```
import os
import pandas as pd
from pandasai.llm import OpenAI
from pandasai import SmartDataframe, Agent
from pandasai.helpers.openai_info import get_openai_callback
from dotenv import load_dotenv
```

```
# OpenAI API Key
load_dotenv()
api_key = os.getenv("OPENAI_API_KEY")
```

```
df = pd.read_csv("Students_performance_survey.csv")
df.head()
```

```
llm = OpenAI(api_token=api_key)
sdf = Agent([df], config={"llm": llm, "conversational":False})
```

```
df.shape
```

```
(1194, 47)
```

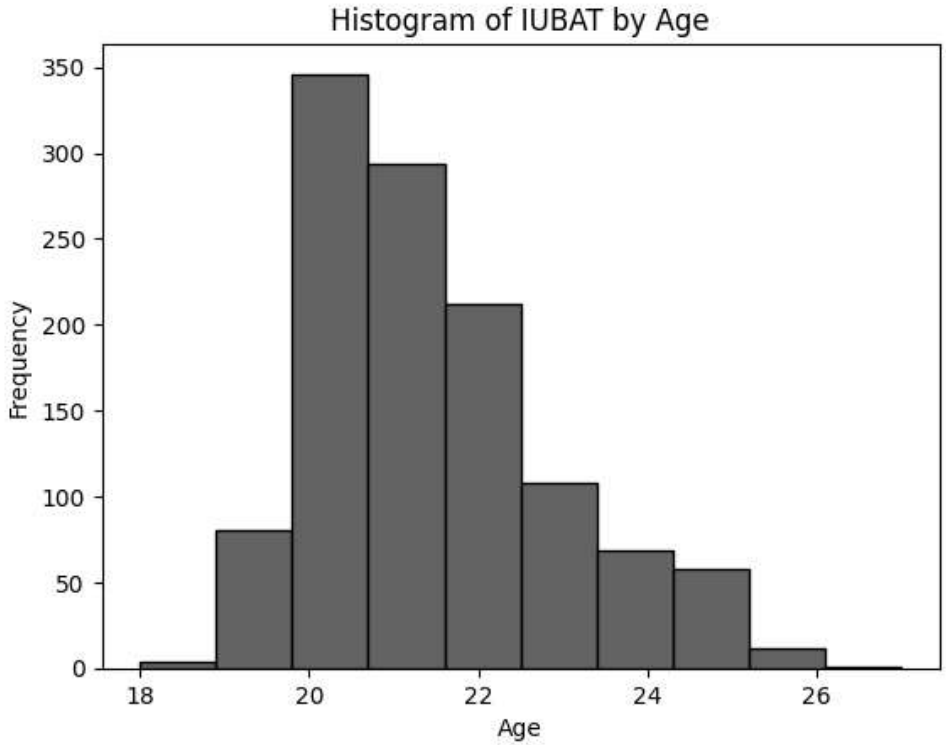
```
def QA(prompt, cost = None):
    if cost is None:
        with get_openai_callback() as cb:
            response = sdf.chat(prompt)
            print(response)
    else:
        with get_openai_callback() as cb:
            response = sdf.chat(prompt)
            print(response)
            print(cb)
```

```
QA("Give me the total number of rows and columns are in the dataset")
```

```
The dataset has 1194 rows and 47 columns.
