



**INFORMATICS
INSTITUTE OF
TECHNOLOGY**

BEng (Hons) Software Engineering

Module: Software Development (SD1)

Module Tutor: Mr. Guhanathan Poravi

Type of Assignment: Individual Coursework

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Student ID: 20240164

UOW ID: w2119685

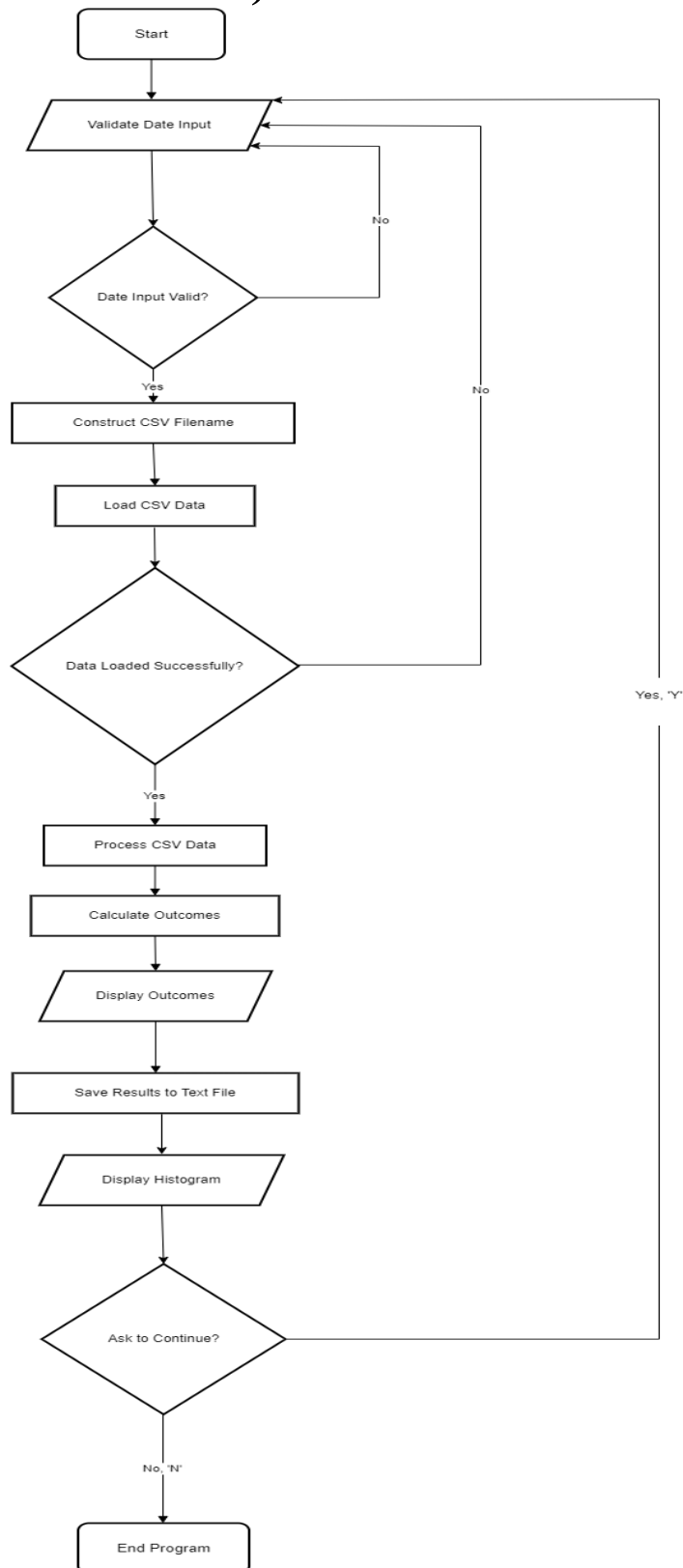
Student Name: D.Nisanda Vindiya Gunasinha

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2.Design (Flow Chart)



3.Program Output

3.1 Output of traffic_data15062024.csv

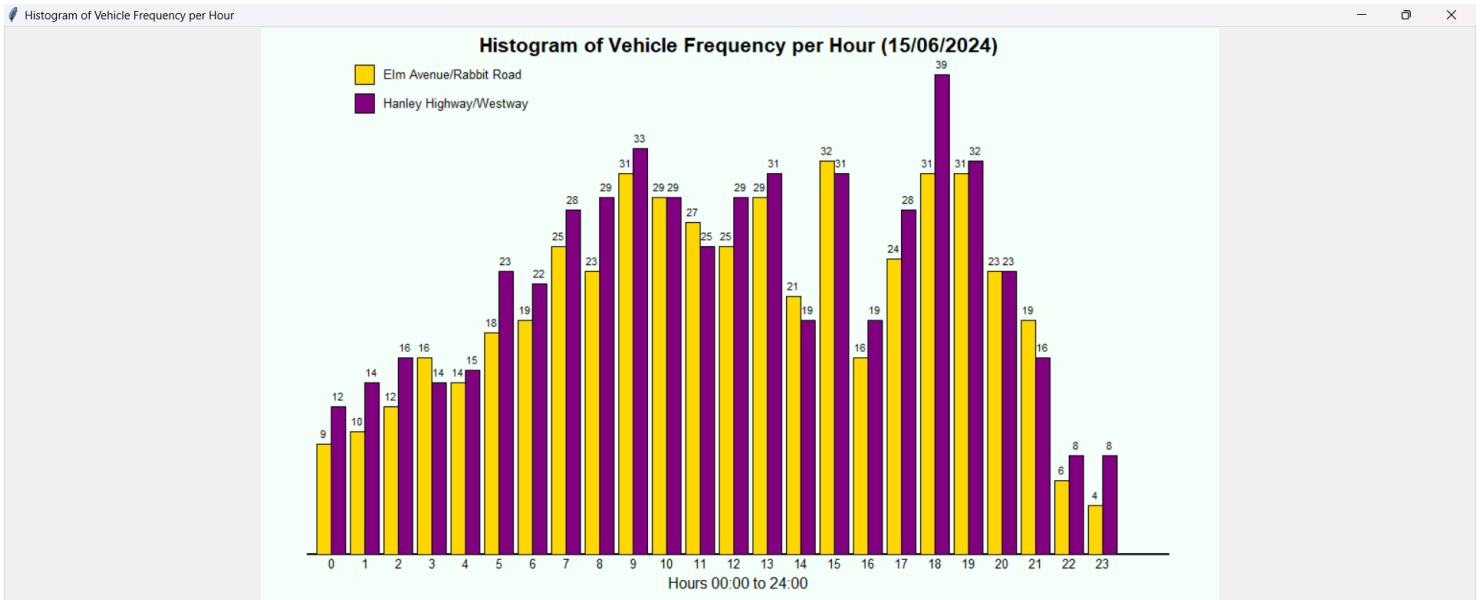
```
*IDLE Shell 3.12.6*
File Edit Shell Debug Options Window Help
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep 6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:\IIT\w2119685\w2119685_Task_D_E.py =====
Please enter the day of the survey in the format dd: 15
15
Please enter the month of the survey in the format MM: 6
6
Please enter the year of the survey in the format YYYY: 2024
2024

*****
The name of the selected CSV file is traffic_data15062024.csv
*****

The total number of vehicles passing through all junctions for the selected date is 1037
The total number of trucks passing through all junctions for the selected date is 109
The total number of electric vehicles passing through all junctions for the selected date is 368
The number of two wheeled vehicles through all junctions for the date (Bicycle, Motorcycle, Scooter) is 401
The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 15
The total number of vehicles passing through both junctions without turning left or right is 363
The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 11%
The average number Bicycles per hour for the selected date (rounded to an integer) is 7
The total number of vehicles recorded as over the speed limit for the selected date is 205
The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 494
The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 543
The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 10%
The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 39
The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 18:00 and 19:00']
The total number of hours of rain on the selected date is 0

*****
You should Exit from histogram before continue with the program
*****

Enter 'Y' to load a new dataset or 'N' to quit:
```



