Lab Five

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Course: SDEV 300

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Test Case	Test Description	Procedure	Input	Expected Output	Actual Output	Pass?
1. **Main Menu and Input Validation**						
1a	Test if main menu is displayed	+ Run The app	None	Main menu will be displayed	Main menu is displayed	Yes
1b-a	Test if the program validates user input (input must be '1' or '2' or '3')	+ Run The app + Type A	A	A message will be displayed and prompt user to re-enter valid input again	A message is be displayed and prompt user to enter valid input again	Yes
1b-b	Test if the program validates user input (input must be '1' or '2' or '3')	+ Run The app + Type 5	5	A message will be displayed and prompt user to enter valid input again	A message is be displayed and prompt user to enter valid input again	Yes
1b-c	Test if the program validates user input (input must be '1' or '2' or '3')	+ Run The app + Type -1	-1	A message will be displayed and prompt user to enter valid input again	A message is be displayed and prompt user to enter valid input again	Yes
2. Population Data						
2a	Test if the program proceeds to the next menu when user opted "Population Data"	+ Run The app + Type 1	1	The program will proceed to the next menu (Population Data menu.	The program proceeded to the next menu (Population Data menu.	Yes
2b-a	Test if the program validates user input in the population data menu ((input must be 'a' or 'b' or 'c' or 'd')	+ Run The app + Type 1 + Type k	K	A message will be displayed and prompt user to re-enter	A message is displayed and prompted user to re-enter valid input again	Yes

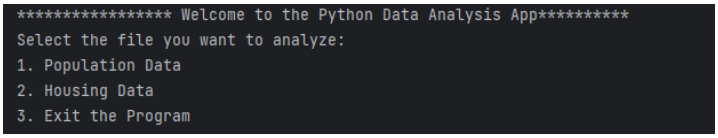
				valid input again		
2b-b	Test if the program validates user input in the population data menu ((input must be ‘a’ or ‘b’ or ‘c’ or ‘d’)	+ Run The app + Type 1 + Type 1a	1a	A message will be displayed and prompt user to re-enter valid input again	A message is displayed and prompted user to re-enter valid input again	Yes
2b-c	Test if the program validates user input in the population data menu ((input must be ‘a’ or ‘b’ or ‘c’ or ‘d’)	+ Run The app + Type 1 + Type ?	?	A message will be displayed and prompt user to re-enter valid input again	A message is displayed and prompted user to re-enter valid input again	Yes
3. Displaying Data from Population Data						
3a	Test if the program displays column information when user opted “Pop Apr 1”	+ Run The app + Type 1 + Type a	a	The count, mean, std, min, max values, and histogram image of ‘Pop Apr 1” column will be displayed	The count, mean, std, min, max values, and histogram image of ‘Pop Apr 1” column is displayed	Yes
3b	Test if the program displays column information when user opted “Pop Jul 1”	+ Run The app + Type 1 + Type b	b	The count, mean, std, min, max values, and histogram image of ‘Pop Jul 1” column will be displayed	The count, mean, std, min, max values, and histogram image of ‘Pop Jul 1” column is displayed	Yes
3c	Test if the program displays column information when user opted “Change Pop”	+ Run The app + Type 1 + Type c	c	The count, mean, std, min, max values, and histogram image of ‘Change Pop” column will be displayed	The count, mean, std, min, max values, and histogram image of ‘Change Pop” column is displayed	Yes
3d	Test if the program returns to the main	+ Run The app + Type 1 + Type d	d	The program will return to	The program exited the column menu	Yes

