

INTEGRATION REPORTS (IT)

1. Integration of menu() in main().

```
ezaz@PC: ~/Desktop/IOT Data Processor/CUT/compile

*****
* Welcome to Data Logger Processing System
*****
* 1. Displays the Dataset.
* 2. Displays the monthly average Temperature
* 3. Displays the monthly average Humidity
* 4. Displays the monthly average PM 2.5
* 5. Displays the monthly average PM 10
* 6. Displays the monthly average NO2
* 7. Exit the system.
*****
Enter a valid choice [1-7]: |
```

2. Integration of loadFromFile() in menu().

```
ezaz@PC: ~/Desktop/IOT Data Logger/CUT/compile

*****
* Welcome to Data Logger Processing System
*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
Enter a valid choice [1-7]: 1

-----
| Delhi | 11 | 01-01-2021 | 19 | 43 | 184.76 | 337.93 | 53.64 |
| Delhi | 11 | 02-01-2021 | 21 | 47 | 177.86 | 334.63 | 53.12 |
| Delhi | 11 | 03-01-2021 | 20 | 48 | 176.12 | 345.99 | 54.92 |
| Delhi | 11 | 04-01-2021 | 15 | 42 | 182.10 | 335.43 | 53.24 |
| Delhi | 11 | 05-01-2021 | 24 | 46 | 176.54 | 351.02 | 55.72 |
| Delhi | 11 | 06-01-2021 | 21 | 46 | 184.75 | 351.39 | 55.78 |
| Delhi | 11 | 07-01-2021 | 16 | 43 | 184.94 | 335.62 | 53.27 |
| Delhi | 11 | 08-01-2021 | 25 | 50 | 176.64 | 348.06 | 55.25 |
| Delhi | 11 | 09-01-2021 | 16 | 46 | 183.19 | 351.44 | 55.78 |
| Delhi | 11 | 10-01-2021 | 23 | 44 | 184.97 | 346.64 | 55.02 |
| Delhi | 11 | 11-01-2021 | 18 | 41 | 182.44 | 346.20 | 54.95 |
| Delhi | 11 | 12-01-2021 | 23 | 42 | 182.21 | 336.76 | 53.45 |
| Delhi | 11 | 13-01-2021 | 19 | 46 | 177.24 | 336.22 | 53.37 |
| Delhi | 11 | 14-01-2021 | 24 | 43 | 176.96 | 345.82 | 54.89 |
| Delhi | 11 | 15-01-2021 | 15 | 49 | 182.01 | 342.02 | 54.29 |
| Delhi | 11 | 16-01-2021 | 21 | 49 | 180.01 | 344.81 | 54.73 |
| Delhi | 11 | 17-01-2021 | 22 | 49 | 181.48 | 344.47 | 54.68 |
| Delhi | 11 | 18-01-2021 | 15 | 42 | 181.30 | 342.68 | 54.39 |
| Delhi | 11 | 19-01-2021 | 18 | 42 | 180.36 | 338.68 | 53.76 |
| Delhi | 11 | 20-01-2021 | 21 | 42 | 178.25 | 335.71 | 53.29 |
| Delhi | 11 | 21-01-2021 | 23 | 48 | 176.69 | 338.45 | 53.72 |
| Delhi | 11 | 22-01-2021 | 18 | 42 | 178.13 | 344.17 | 54.63 |
| Delhi | 11 | 23-01-2021 | 18 | 42 | 176.64 | 335.64 | 53.28 |
```