3.2 Output of traffic_data16062024.csv

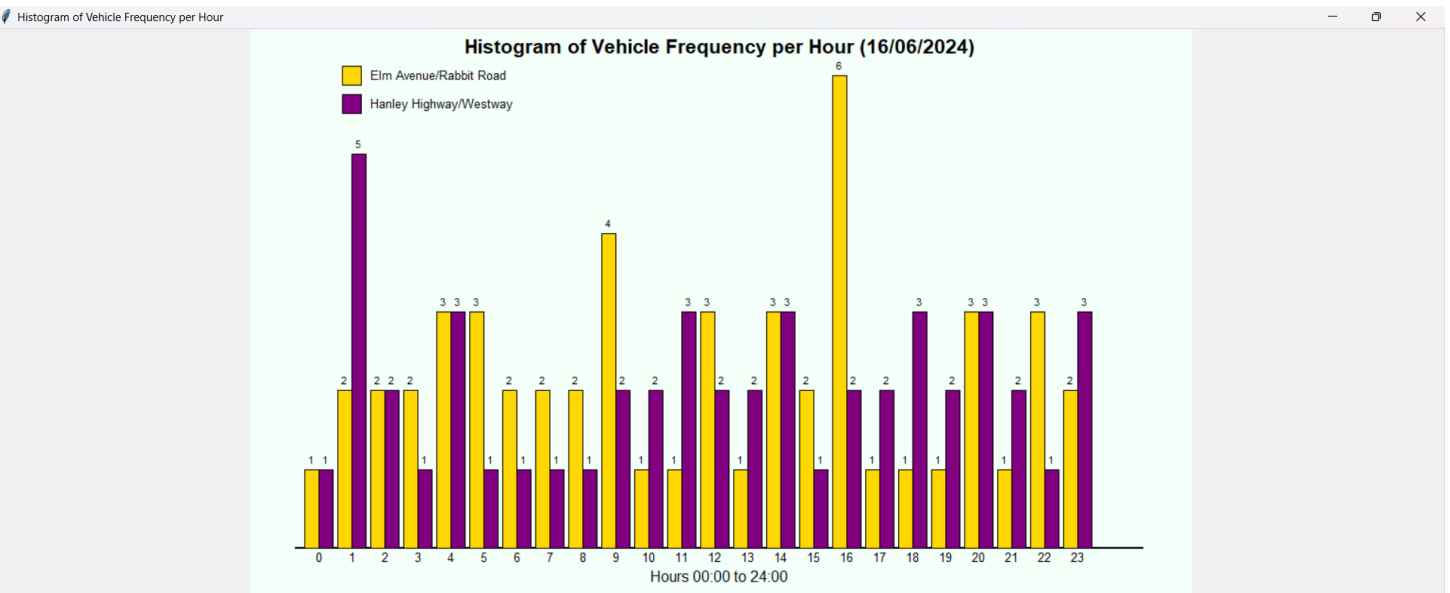
```
IDLE Shell 3.12.6
File Edit Shell Debug Options Window Help
Python 3.12.6 (tags/v3.12.6:4442020, Sep 8 2024, 20:11:25) [MSC v.1940 64-bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\IIT\w2119685\w2119685_Task_D_E.py
Please enter the day of the survey in the format dd: 16
16
Please enter the month of the survey in the format MM: 6
6
Please enter the year of the survey in the format YYYY: 2024
2024

*****
The name of the selected CSV file is traffic_data16062024.csv
*****

The total number of vehicles passing through all junctions for the selected date is 101
The total number of trucks passing through all junctions for the selected date is 11
The total number of electric vehicles passing through all junctions for the selected date is 29
The number of two wheeled vehicles through all junctions for the date (Bicycle, Motorcycle, Scooter) is 29
The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 0
The total number of vehicles passing through both junctions without turning left or right is 38
The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 11%
The average number Bicycles per hour for the selected date (rounded to an integer) is 0
The total number of vehicles recorded as over the speed limit for the selected date is 20
The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 52
The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 49
The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 5%
The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 5
The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 1:00 and 2:00']
The total number of hours of rain on the selected date is 3

*****
You should Exit from histogram before continue with the program
*****

Enter 'Y' to load a new dataset or 'N' to quit: n
End of run
>>>
```



3.3 Output of traffic_data21062024.csv

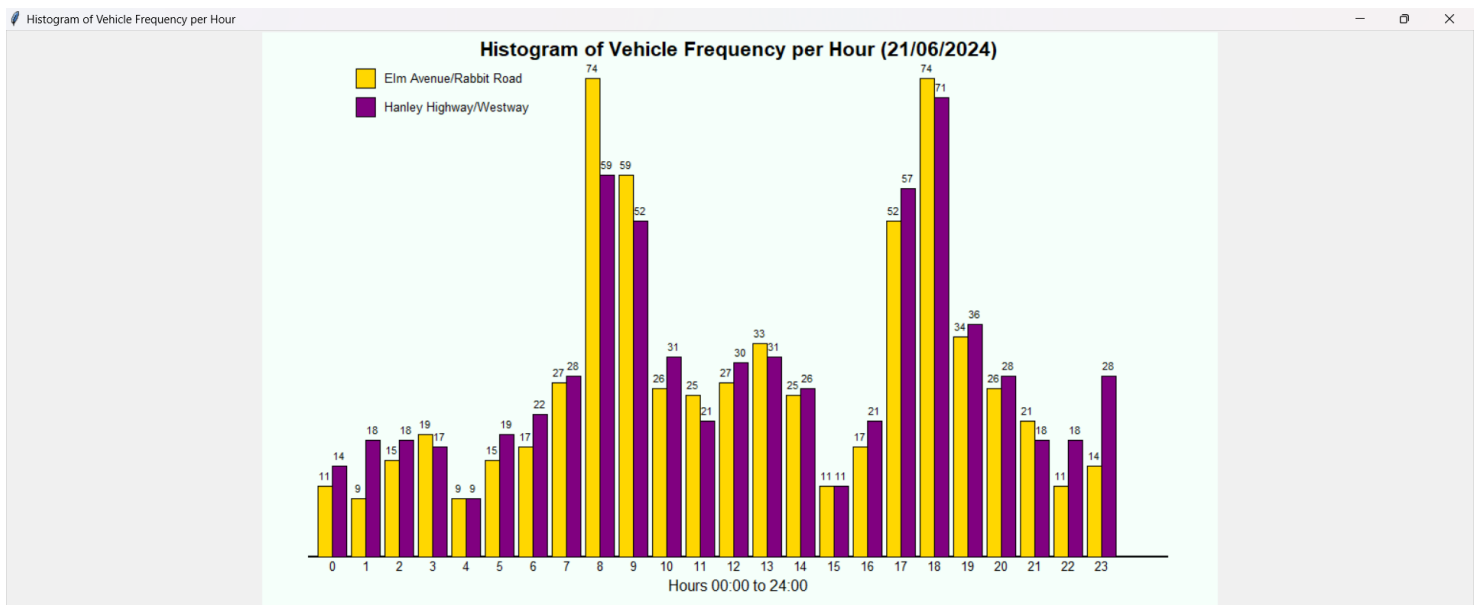
```
IDLE Shell 3.12.6
File Edit Shell Debug Options Window Help
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep 6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\IIT\w2119685\w2119685_Task_D_E.py
Please enter the day of the survey in the format dd: 21
21
Please enter the month of the survey in the format MM: 6
6
Please enter the year of the survey in the format YYYY: 2024
2024

*****
The name of the selected CSV file is traffic_data21062024.csv
*****

The total number of vehicles passing through all junctions for the selected date is 1334
The total number of trucks passing through all junctions for the selected date is 138
The total number of electric vehicles passing through all junctions for the selected date is 442
The number of two wheeled vehicles through all junctions for the date (Bicycle, Motorcycle, Scooter) is 503
The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 19
The total number of vehicles passing through both junctions without turning left or right is 494
The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 10%
The average number Bicycles per hour for the selected date (rounded to an integer) is 10
The total number of vehicles recorded as over the speed limit for the selected date is 250
The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 651
The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 683
The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 9%
The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 71
The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 18:00 and 19:00']
The total number of hours of rain on the selected date is 6

*****
You should Exit from histogram before continue with the program
*****

Enter 'Y' to load a new dataset or 'N' to quit: n
End of run
```



4. Test Cases

Test case	Inputs	Expected Output	Actual Output	Remarks
1	Please enter the day of the survey in the format dd: 15	Please enter the day of the survey in the format dd: 15 15 Please enter the month of the survey in the format MM:		Pass
2	Please enter the month of the survey in the format MM: 6	Please enter the day of the survey in the format dd: 15 15 Please enter the month of the survey in the format MM: 6 6 Please enter the year of the survey in the format YYYY:		Pass
3	Please enter the year of the survey in the format YYYY: 2024	Please enter the day of the survey in the format dd: 15 15 Please enter the month of the survey in the format MM: 6 6 Please enter the year of the survey in the format YYYY: 2024 2024 ***** The name of the selected CSV file is traffic_data15062024.csv ***** The total number of vehicles passing through all junctions for the selected date is 1037 The total number of trucks passing through all junctions for the selected date is 109		Pass

		<p>The total number of electric vehicles passing through all junctions for the selected date is 368</p> <p>The number of “two wheeled” vehicles through all junctions for the date (Bicycle, Motorcycle, Scooter) is 401</p> <p>The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 15</p> <p>The total number of vehicles passing through both junctions without turning left or right is 363</p> <p>The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 11%</p> <p>The average number Bicycles per hour for the selected date (rounded to an integer) is 7</p> <p>The total number of vehicles recorded as over the speed limit for the selected date is 205</p> <p>The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 494</p> <p>The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 543</p> <p>The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 10%</p> <p>The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 39</p> <p>The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 18:00 and 19:00']</p> <p>The total number of hours of rain on the selected date is 0</p> <p>Enter 'Y' to load a new dataset or 'N' to quit:</p>	
--	--	--	--