	menu when user opted “Exit Column”			the main menu	and returned to the main menu.	
4. **Displaying Data from Housing Data**						
4a	Test if the program proceeds to the next menu when user opted “Housing Data”	+ Run The app + Type 2	2	The program will proceed to the next menu (Housing Data menu).	The program proceeded to the next menu (Housing Data menu).	Yes
4b-a	Test if the program validates user input in the population data menu ((input must be ‘a’ or ‘b’ or ‘c’ or ‘d’ or ‘e’ or ‘f’)	+ Run The app + Type 2 + Type k	K	A message will be displayed and prompt user to re-enter valid input again	A message is displayed and prompted user to re-enter valid input again	Yes
4b-b	Test if the program validates user input in the population data menu ((input must be ‘a’ or ‘b’ or ‘c’ or ‘d’ or ‘e’ or ‘f’)	+ Run The app + Type 2 + Type 1	1	A message will be displayed and prompt user to re-enter valid input again	A message is displayed and prompted user to re-enter valid input again	Yes
4b-c	Test if the program validates user input in the population data menu ((input must be ‘a’ or ‘b’ or ‘c’ or ‘d’ or ‘e’ or ‘f’)	+ Run The app + Type 2 + Type ?	?	A message will be displayed and prompt user to re-enter valid input again	A message is displayed and prompted user to re-enter valid input again	Yes
4c	Test if the program displays column information when user opted “AGE”	+ Run The app + Type 2 + Type a	a	The count, mean, std, min, max values, and histogram image of “Age” column will be displayed	The count, mean, std, min, max values, and histogram image of “AGE” column is displayed	Yes
4d	Test if the program displays column information when user opted “BEDROMS”	+ Run The app + Type 2 + Type b	b	The count, mean, std, min, max values, and histogram image of “BEDROMS”	The count, mean, std, min, max values, and histogram image of “BEDROMS”	Yes

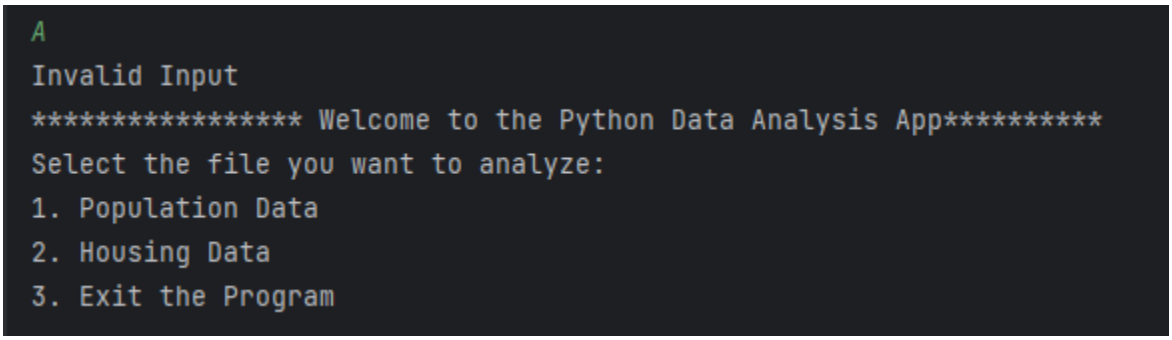
				column will be displayed	column is displayed	
4e	Test if the program displays column information when user opted “BUILT”	+ Run The app + Type 2 + Type c	c	The count, mean, std, min, max values, and histogram image of “BUILT “column will be displayed	The count, mean, std, min, max values, and histogram image of “BUILT “column is displayed	Yes
4f	Test if the program displays column information when user opted “ROOMS”	+ Run The app + Type 2 + Type d	d	The count, mean, std, min, max values, and histogram image of “ROOMS” column will be displayed	The count, mean, std, min, max values, and histogram image of “ROOMS” column is displayed	Yes
4g	Test if the program displays column information when user opted “UTILITY”	+ Run The app + Type 2 + Type e	e	The count, mean, std, min, max values, and histogram image of “UTILITY”” column will be displayed	The count, mean, std, min, max values, and histogram image of “UTILITY”” column is displayed	Yes
4h	Test if the program returns to the main menu when user opted “Exit Column”	+ Run The app + Type 2 + Type f	f	The program will return to the main menu	The program exited the column menu and returned to the main menu.	Yes
5. Exit Program						
5a	Test if the program display a thank you message exit the program when user opted “exit the program”	+ Run The app + Type 3	3	The program will display a thank you message and exit the program	The program displayed a thank you message and exit the program	Yes