3. Integration of printLinkedList() in menu().

```
ezaz@PC: ~/Desktop/IOT Data Logger/CUT/compile

*****
* Welcome to Data Logger Processing System
*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
Enter a valid choice [1-7]: 1

-----
| Delhi | 11 | 01-01-2021 | 19 | 43 | 184.76 | 337.93 | 53.64 |
| Delhi | 11 | 02-01-2021 | 21 | 47 | 177.86 | 334.63 | 53.12 |
| Delhi | 11 | 03-01-2021 | 20 | 48 | 176.12 | 345.99 | 54.92 |
| Delhi | 11 | 04-01-2021 | 15 | 42 | 182.10 | 335.43 | 53.24 |
| Delhi | 11 | 05-01-2021 | 24 | 46 | 176.54 | 351.02 | 55.72 |
| Delhi | 11 | 06-01-2021 | 21 | 46 | 184.75 | 351.39 | 55.78 |
| Delhi | 11 | 07-01-2021 | 16 | 43 | 184.94 | 335.62 | 53.27 |
| Delhi | 11 | 08-01-2021 | 25 | 50 | 176.64 | 348.06 | 55.25 |
| Delhi | 11 | 09-01-2021 | 16 | 46 | 183.19 | 351.44 | 55.78 |
| Delhi | 11 | 10-01-2021 | 23 | 44 | 184.97 | 346.64 | 55.02 |
| Delhi | 11 | 11-01-2021 | 18 | 41 | 182.44 | 346.20 | 54.95 |
| Delhi | 11 | 12-01-2021 | 23 | 42 | 182.21 | 336.76 | 53.45 |
| Delhi | 11 | 13-01-2021 | 19 | 46 | 177.24 | 336.22 | 53.37 |
| Delhi | 11 | 14-01-2021 | 24 | 43 | 176.96 | 345.82 | 54.89 |
| Delhi | 11 | 15-01-2021 | 15 | 49 | 182.01 | 342.02 | 54.29 |
| Delhi | 11 | 16-01-2021 | 21 | 49 | 180.01 | 344.81 | 54.73 |
| Delhi | 11 | 17-01-2021 | 22 | 49 | 181.48 | 344.47 | 54.68 |
| Delhi | 11 | 18-01-2021 | 15 | 42 | 181.30 | 342.68 | 54.39 |
| Delhi | 11 | 19-01-2021 | 18 | 42 | 180.36 | 338.68 | 53.76 |
| Delhi | 11 | 20-01-2021 | 21 | 42 | 178.25 | 335.71 | 53.29 |
| Delhi | 11 | 21-01-2021 | 23 | 48 | 176.69 | 338.45 | 53.72 |
| Delhi | 11 | 22-01-2021 | 18 | 42 | 178.13 | 344.17 | 54.63 |
| Delhi | 11 | 23-01-2021 | 20 | 40 | 164.44 | 335.68 | 53.36 |
```

4. Integration of avgTemperature() in menu().

```
ezaz@PC: ~/Desktop/IOT Data Logger/CUT/compile

*****
* Welcome to Data Logger Processing System
*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
Enter a valid choice [1-7]: 2

Month-wise comparson of Temperature
Month 1 -> 20.06
Month 2 -> 25.71
Month 3 -> 28.55
Month 4 -> 33.73
Month 5 -> 37.16
Month 6 -> 37.87
Month 7 -> 32.39
Month 8 -> 28.10
Month 9 -> 27.07
Month 10 -> 21.65
Month 11 -> 18.17
Month 12 -> 8.74

*****
* Welcome to Data Logger Processing System
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1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
```

5. Integration of avgHumidity () in menu().

```
ezaz@PC: ~/Desktop/IOT Data Logger/CUT/compile

*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
Enter a valid choice [1-7]: 3

Month-wise comparson of Humidity
Month 1 -> 45.52
Month 2 -> 45.04
Month 3 -> 44.87
Month 4 -> 20.03
Month 5 -> 14.26
Month 6 -> 24.73
Month 7 -> 50.10
Month 8 -> 69.29
Month 9 -> 85.57
Month 10 -> 51.03
Month 11 -> 35.27
Month 12 -> 25.13

*****
* Welcome to Data Logger Processing System
*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
Enter a valid choice [1-7]: |
```

6. Integration of avgPM25() in menu().

```
ezaz@PC: ~/Desktop/IOT Data Logger/CUT/compile

*****
* Welcome to Data Logger Processing System
*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
Enter a valid choice [1-7]: 4

Month-wise comparson of PM 2.5
Month 1 -> 180.25
Month 2 -> 138.58
Month 3 -> 77.66
Month 4 -> 70.13
Month 5 -> 45.33
Month 6 -> 44.31
Month 7 -> 30.26
Month 8 -> 31.00
Month 9 -> 30.20
Month 10 -> 68.55
Month 11 -> 216.17
Month 12 -> 179.68

*****
* Welcome to Data Logger Processing System
*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
```

7. Integration of avgPM10() in menu().

```
ezaz@PC: ~/Desktop/IOT Data Logger/CUT/compile
*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
Enter a valid choice [1-7]: 5

Month-wise comparson of PM 10
Month 1 -> 339.50
Month 2 -> 259.46
Month 3 -> 146.84
Month 4 -> 131.67
Month 5 -> 86.24
Month 6 -> 83.09
Month 7 -> 57.87
Month 8 -> 58.50
Month 9 -> 60.31
Month 10 -> 138.43
Month 11 -> 408.97
Month 12 -> 341.35

*****
* Welcome to Data Logger Processing System
*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
Enter a valid choice [1-7]: |
```