4	<p>Please enter the day of the survey in the format dd: 25</p> <p>Please enter the month of the survey in the format MM: 6</p> <p>Please enter the year of the survey in the format YYYY: 2024</p>	<p>Please enter the day of the survey in the format dd: 25</p> <p>25</p> <p>Please enter the month of the survey in the format MM: 6</p> <p>6</p> <p>Please enter the year of the survey in the format YYYY: 2024</p> <p>2024</p> <p>File not found. Please check the file path.</p> <p>Enter 'Y' to load a new dataset or 'N' to quit:</p>	Pass
5	Please enter the day of the survey in the format dd: p	<p>Please enter the day of the survey in the format dd: p</p> <p>Integer required</p>	Pass
6	Please enter the day of the survey in the format dd: 32	<p>Please enter the day of the survey in the format dd: 32</p> <p>Out of range - values must be in the range 1 and 31</p>	Pass
7	<p>Please enter the month of the survey in the format MM: March</p>	<p>Please enter the month of the survey in the format MM: March</p> <p>Integer required</p>	Pass
8	Please enter the month of the survey in the format MM: 13	<p>Please enter the month of the survey in the format MM: 13</p> <p>Out of range - values must be in the range 1 and 12</p>	Pass
9	Please enter the year of the survey in the format YYYY: m	<p>Please enter the year of the survey in the format YYYY: m</p> <p>Integer required</p>	Pass
10	Please enter the year of the survey in the format YYYY: 1997	<p>Please enter the year of the survey in the format YYYY: 1997</p> <p>Out of range - values must be in the range 2000 and 2024</p>	Pass
11	Enter 'Y' to load a new dataset or 'N' to quit: y	<p>Please enter the day of the survey in the format dd: 15</p> <p>15</p> <p>Please enter the month of the survey in the format MM: 6</p> <p>6</p> <p>Please enter the year of the survey in the format YYYY: 2024</p> <p>2024</p> <p>*****</p>	Pass

		<p>The name of the selected CSV file is traffic_data15062024.csv</p> <p>*****</p> <p>The total number of vehicles passing through all junctions for the selected date is 1037</p> <p>The total number of trucks passing through all junctions for the selected date is 109</p> <p>The total number of electric vehicles passing through all junctions for the selected date is 368</p> <p>The number of “two wheeled” vehicles through all junctions for the date (Bicycle,Motorcycle,Scooter) is 401</p> <p>The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 15</p> <p>The total number of vehicles passing through both junctions without turning left or right is 363</p> <p>The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 11%</p> <p>The average number Bicycles per hour for the selected date (rounded to an integer) is 7</p> <p>The total number of vehicles recorded as over the speed limit for the selected date is 205</p> <p>The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 494</p> <p>The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 543</p> <p>The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 10%</p> <p>The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 39</p> <p>The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 18:00 and 19:00']</p> <p>The total number of hours of rain on the selected date is 0</p> <p>Enter 'Y' to load a new dataset or 'N' to quit: y</p> <p>Please enter the day of the survey in the format dd: 16</p>	
--	--	--	--

		<div>16</div> <div>Please enter the month of the survey in the format MM: 6</div> <div>6</div> <div>Please enter the year of the survey in the format YYYY: 2024</div> <div>2024</div> <div>*****</div> <div>The name of the selected CSV file is traffic_data16062024.csv</div> <div>*****</div> <div>The total number of vehicles passing through all junctions for the selected date is 101</div> <div>The total number of trucks passing through all junctions for the selected date is 11</div> <div>The total number of electric vehicles passing through all junctions for the selected date is 29</div> <div>The number of “two wheeled” vehicles through all junctions for the date (Bicycle,Motorcycle,Scooter) is 29</div> <div>The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 0</div> <div>The total number of vehicles passing through both junctions without turning left or right is 38</div> <div>The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 11%</div> <div>The average number Bicycles per hour for the selected date (rounded to an integer) is 0</div> <div>The total number of vehicles recorded as over the speed limit for the selected date is 20</div> <div>The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 52</div> <div>The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 49</div>	
--	--	---	--

		<p>The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 5%</p> <p>The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 5</p> <p>The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 1:00 and 2:00']</p> <p>The total number of hours of rain on the selected date is 3</p> <p>Enter 'Y' to load a new dataset or 'N' to quit:</p>	
--	--	--	--

12	Enter 'Y' to load a new dataset or 'N' to quit: n	<p>Please enter the day of the survey in the format dd: 15</p> <p>15</p> <p>Please enter the month of the survey in the format MM:</p> <p>6</p> <p>6</p> <p>Please enter the year of the survey in the format YYYY: 2024</p> <p>2024</p> <p>*****</p> <p>The name of the selected CSV file is traffic_data15062024.csv</p> <p>*****</p> <p>The total number of vehicles passing through all junctions for the selected date is 1037</p> <p>The total number of trucks passing through all junctions for the selected date is 109</p> <p>The total number of electric vehicles passing through all junctions for the selected date is 368</p> <p>The number of “two wheeled” vehicles through all junctions for the date (Bicycle, Motorcycle, Scooter) is 401</p> <p>The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 15</p> <p>The total number of vehicles passing through both junctions without turning left or right is 363</p> <p>The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 11%</p> <p>The average number Bicycles per hour for the selected date (rounded to an integer) is 7</p> <p>The total number of vehicles recorded as over the speed limit for the selected date is 205</p> <p>The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 494</p>	Pass
----	---	---	------

		<p>The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 543</p> <p>The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 10%</p> <p>The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 39</p> <p>The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 18:00 and 19:00']</p> <p>The total number of hours of rain on the selected date is 0</p> <p>Enter 'Y' to load a new dataset or 'N' to quit: n</p> <p>End of run</p>	
--	--	---	--

4.1 Screen Shots

4.1.1 Test Case 1

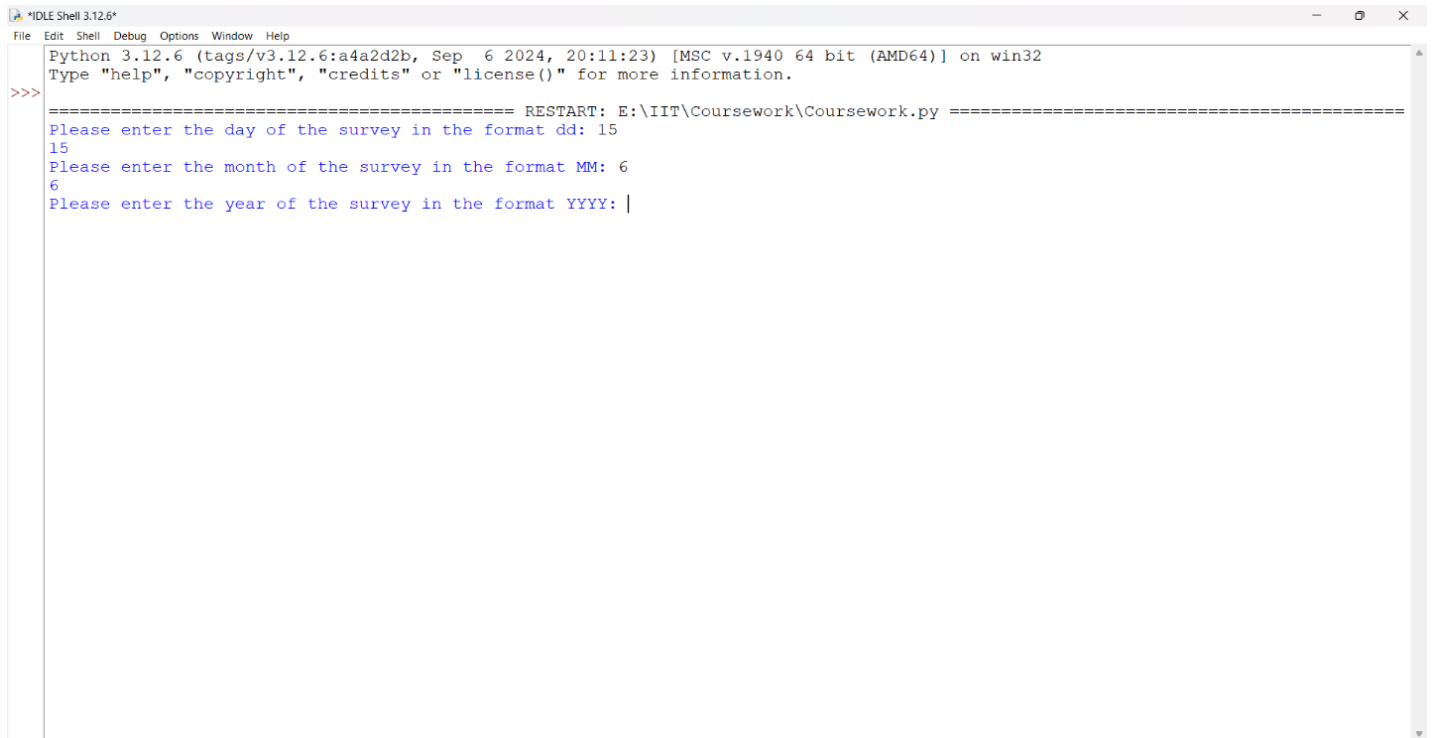
Validation of Day



```
*IDLE Shell 3.12.6*
File Edit Shell Debug Options Window Help
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep  6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:\IIT\Coursework\Coursework.py =====
Please enter the day of the survey in the format dd: 15
15
Please enter the month of the survey in the format MM:
```

4.1.1 Test Case 2

Validation of Month



```
*IDLE Shell 3.12.6*
File Edit Shell Debug Options Window Help
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep  6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:\IIT\Coursework\Coursework.py =====
Please enter the day of the survey in the format dd: 15
15
Please enter the month of the survey in the format MM: 6
6
Please enter the year of the survey in the format YYYY: |
```