Screenshots

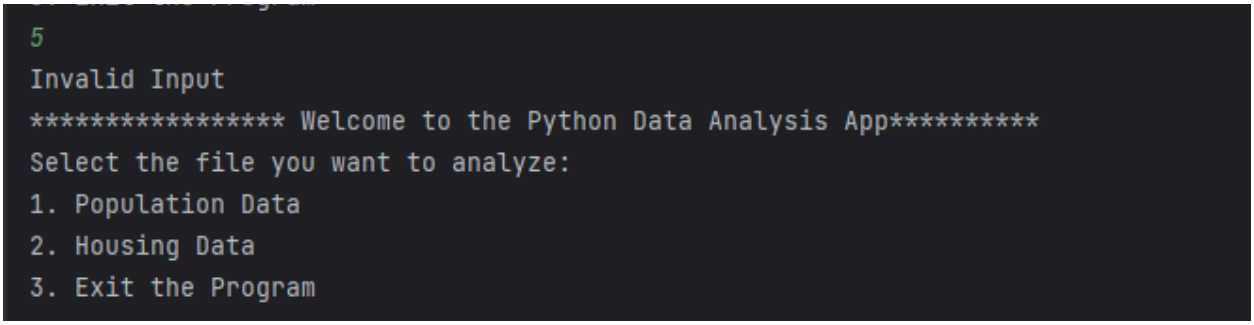
1a



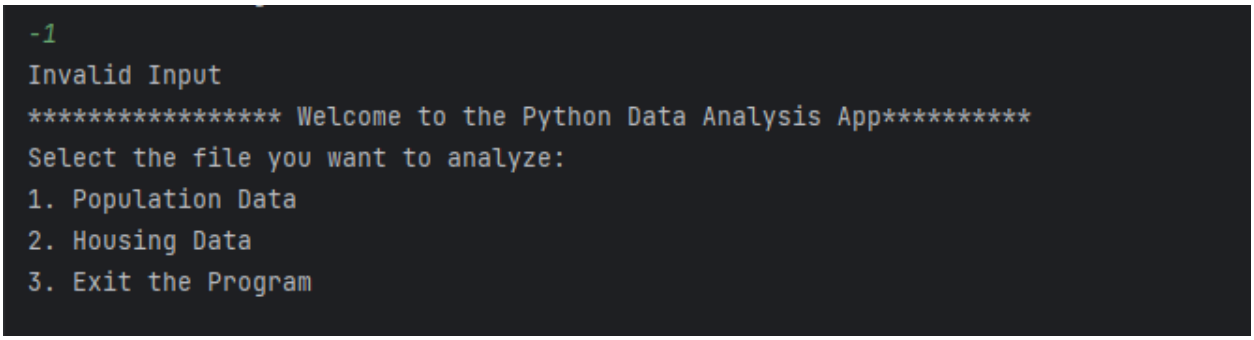
1b-a



1b-b



1b-c



2a

```
1
You have entered Population Data.
Select the Column you want to analyze:
a. Pop Apr 1
b. Pop Jul 1
c. Change Pop
d. Exit Column
```

2b-a

```
K
Invalid Input!!
Select the Column you want to analyze:
a. Pop Apr 1
b. Pop Jul 1
c. Change Pop
d. Exit Column
```

