']*5 >= 80, 1, 0)
df['high_absenses'] = np.where(df['absences'] >= 10, 1, 0)
df['count'] = 1
df = df[['grade_A','high_absenses','count']]
df.head()
pd.pivot_table(
    df,
    values='count',
    index=['grade_A'],
    columns=['high_absenses'],
    aggfunc=np.size,
    fill_value=0
)
```

Output:

	grade_A	high_absenses	count
0	0	0	1
1	0	0	1
2	0	1	1
3	0	0	1
4	0	0	1

high_absenses	0	1
grade_A		
0	277	78
1	35	5