4.1.1 Test Case 3

Validation of Year

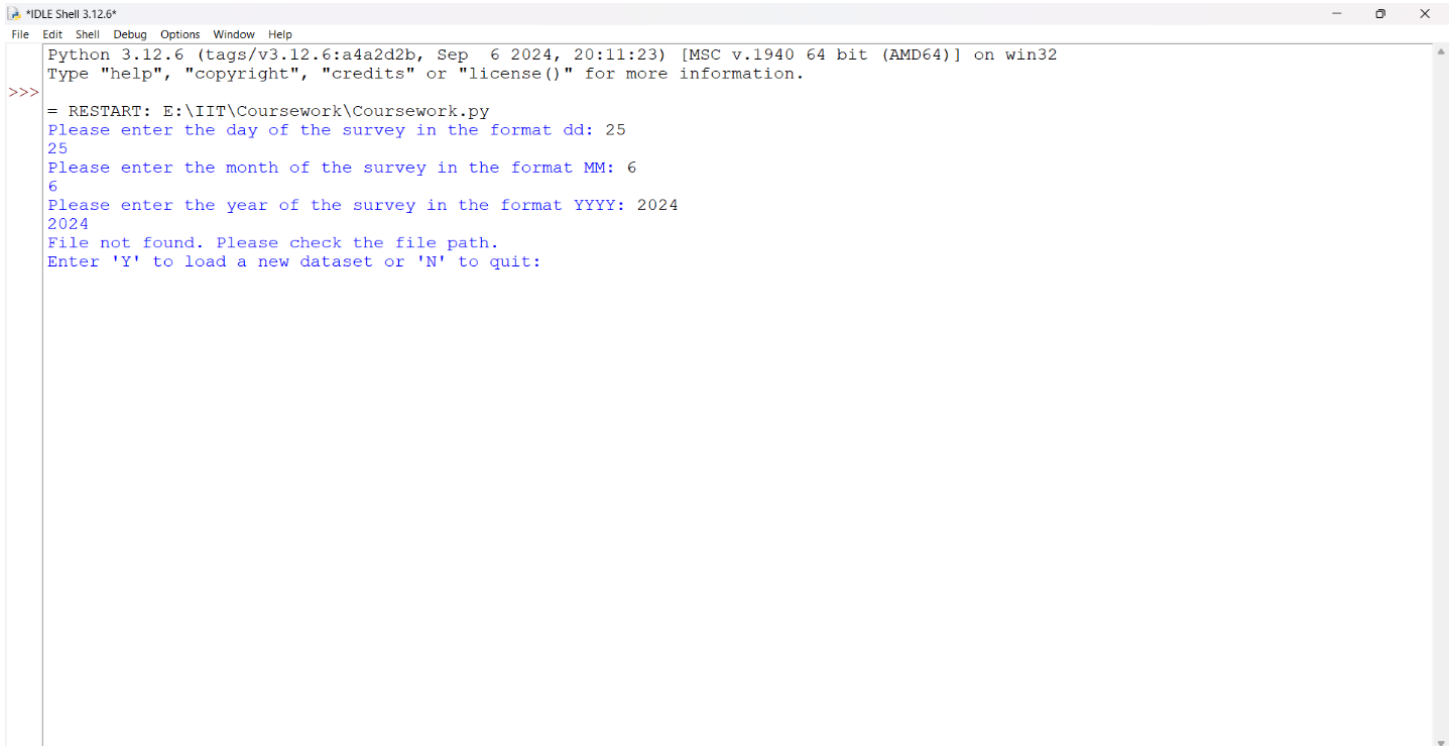
```
*IDLE Shell 3.12.6*
File Edit Shell Debug Options Window Help
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep 6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:\IIT\Coursework\Coursework.py =====
Please enter the day of the survey in the format dd: 15
15
Please enter the month of the survey in the format MM: 6
6
Please enter the year of the survey in the format YYYY: 2024
2024

|*****
|The name of the selected CSV file is traffic_data15062024.csv
|*****

The total number of vehicles passing through all junctions for the selected date is 1037
The total number of trucks passing through all junctions for the selected date is 109
The total number of electric vehicles passing through all junctions for the selected date is 368
The number of "two wheeled" vehicles through all junctions for the date (Bicycle,Motorcycle,Scooter) is 401
The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 15
The total number of vehicles passing through both junctions without turning left or right is 363
The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 11%
The average number Bicycles per hour for the selected date (rounded to an integer) is 7
The total number of vehicles recorded as over the speed limit for the selected date is 205
The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 494
The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 543
The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 10%
The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 39
The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 18:00 and 19:00']
The total number of hours of rain on the selected date is 0
Enter 'Y' to load a new dataset or 'N' to quit:
```

4.1.1 Test Case 4

File Not Found Error

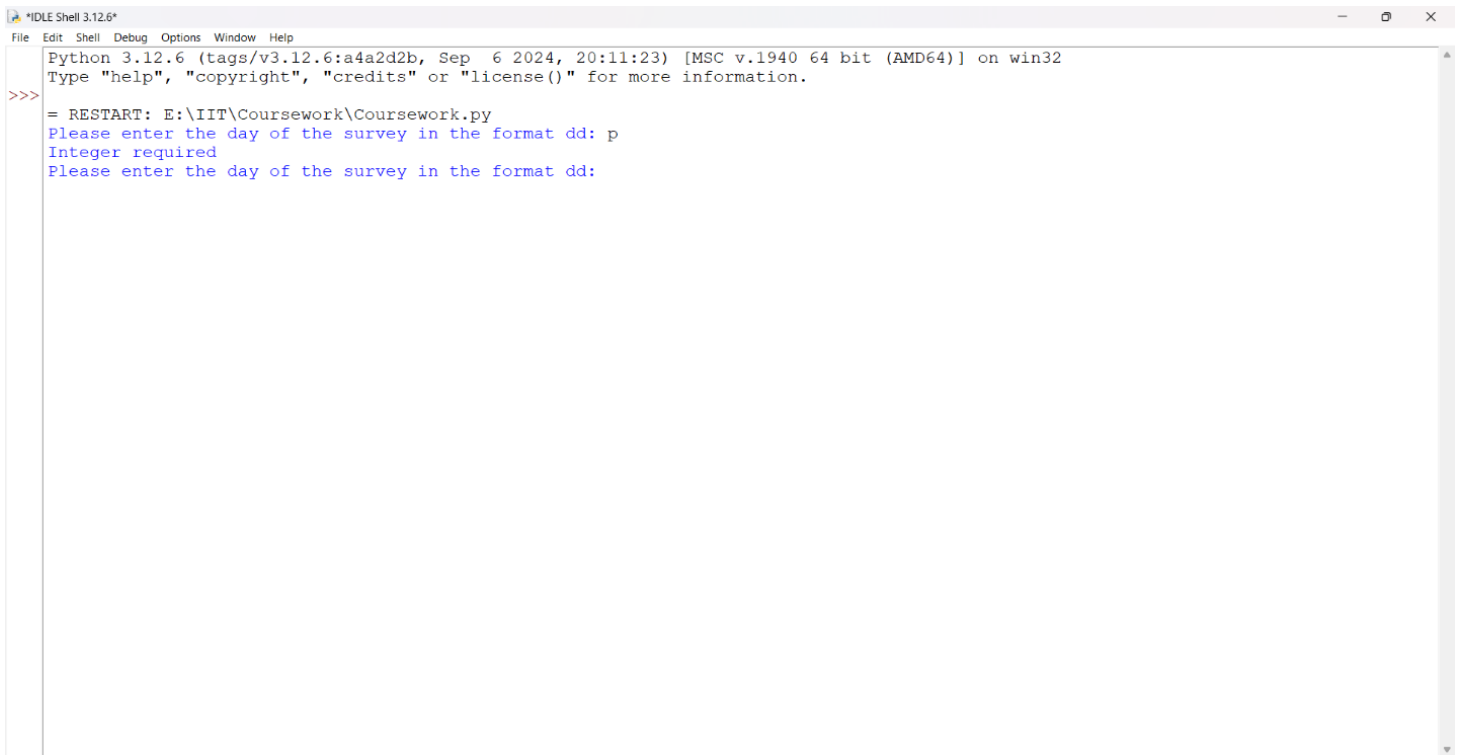


The screenshot shows an IDLE Shell window titled "IDLE Shell 3.12.6". The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The shell displays the following text:

```
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep 6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\IIT\Coursework\Coursework.py
Please enter the day of the survey in the format dd: 25
25
Please enter the month of the survey in the format MM: 6
6
Please enter the year of the survey in the format YYYY: 2024
2024
File not found. Please check the file path.
Enter 'Y' to load a new dataset or 'N' to quit:
```

4.1.1 Test Case 5

Invalidation of Day (Integer Error)



The screenshot shows a Python IDLE Shell window titled "IDLE Shell 3.12.6". The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The shell displays the following text:

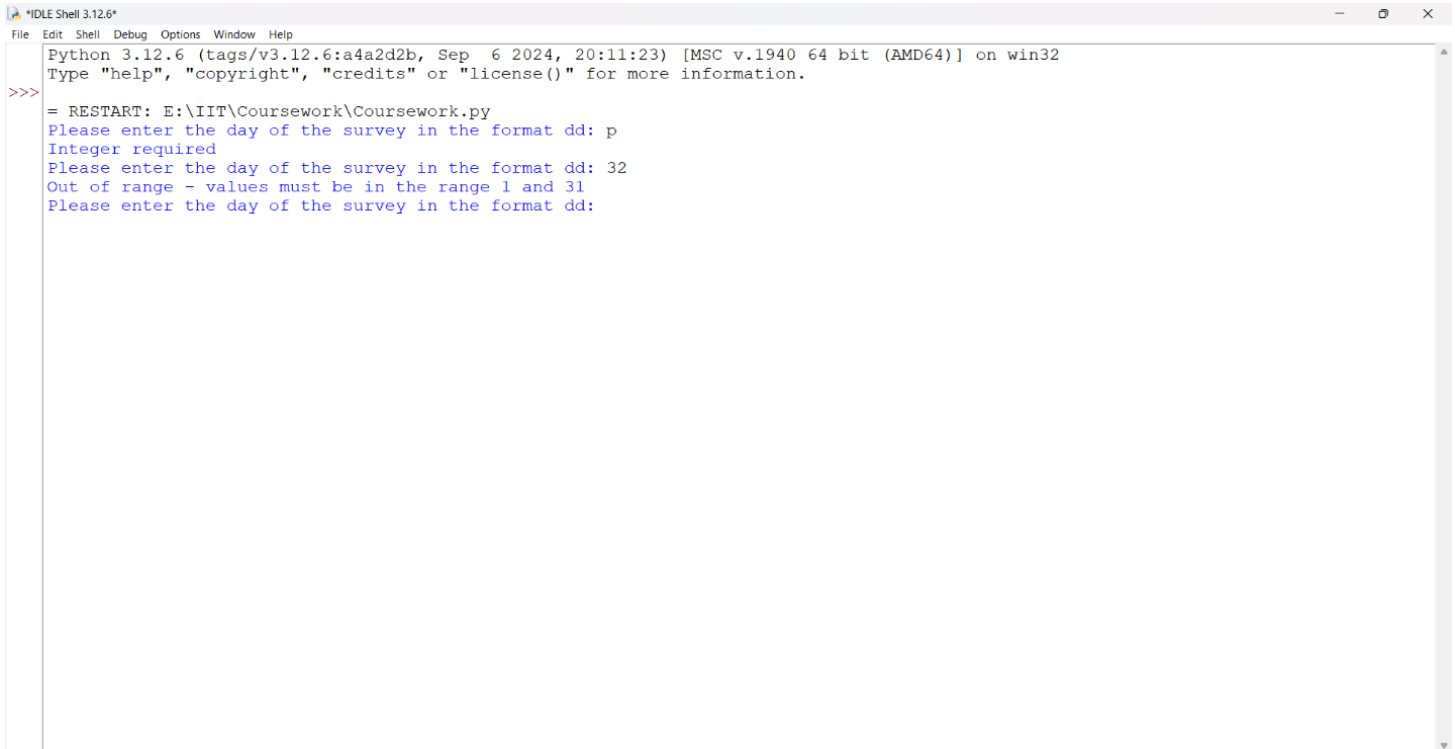
```
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep 6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

>>>
= RESTART: E:\IIT\Coursework\Coursework.py
Please enter the day of the survey in the format dd: p
Integer required
Please enter the day of the survey in the format dd:
```

The error message "Integer required" indicates that the input 'p' is not a valid integer for the day of the survey.

4.1.1 Test Case 6

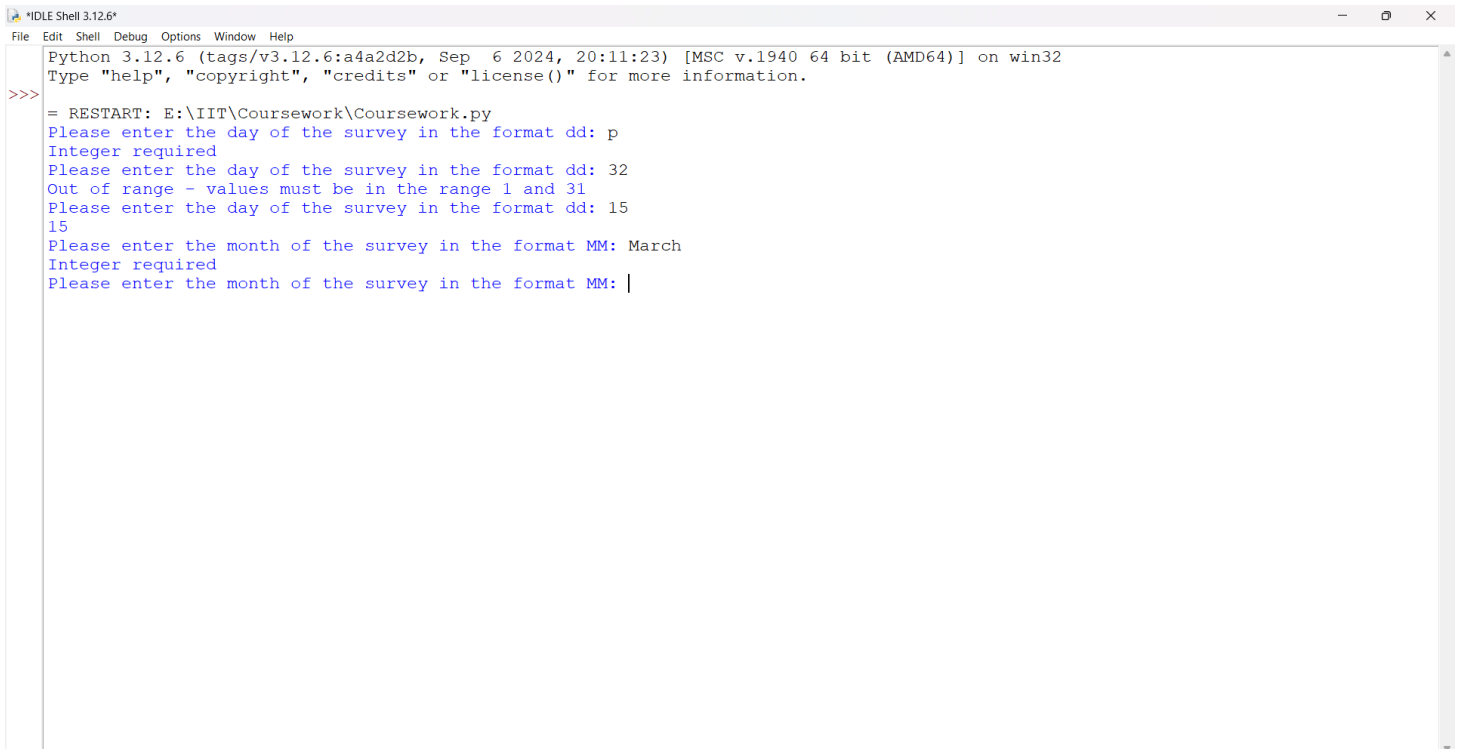
Invalidation of Day (Out of Range Error)



```
*IDLE Shell 3.12.6*
File Edit Shell Debug Options Window Help
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep 6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\IIT\Coursework\Coursework.py
Please enter the day of the survey in the format dd: p
Integer required
Please enter the day of the survey in the format dd: 32
Out of range - values must be in the range 1 and 31
Please enter the day of the survey in the format dd:
```