2b-b

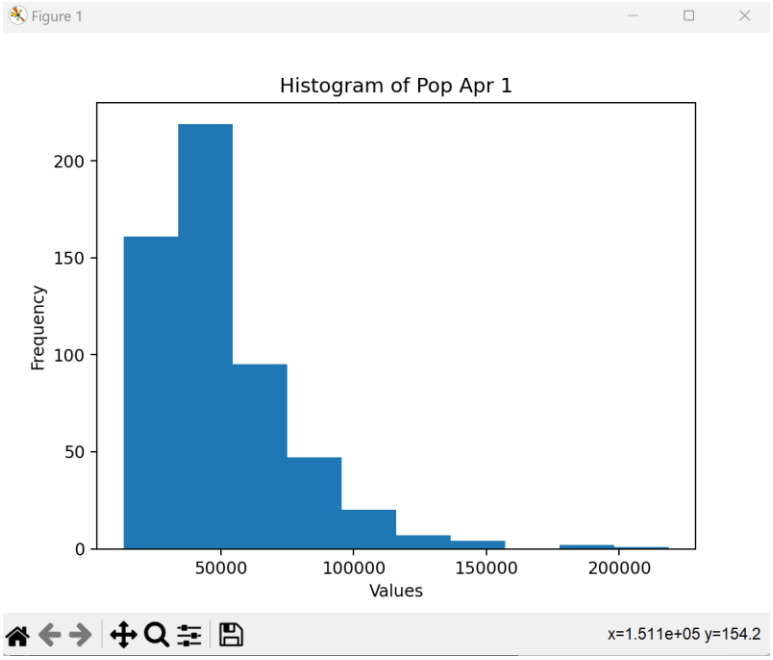
```
1a
Invalid Input!!
Select the Column you want to analyze:
a. Pop Apr 1
b. Pop Jul 1
c. Change Pop
d. Exit Column
```

2b-c

```
?
Invalid Input!!
Select the Column you want to analyze:
a. Pop Apr 1
b. Pop Jul 1
c. Change Pop
d. Exit Column
```

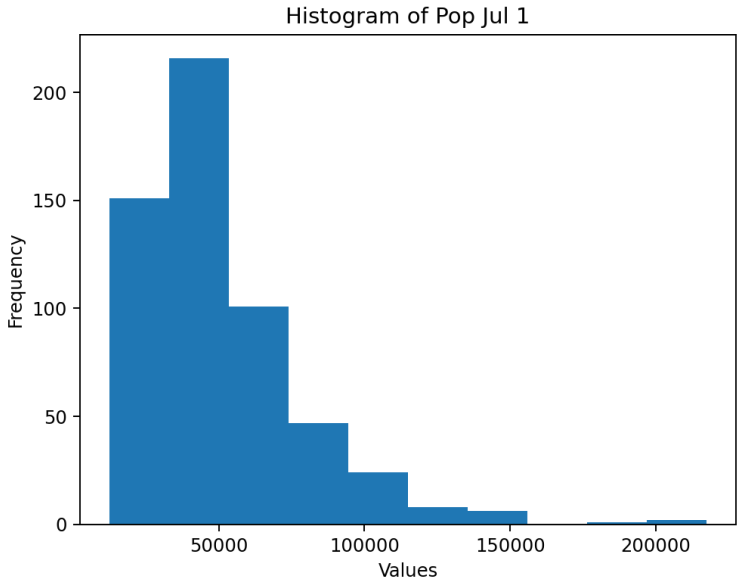
3a

```
a
Count = 556
Mean = 49957.31474820144
Standard Deviation = 27250.710959563166
Min = 13519
Max = 218478
```



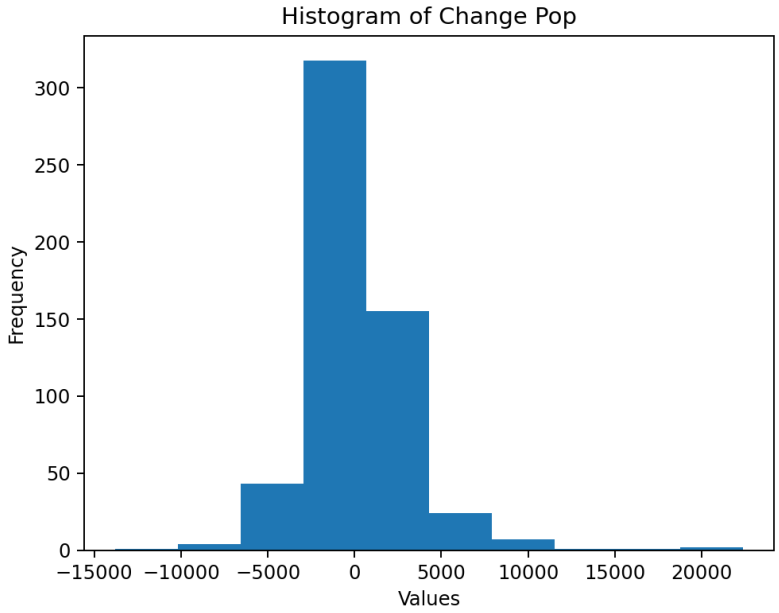
3b

```
b
Count = 556
Mean = 50112.0917266187
Standard Deviation = 27618.449743575722
Min = 12619
Max = 217215
```