```

```
QA("Plot a histogram of the IUBAT by age")
```

```
C:/Users/Bikas/Desktop/DataAnalytics/exports/charts/temp_chart.png
```




```
QA("Number of male and female are there")
```

```
          1
Male    672
Female  522
Tokens Used: 73
        Prompt Tokens: 72
        Completion Tokens: 1
Total Cost (USD): $ 0.000074
```

```
print(sdf.last_code_generated)

```

```
None
```

```
QA("Give me the source code of total universities in the dataset")
```

```
153
Tokens Used: 1001
        Prompt Tokens: 937
        Completion Tokens: 64
Total Cost (USD): $ 0.001065
```

```
print(sdf.last_code_generated)
```

```
# TODO: import the required dependencies
import pandas as pd

# Write code here
total_universities = len(dfs[0]['University Name'].unique())

# Declare result var
result = {
    "type": "number",
    "value": total_universities
}
```

```
QA("Number of IUBAT students are there")
```

```
211
Tokens Used: 90
        Prompt Tokens: 89
        Completion Tokens: 1
Total Cost (USD): $ 0.000091
```

```
print(sdf.last_code_generated)
```

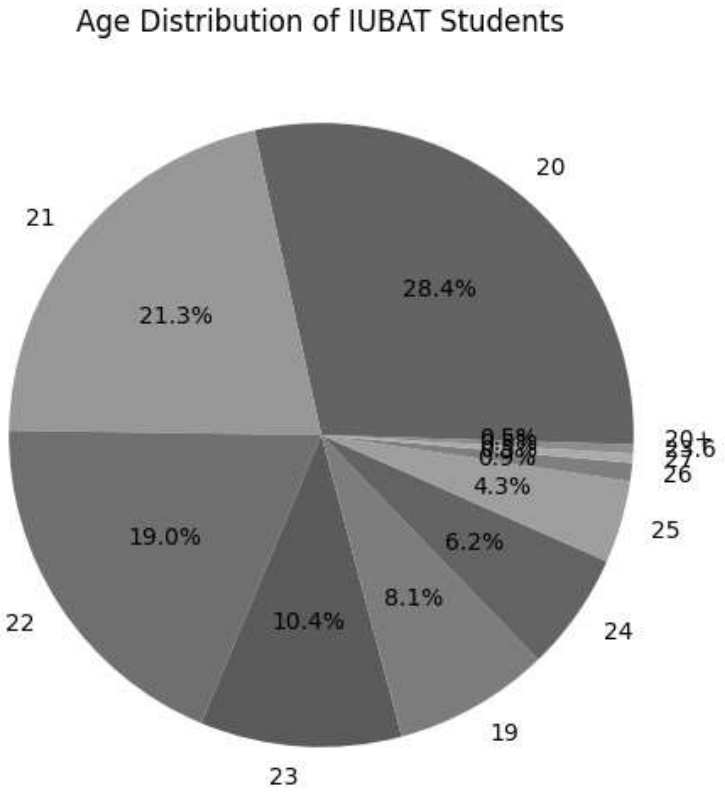
```
# TODO: import the required dependencies
import pandas as pd

# Write code here
total_universities = len(dfs[0]['University Name'].unique())

# Declare result var
result = {
    "type": "number",
    "value": total_universities
}
```

```
QA("Give me the pie chart of IUBAT students age")
```

```
C:/Users/Bikas/Desktop/DataAnalytics/exports/charts/temp_chart.png
Tokens Used: 71
        Prompt Tokens: 70
        Completion Tokens: 1
Total Cost (USD): $ 0.000072
```




```
print(sdf.last_code_generated)
```

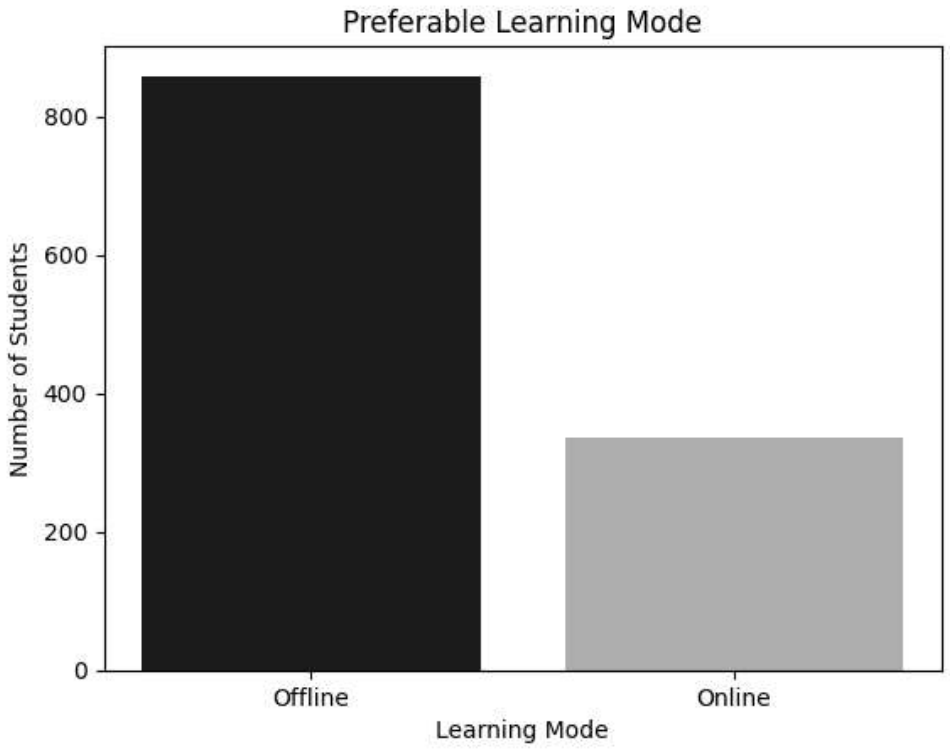
```
# TODO: import the required dependencies
import pandas as pd

# Write code here
total_universities = len(dfs[0]['University Name'].unique())

# Declare result var
result = {
```

```
    "type": "number",
    "value": total_universities
}
```

```
QA("Best prefearable learning mode between offline and online show in bar plot different color")
```




```
C:/Users/Bikas/Desktop/DataAnalytics/exports/charts/temp_chart.png
Tokens Used: 82
        Prompt Tokens: 81
        Completion Tokens: 1
Total Cost (USD): $ 0.000083
```

```
print(sdf.last_code_generated)
```

```
df = dfs[0]
learning_mode_counts = df['What is your preferable learning mode?'].value_counts()
plt.bar(learning_mode_counts.index, learning_mode_counts.values, color=['blue', 'orange'])