4.1.1 Test Case 7

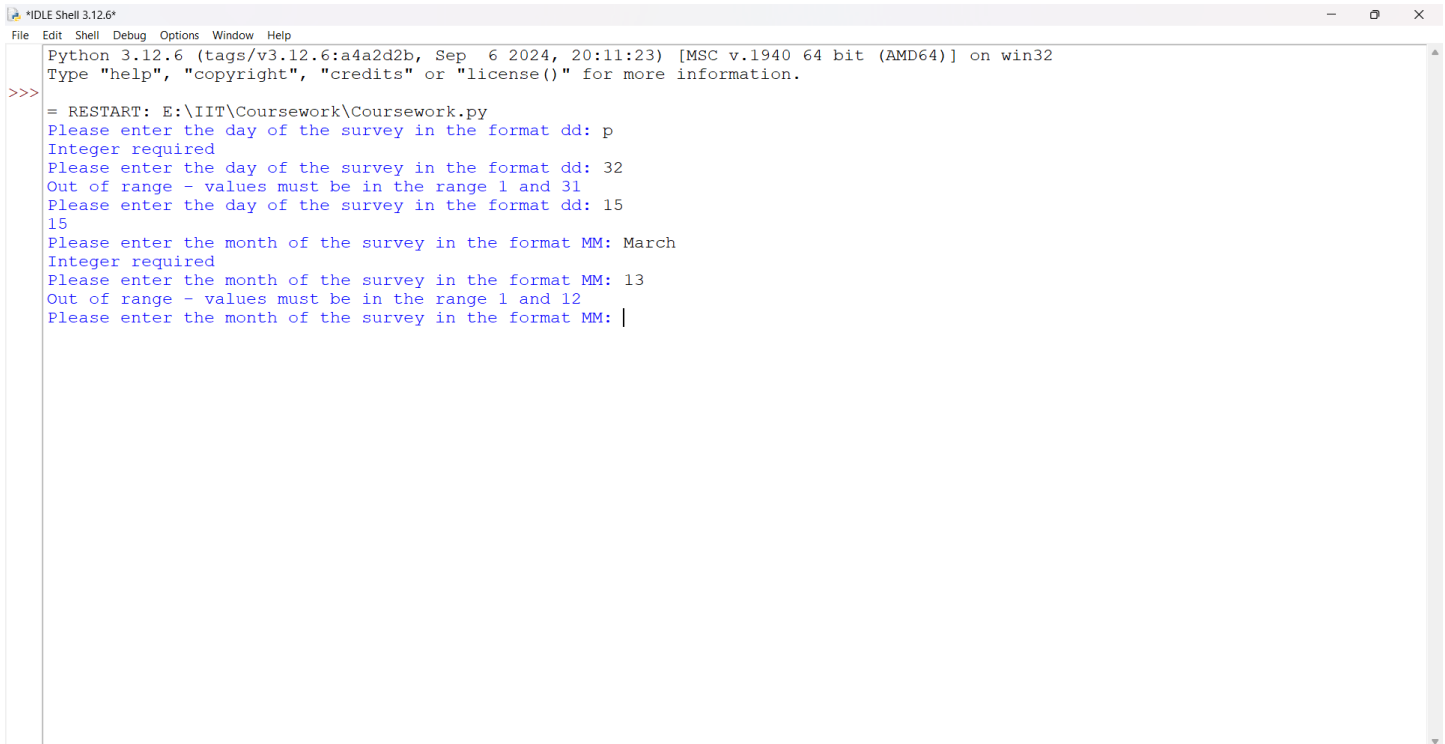
Invalidation of Month (Integer Error)



```
*IDLE Shell 3.12.6*
File Edit Shell Debug Options Window Help
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep 6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\IIT\Coursework\Coursework.py
Please enter the day of the survey in the format dd: p
Integer required
Please enter the day of the survey in the format dd: 32
Out of range - values must be in the range 1 and 31
Please enter the day of the survey in the format dd: 15
15
Please enter the month of the survey in the format MM: March
Integer required
Please enter the month of the survey in the format MM: |
```

4.1.1 Test Case 8

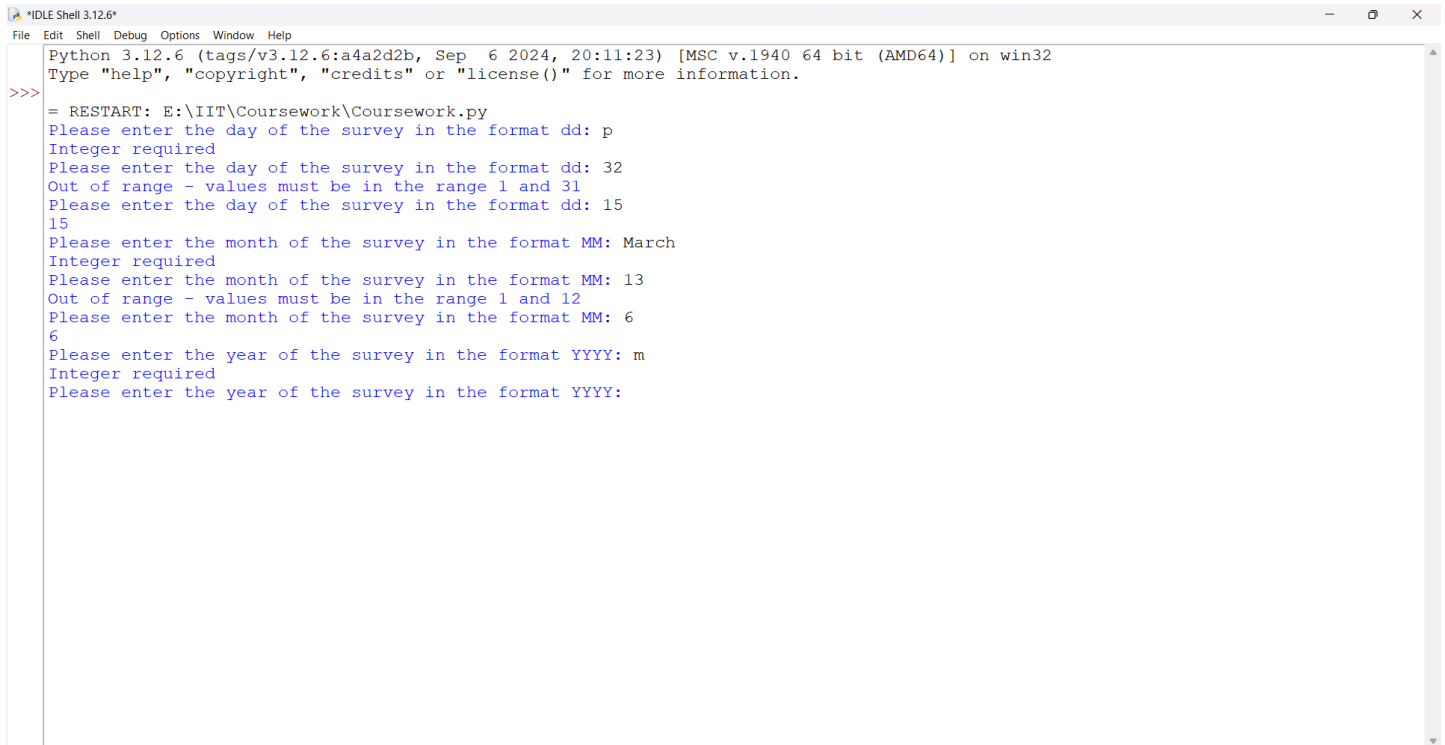
Invalidation of Month (Out of Range Error)



```
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep  6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\IIT\Coursework\Coursework.py
Please enter the day of the survey in the format dd: p
Integer required
Please enter the day of the survey in the format dd: 32
Out of range - values must be in the range 1 and 31
Please enter the day of the survey in the format dd: 15
15
Please enter the month of the survey in the format MM: March
Integer required
Please enter the month of the survey in the format MM: 13
Out of range - values must be in the range 1 and 12
Please enter the month of the survey in the format MM: |
```

4.1.1 Test Case 9

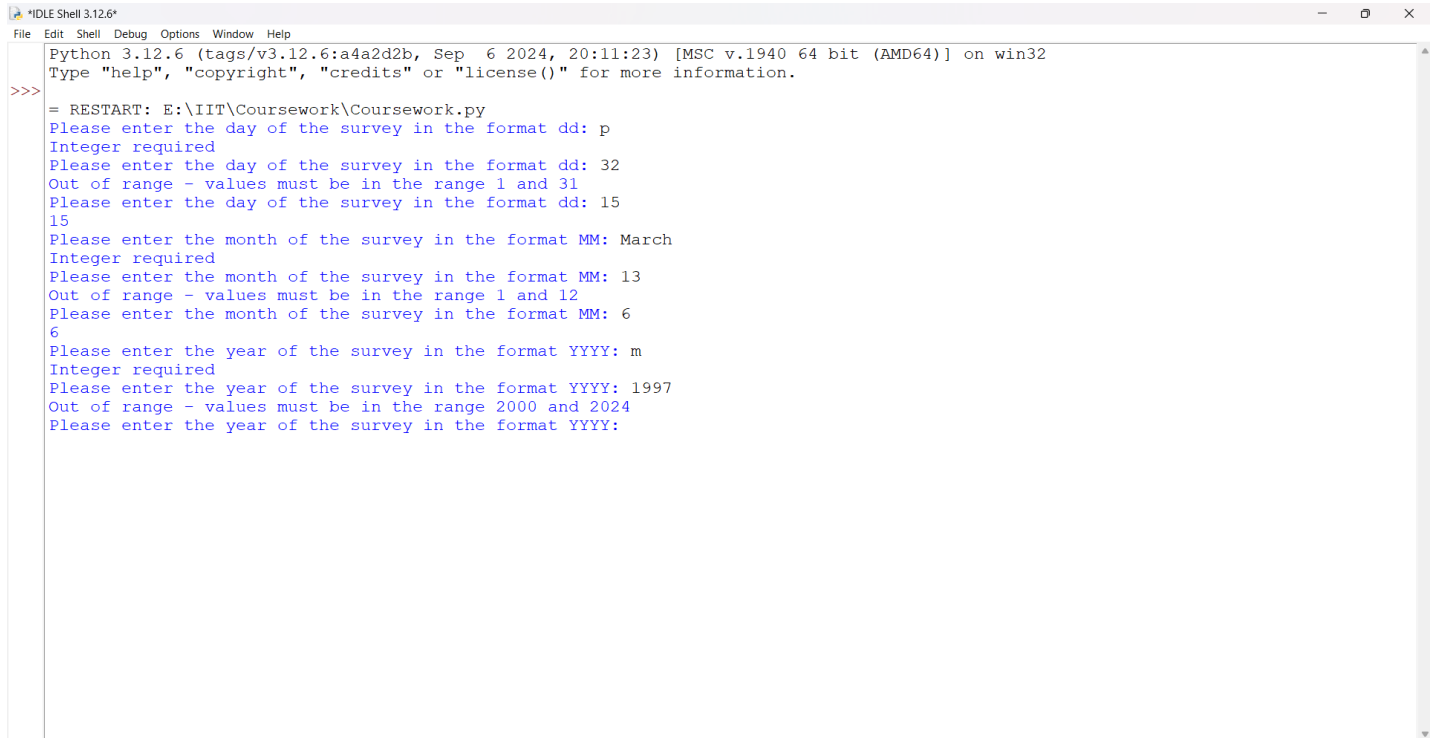
Invalidation of Year (Integer Error)



```
*IDLE Shell 3.12.6*
File Edit Shell Debug Options Window Help
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep 6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\IIT\Coursework\Coursework.py
Please enter the day of the survey in the format dd: p
Integer required
Please enter the day of the survey in the format dd: 32
Out of range - values must be in the range 1 and 31
Please enter the day of the survey in the format dd: 15
15
Please enter the month of the survey in the format MM: March
Integer required
Please enter the month of the survey in the format MM: 13
Out of range - values must be in the range 1 and 12
Please enter the month of the survey in the format MM: 6
6
Please enter the year of the survey in the format YYYY: m
Integer required
Please enter the year of the survey in the format YYYY:
```