3c

```
c
Count = 556
Mean = 154.77697841726618
Standard Deviation = 3050.551686139967
Min = -13775
Max = 22363
```



3d

```
d
********** Welcome to the Python Data Analysis App**********
Select the file you want to analyze:
1. Population Data
2. Housing Data
3. Exit the Program
```

4a

```
2
You have entered Housing  Data.
Select the Column you want to analyze:
a. AGE
b. BEDRMS
c. BUILT
d. ROOMS
e. UTILITY
f. Exit Column
```

4b-a

```
k
Invalid Input!!
Select the Column you want to analyze:
a. AGE
b. BEDRMS
c. BUILT
d. ROOMS
e. UTILITY
f. Exit Column
```

4b-b

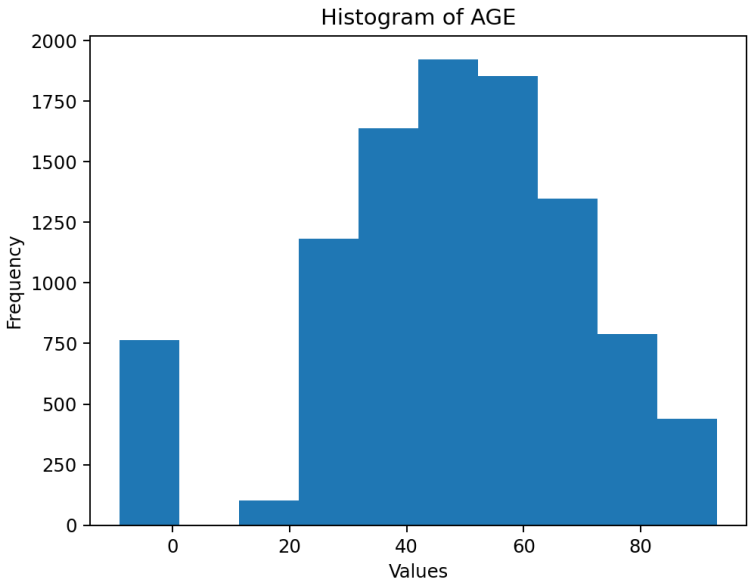
```
1
Invalid Input!!
Select the Column you want to analyze:
a. AGE
b. BEDRMS
c. BUILT
d. ROOMS
e. UTILITY
f. Exit Column
```

4b-c

```
?
Invalid Input!!
Select the Column you want to analyze:
a. AGE
b. BEDRMS
c. BUILT
d. ROOMS
e. UTILITY
f. Exit Column
```

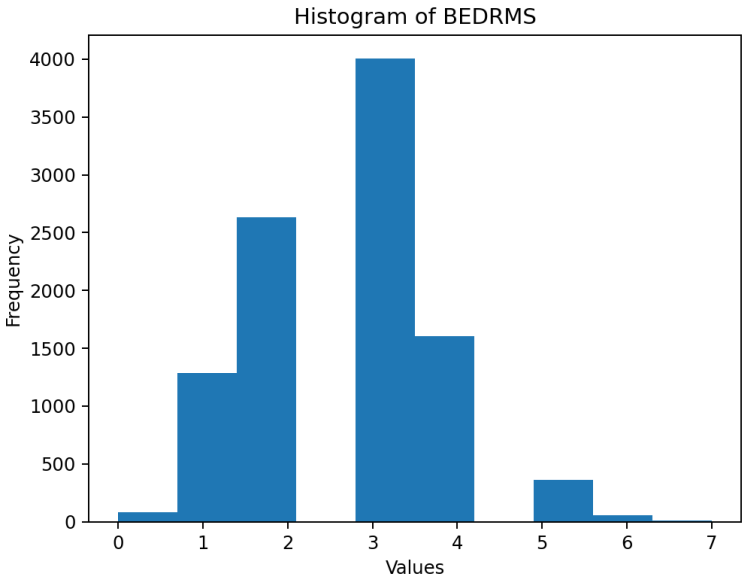
4c

```
a
Count = 10042
Mean = 47.2194781915953
Standard Deviation = 23.149798767083286
Min = -9
Max = 93
```