plt.xlabel('Learning Mode')
plt.ylabel('Number of Students')
plt.title('Preferable Learning Mode')
```

```
plt.show()
result = {'type': 'plot', 'value': 'C:/Users/Bikas/Desktop/DataAnalytics/exports/charts/temp_chart.png'}
```

```
df["What is your preferable learning mode?"].value_counts()
```

```
Offline    858
Online     336
Name: What is your preferable learning mode?, dtype: int64
```

```
df.head()
```

```
print(QA("provide me Abu Raihan's details"))
```

```
             Timestamp Email Address        ID        Name Gender Age  \
0  6/28/2022 23:19:57           NaN  18303059  Abu Raihan   Male  24

  H.S.C passing year University Admission year University Name Program  ...  \
0               2016                      2018           IUBAT    BCSE  ...

  Do you have any physical disabilities? What is your monthly family income?  \
0                                    No                                25000

  How many family members you have? Are you self dependent?  \
0                                 6                      No

  What is your hometown? Comments Unnamed: 43 What was your previous SGPA?  \
0                Tangail      NaN         NaN                           NaN

  What is your current CGPA? How many Credit did you have completed?
0                        NaN                                    NaN

[1 rows x 47 columns]
None
```

```
print(sdf.last_code_generated)
```

```
result = {}
for df in dfs:
    if 'Abu Raihan' in df['Name'].values:
        details = df[df['Name'] == 'Abu Raihan']
        result = {'type': 'dataframe', 'value': details}
        break
result
```

```
QA("Give me the top 5 years when students pass their HSC")
```

```
                        Year  Count
0                       2016      1
1  Completed Diploma ( 2021)      1
2                  2014-2016      1
3               Diploma-2018      1
4               Diploma 2018      1
Tokens Used: 2222
        Prompt Tokens: 2049
        Completion Tokens: 173
Total Cost (USD): $ 0.002395
```

```
print(sdf.last_code_generated)
```

```
# TODO: import the required dependencies
import pandas as pd

# Write code here
years = []
for df in dfs:
    years.extend(df['H.S.C passing year'].unique())

year_counts = pd.Series(years).value_counts().head(5)

result = {
    "type": "dataframe",
    "value": year_counts
}
```

```
Start coding or generate with AI.
```