4.1.1 Test Case 10

Invalidation of Year (Out of Range Error)



```
*IDLE Shell 3.12.6*
File Edit Shell Debug Options Window Help
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep  6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\IIT\Coursework\Coursework.py
Please enter the day of the survey in the format dd: p
Integer required
Please enter the day of the survey in the format dd: 32
Out of range - values must be in the range 1 and 31
Please enter the day of the survey in the format dd: 15
15
Please enter the month of the survey in the format MM: March
Integer required
Please enter the month of the survey in the format MM: 13
Out of range - values must be in the range 1 and 12
Please enter the month of the survey in the format MM: 6
6
Please enter the year of the survey in the format YYYY: m
Integer required
Please enter the year of the survey in the format YYYY: 1997
Out of range - values must be in the range 2000 and 2024
Please enter the year of the survey in the format YYYY:
```


4.1.1 Test Case 11

Request to Load a New Dataset (Input “Y”)

```
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep 6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\IIT\Coursework\Coursework.py
Please enter the day of the survey in the format dd: 15
15
Please enter the month of the survey in the format MM: 6
6
Please enter the year of the survey in the format YYYY: 2024
2024

*****
The name of the selected CSV file is traffic_data15062024.csv
*****

The total number of vehicles passing through all junctions for the selected date is 1037
The total number of trucks passing through all junctions for the selected date is 109
The total number of electric vehicles passing through all junctions for the selected date is 368
The number of "two wheeled" vehicles through all junctions for the date (Bicycle, Motorcycle, Scooter) is 401
The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 15
The total number of vehicles passing through both junctions without turning left or right is 363
The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 11%
The average number Bicycles per hour for the selected date (rounded to an integer) is 7
The total number of vehicles recorded as over the speed limit for the selected date is 205
The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 494
The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 543
The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 10%
The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 39
The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 18:00 and 19:00']
The total number of hours of rain on the selected date is 0
Enter 'Y' to load a new dataset or 'N' to quit: y
Please enter the day of the survey in the format dd: 16
16
Please enter the month of the survey in the format MM: 6
6
Please enter the year of the survey in the format YYYY: 2024
2024

*****
The name of the selected CSV file is traffic_data16062024.csv
*****

The total number of vehicles passing through all junctions for the selected date is 101
The total number of trucks passing through all junctions for the selected date is 11
The total number of electric vehicles passing through all junctions for the selected date is 29
The number of "two wheeled" vehicles through all junctions for the date (Bicycle, Motorcycle, Scooter) is 29
The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 0
The total number of vehicles passing through both junctions without turning left or right is 38
The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 11%
The average number Bicycles per hour for the selected date (rounded to an integer) is 0
The total number of vehicles recorded as over the speed limit for the selected date is 20
The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 52
The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 49
The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 5%
The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 5
The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 1:00 and 2:00']
The total number of hours of rain on the selected date is 3
Enter 'Y' to load a new dataset or 'N' to quit: |
```

4.1.1 Test Case 12

Declining the Request to Load a New Dataset (Input “N”)

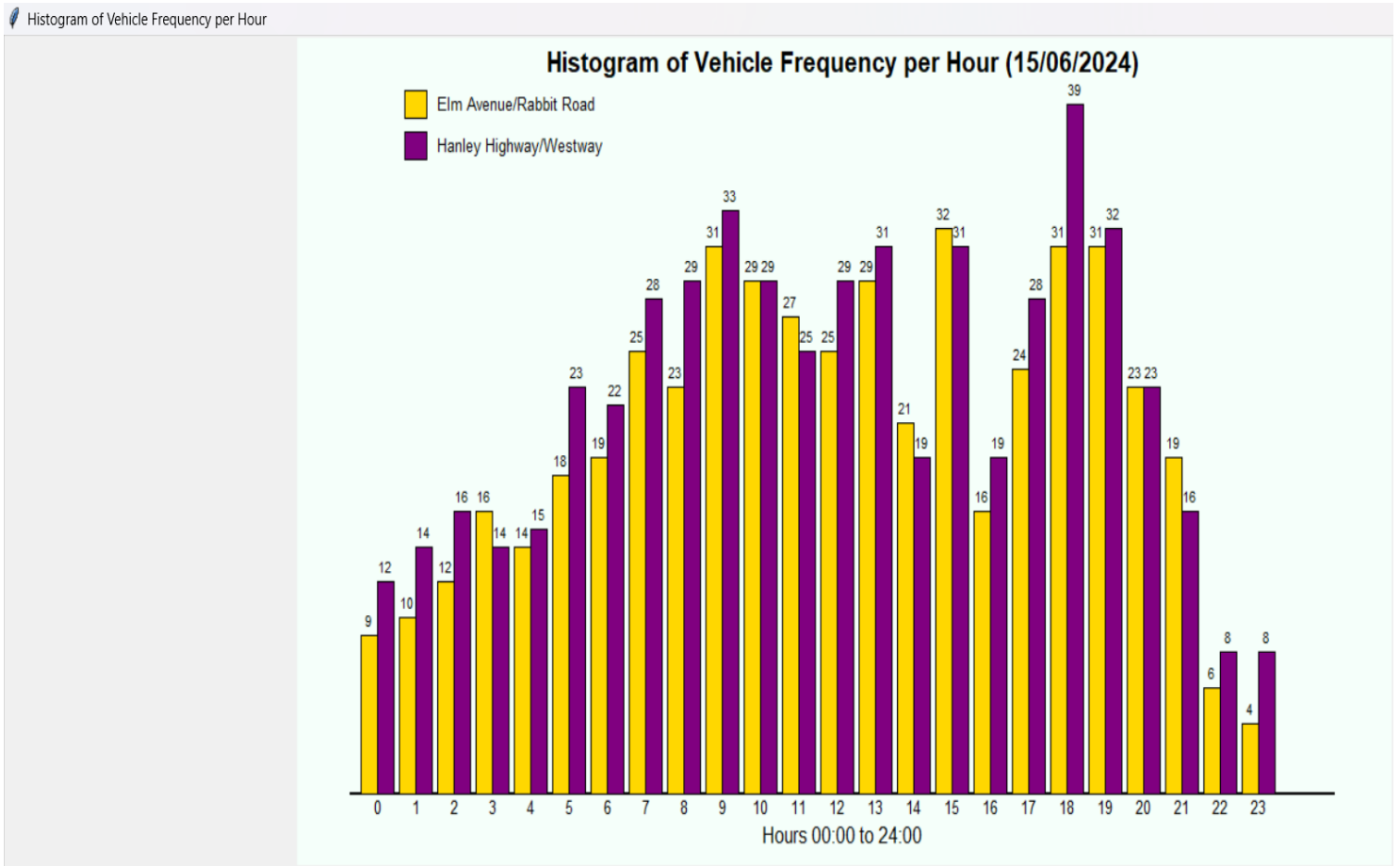
```
IDLE Shell 3.12.6
File Edit Shell Debug Options Window Help
Python 3.12.6 (tags/v3.12.6:a4a2d2b, Sep  6 2024, 20:11:23) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\IIT\Coursework\Coursework.py
Please enter the day of the survey in the format dd: 15
15
Please enter the month of the survey in the format MM: 6
6
Please enter the year of the survey in the format YYYY: 2024
2024

*****
The name of the selected CSV file is traffic_data15062024.csv
*****

The total number of vehicles passing through all junctions for the selected date is 1037
The total number of trucks passing through all junctions for the selected date is 109
The total number of electric vehicles passing through all junctions for the selected date is 368
The number of "two wheeled" vehicles through all junctions for the date (Bicycle, Motorcycle, Scooter) is 401
The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 15
The total number of vehicles passing through both junctions without turning left or right is 363
The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 11%
The average number Bicycles per hour for the selected date (rounded to an integer) is 7
The total number of vehicles recorded as over the speed limit for the selected date is 205
The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 494
The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 543
The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 10%
The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 39
The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 18:00 and 19:00']
The total number of hours of rain on the selected date is 0
Enter 'Y' to load a new dataset or 'N' to quit: n
End of run
>>> |
```