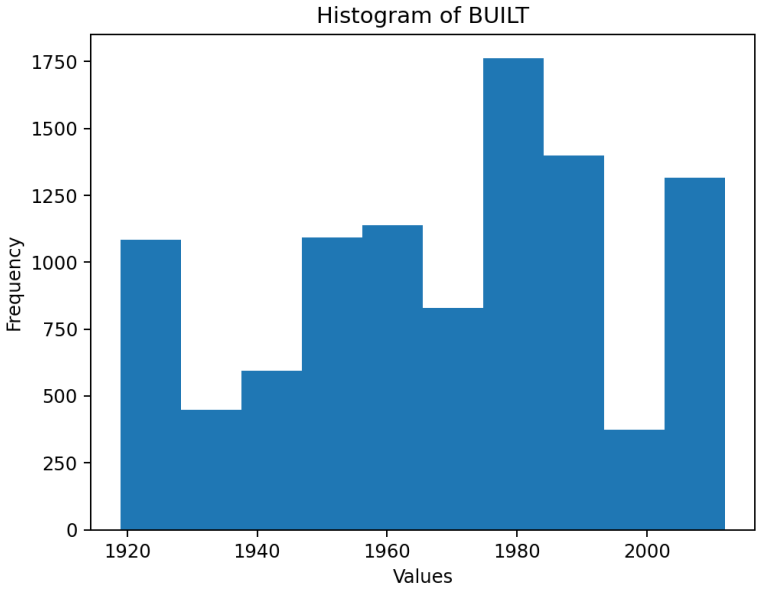
4d

```
b
Count = 10042
Mean = 2.7092212706632144
Standard Deviation = 1.0660362258249467
Min = 0
Max = 7
```



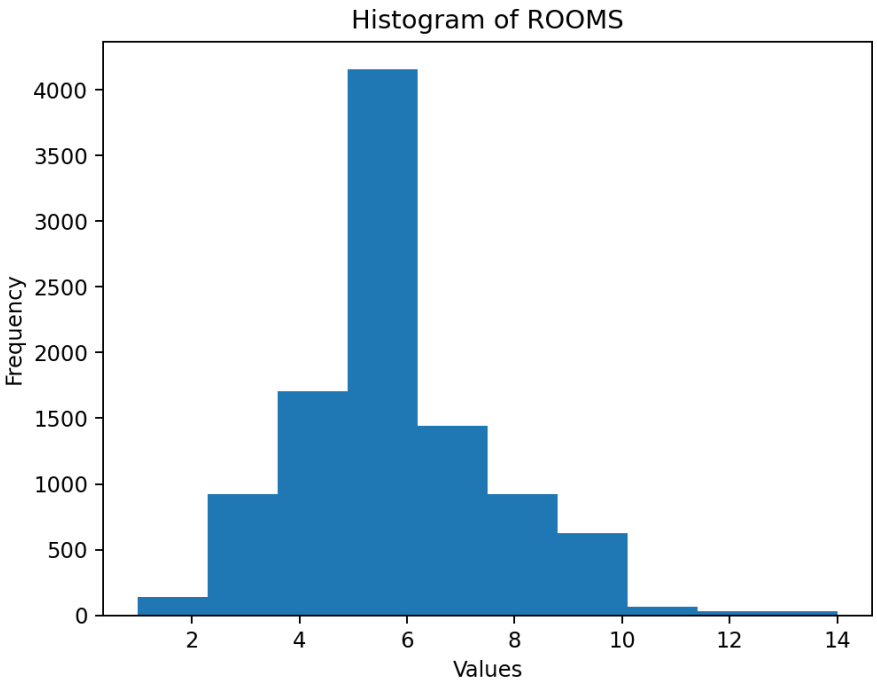
4e

```
c
Count = 10042
Mean = 1966.9522007568214
Standard Deviation = 26.30583051507909
Min = 1919
Max = 2012
```



