```
import numpy as np
import pandas as pd

data=pd.read_csv('People Charm case.csv')
data.head()
```

	satisfactoryLevel	lastEvaluation	numberOfProjects	avgMonthlyHours	timeSpent.c
0	0.38	0.53	2	157	
1	0.80	0.86	5	262	
2	0.11	0.88	7	272	
3	0.37	0.52	2	159	
4	0.41	0.50	2	153	

```
#Program 1
# Which of the variables have missing values?

import pandas as pd

# Read the CSV file into a DataFrame
df = pd.read_csv("People Charm case.csv")

# Check for missing values in each column
missing_values = df.isna().sum()

# Display columns with missing values
columns_with_missing = missing_values[missing_values > 0]
print(columns_with_missing)
```

```
Series([], dtype: int64)
```

```
#Program 2
#What is the third quartile value for the variable lastEvaluvation


import pandas as pd

# Read the CSV file into a DataFrame
df = pd.read_csv("People Charm case.csv")

# Calculate the third quartile for the "lastEvaluvation" variable
third_quartile = df["lastEvaluation"].quantile(0.75)

print("Third Quartile (75th Percentile) for 'lastEvaluvation':", third_quartile)
```

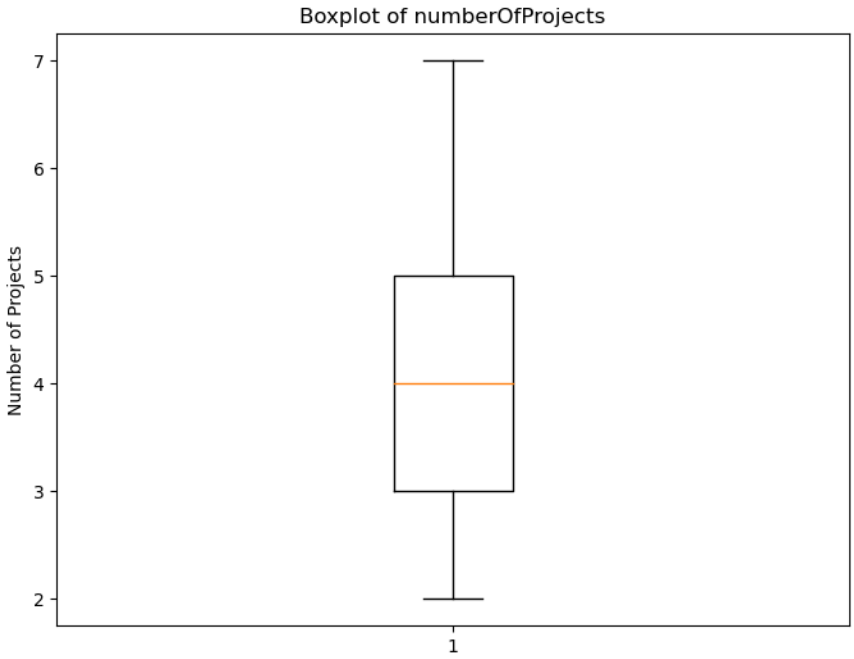
```
Third Quartile (75th Percentile) for 'lastEvaluvation': 0.87
```

```
#Program 3
# Construct a Crosstable for the variables dept and salary and find out which department has highest frequency value in the category low

# Read the CSV file into a DataFrame
df = pd.read_csv("People Charm case.csv")

# Construct a crosstable for 'dept' and 'salary' variables
crosstab_result = pd.crosstab(df['dept'], df['salary'])

# Find the department with the highest frequency value in the 'low' salary category
department_with_highest_low_salary = crosstab_result['low'].idxmax()

print("Department with the highest frequency of low salary:", department_with_highest_low_salary)
```

```
Department with the highest frequency of low salary: sales
```

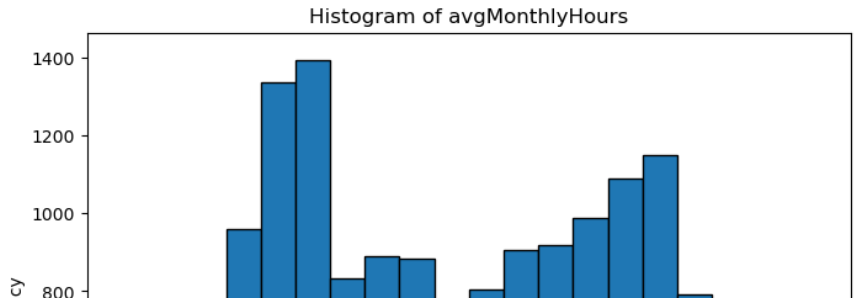
```
#Program 4
#Generate a boxplot for the variable numberOfProjects and get the median value for the number of projects where the employees have worked

import pandas as pd
import matplotlib.pyplot as plt

# Read the CSV file into a DataFrame
df = pd.read_csv("People Charm case.csv")

# Generate a boxplot for the 'numberOfProjects' variable
plt.figure(figsize=(8, 6))
plt.boxplot(df['numberOfProjects'])
```

```
plt.title('Boxplot of numberOfProjects')
plt.ylabel('Number of Projects')
plt.show()

# Calculate the median value for the 'numberOfProjects' variable
median_number_of_projects = df['numberOfProjects'].median()

print("Median number of projects:", median_number_of_projects)
```




```
Median number of projects: 4.0
```

```
#Program 5
#Plot a histogram using the variable āvgMonthlyHoursāand find the range in which the number of employees worked for 150 hours per month?

import pandas as pd
import matplotlib.pyplot as plt
import numpy as np

# Read the CSV file into a DataFrame
df = pd.read_csv("People Charm case.csv")

# Plot a histogram for the 'avgMonthlyHours' variable
plt.figure(figsize=(8, 6))
plt.hist(df['avgMonthlyHours'], bins=20, edgecolor='black')
plt.title('Histogram of avgMonthlyHours')
plt.xlabel('Average Monthly Hours')
plt.ylabel('Frequency')
plt.show()

# Find the range in which the number of employees worked for 150 hours per month
range_for_150_hours = df[(df['avgMonthlyHours'] >= 150) & (df['avgMonthlyHours'] < 151)]
number_of_employees = len(range_for_150_hours)

print("Number of employees who worked for 150 hours per month:", number_of_employees)
```




```
#Program 6
# Generate a boxplot for the variables lastEvaluation and numberOfProjects

import pandas as pd
import matplotlib.pyplot as plt

# Read the CSV file into a DataFrame
df = pd.read_csv("People Charm case.csv")

# Generate a boxplot for the 'lastEvaluation' and 'numberOfProjects' variables
plt.figure(figsize=(10, 6))
df.boxplot(column=['lastEvaluation', 'numberOfProjects'])
plt.title('Boxplot of lastEvaluation and numberOfProjects')
plt.ylabel('Values')
plt.show()
```