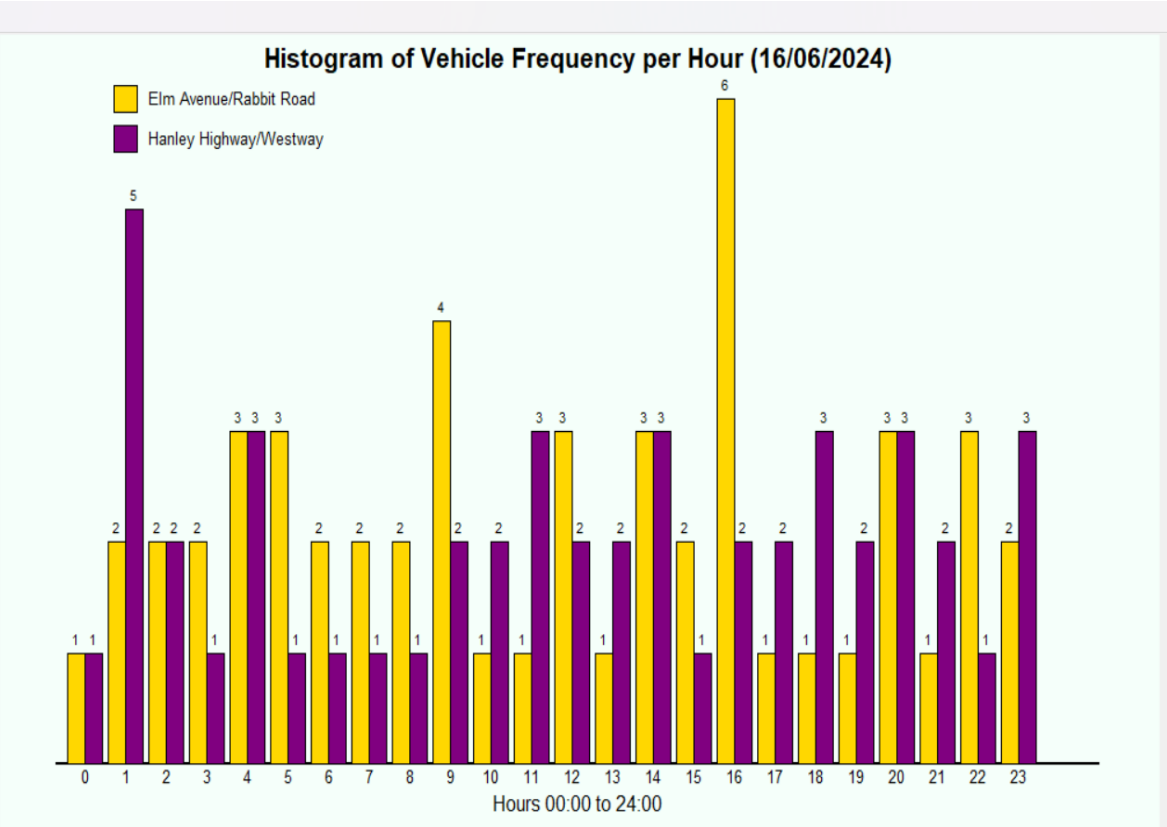
5.Histogram

5.1 Histogram of traffic_data15062024.csv



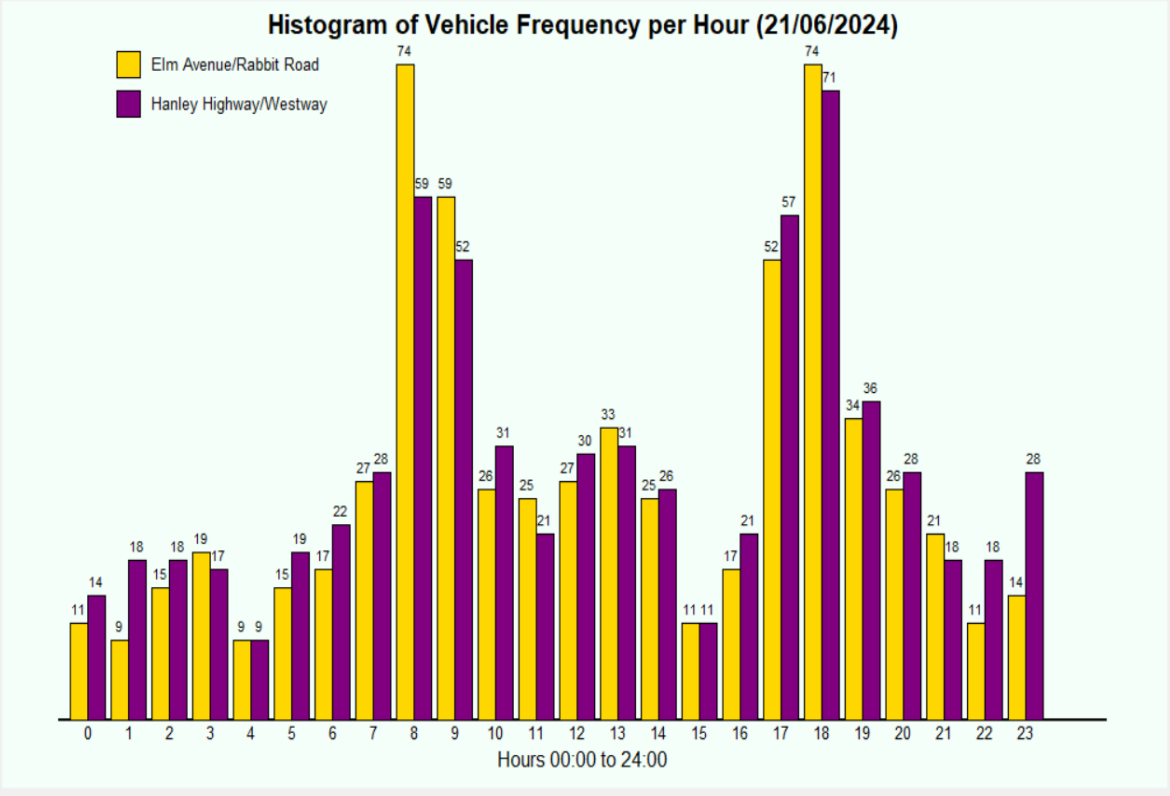
5.2 Histogram of traffic_data16062024.csv

Histogram of Vehicle Frequency per Hour



5.3 Histogram of traffic_data21062024.csv

Histogram of Vehicle Frequency per Hour



5. Save Results (results.txt)

```
results.txt
File Edit View

=====
The name of the selected CSV file is traffic_data15062024.csv
=====
The total number of vehicles passing through all junctions for the selected date is 1037
The total number of trucks passing through all junctions for the selected date is 109
The total number of electric vehicles passing through all junctions for the selected date is 368
The number of two wheeled vehicles through all junctions for the date (Bicycle, Motorcycle, Scooter) is 401
The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 15
The total number of vehicles passing through both junctions without turning left or right is 363
The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 11%
The average number Bicycles per hour for the selected date (rounded to an integer) is 7
The total number of vehicles recorded as over the speed limit for the selected date is 205
The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 494
The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 543
The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 10%
The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 39
The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 18:00 and 19:00']
The total number of hours of rain on the selected date is 0

=====

=====
The name of the selected CSV file is traffic_data16062024.csv
=====
The total number of vehicles passing through all junctions for the selected date is 101
The total number of trucks passing through all junctions for the selected date is 11
The total number of electric vehicles passing through all junctions for the selected date is 29
The number of two wheeled vehicles through all junctions for the date (Bicycle, Motorcycle, Scooter) is 29
The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 0
The total number of vehicles passing through both junctions without turning left or right is 38
The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 11%
The average number Bicycles per hour for the selected date (rounded to an integer) is 0
The total number of vehicles recorded as over the speed limit for the selected date is 20
The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 52
The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 49
The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 5%
The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 5
The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 1:00 and 2:00']
The total number of hours of rain on the selected date is 3

=====

=====
The name of the selected CSV file is traffic_data21062024.csv
=====
The total number of vehicles passing through all junctions for the selected date is 1334
The total number of trucks passing through all junctions for the selected date is 138
The total number of electric vehicles passing through all junctions for the selected date is 442
The number of two wheeled vehicles through all junctions for the date (Bicycle, Motorcycle, Scooter) is 503
The total number of busses leaving Elm Avenue/Rabbit Road junction heading north is 19
The total number of vehicles passing through both junctions without turning left or right is 494
The percentage of all vehicles recorded that are Trucks for the selected date (rounded to an integer) is 10%
The average number Bicycles per hour for the selected date (rounded to an integer) is 10
The total number of vehicles recorded as over the speed limit for the selected date is 250
The total number of vehicles recorded through only Elm Avenue/Rabbit Road junction for the selected date is 651
The total number of vehicles recorded through only Hanley Highway/Westway junction for the selected date is 683
The percentage of vehicles through Elm Avenue/Rabbit Road that are Scooters (rounded to integer) is 9%
The number of vehicles recorded in the peak (busiest) hour on Hanley Highway/Westway is 71
The time or times of the peak (busiest) traffic hour (or hours) on Hanley Highway/Westway is ['Between 18:00 and 19:00']
The total number of hours of rain on the selected date is 6

=====
```