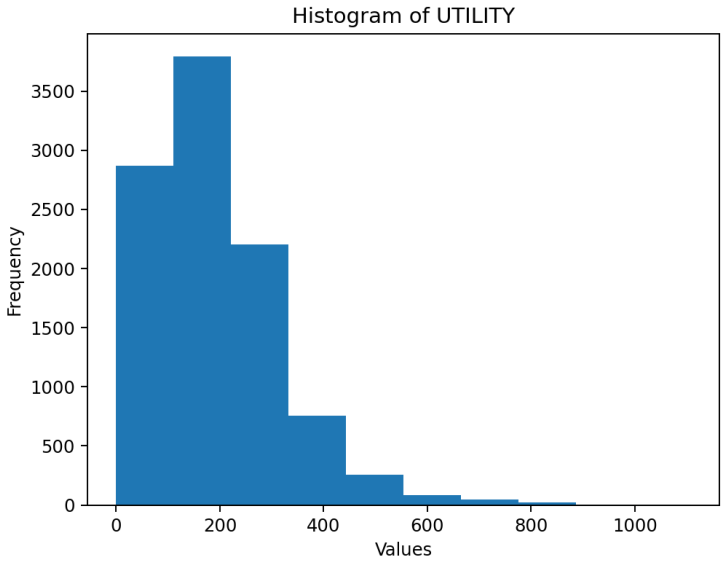
4f

```
d
Count = 10042
Mean = 5.723262298346943
Standard Deviation = 1.8762094576039545
Min = 1
Max = 14
```



4g

```
Count = 10042
Mean = 189.58596395143397
Standard Deviation = 128.92876648751212
Min = 0.0
Max = 1107.583333
```



4h

```
f
********** Welcome to the Python Data Analysis App**********
Select the file you want to analyze:
1. Population Data
2. Housing Data
3. Exit the Program
```

5a

```
********** Welcome to the Python Data Analysis App**********
Select the file you want to analyze:
1. Population Data
2. Housing Data
3. Exit the Program
3
*************** Thanks for using the Data Analysis App**********

Process finished with exit code 0
```

Pylint Analysis

1st Try

```
C:\Users\zack1\PycharmProjects\pythonProject>pylint lab_five.py
************* Module lab_five
lab_five.py:158:0: C0304: Final newline missing (missing-final-newline)
lab_five.py:1:0: C0114: Missing module docstring (missing-module-docstring)
lab_five.py:3:0: E0401: Unable to import 'pandas' (import-error)
lab_five.py:4:0: E0401: Unable to import 'matplotlib.pyplot' (import-error)
lab_five.py:97:4: C0103: Variable name "df" doesn't conform to snake_case naming style (invalid-name)

-----------------------------------
Your code has been rated at 8.19/10
```

Final Try

```
C:\Users\zack1\PycharmProjects\pythonProject>pylint lab_five.py
************* Module lab_five
lab_five.py:12:0: E0401: Unable to import 'pandas' (import-error)
lab_five.py:13:0: E0401: Unable to import 'matplotlib.pyplot' (import-error)

--------------------------------------------------------------------
Your code has been rated at 8.61/10 (previous run: 8.47/10, +0.14)
```

Bandit Vulnerability Detection

Run started:2023-06-19 22:55:50.237690

Test results:

No issues identified.

Code scanned:

Total lines of code: 133

Total lines skipped (#nosec): 0

Total potential issues skipped due to specifically being disabled (e.g., #nosec BXXX): 0

Run metrics:

Total issues (by severity):

Undefined: 0

Low: 0

Medium: 0

High: 0

Total issues (by confidence):

Undefined: 0

Low: 0

Medium: 0

High: 0

Files skipped (0):