8. Integration of avgNO2() in menu().

```
ezaz@PC: ~/Desktop/IOT Data Logger/CUT/compile
*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
Enter a valid choice [1-7]: 6

Month-wise comparson of NO2
Month 1 -> 53.89
Month 2 -> 41.18
Month 3 -> 23.31
Month 4 -> 20.90
Month 5 -> 13.69
Month 6 -> 13.19
Month 7 -> 9.19
Month 8 -> 9.29
Month 9 -> 9.57
Month 10 -> 21.97
Month 11 -> 64.92
Month 12 -> 54.18

*****
* Welcome to Data Logger Processing System
*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
Enter a valid choice [1-7]: |
```

9. Integration of appendLinkedList() in loadFromFile().

```
ezaz@PC: ~/Desktop/IOT Data Logger/CUT/compile

*****
* Welcome to Data Logger Processing System
*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
Enter a valid choice [1-7]: 1

| Delhi | 11 | 01-01-2021 | 19 | 43 | 184.76 | 337.93 | 53.64 |
| Delhi | 11 | 02-01-2021 | 21 | 47 | 177.86 | 334.63 | 53.12 |
| Delhi | 11 | 03-01-2021 | 20 | 48 | 176.12 | 345.99 | 54.92 |
| Delhi | 11 | 04-01-2021 | 15 | 42 | 182.10 | 335.43 | 53.24 |
| Delhi | 11 | 05-01-2021 | 24 | 46 | 176.54 | 351.02 | 55.72 |
| Delhi | 11 | 06-01-2021 | 21 | 46 | 184.75 | 351.39 | 55.78 |
| Delhi | 11 | 07-01-2021 | 16 | 43 | 184.94 | 335.62 | 53.27 |
| Delhi | 11 | 08-01-2021 | 25 | 50 | 176.64 | 348.06 | 55.25 |
| Delhi | 11 | 09-01-2021 | 16 | 46 | 183.19 | 351.44 | 55.78 |
| Delhi | 11 | 10-01-2021 | 23 | 44 | 184.97 | 346.64 | 55.02 |
| Delhi | 11 | 11-01-2021 | 18 | 41 | 182.44 | 346.20 | 54.95 |
| Delhi | 11 | 12-01-2021 | 23 | 42 | 182.21 | 336.76 | 53.45 |
| Delhi | 11 | 13-01-2021 | 19 | 46 | 177.24 | 336.22 | 53.37 |
| Delhi | 11 | 14-01-2021 | 24 | 43 | 176.96 | 345.82 | 54.89 |
| Delhi | 11 | 15-01-2021 | 15 | 49 | 182.01 | 342.02 | 54.29 |
| Delhi | 11 | 16-01-2021 | 21 | 49 | 180.01 | 344.81 | 54.73 |
| Delhi | 11 | 17-01-2021 | 22 | 49 | 181.48 | 344.47 | 54.68 |
| Delhi | 11 | 18-01-2021 | 15 | 42 | 181.30 | 342.68 | 54.39 |
| Delhi | 11 | 19-01-2021 | 18 | 42 | 180.36 | 338.68 | 53.76 |
| Delhi | 11 | 20-01-2021 | 21 | 42 | 178.25 | 335.71 | 53.29 |
| Delhi | 11 | 21-01-2021 | 23 | 48 | 176.69 | 338.45 | 53.72 |
| Delhi | 11 | 22-01-2021 | 18 | 42 | 178.13 | 344.17 | 54.63 |
| Delhi | 11 | 23-01-2021 | 16 | 46 | 184.76 | 337.93 | 53.64 |
```

10. Integration of display_iotdata() in printLinkedList().

```
ezaz@PC: ~/Desktop/IOT Data Logger/CUT/compile

*****
* Welcome to Data Logger Processing System
*****
1. Displays the Dataset.
2. Displays the monthly average Temperature.
3. Displays the monthly average Humidity
4. Displays the monthly average PM 2.5
5. Displays the monthly average PM 10
6. Displays the monthly average NO2
7. Exit the system.
*****
Enter a valid choice [1-7]: 1

| Delhi | 11 | 01-01-2021 | 19 | 43 | 184.76 | 337.93 | 53.64 |
| Delhi | 11 | 02-01-2021 | 21 | 47 | 177.86 | 334.63 | 53.12 |
| Delhi | 11 | 03-01-2021 | 20 | 48 | 176.12 | 345.99 | 54.92 |
| Delhi | 11 | 04-01-2021 | 15 | 42 | 182.10 | 335.43 | 53.24 |
| Delhi | 11 | 05-01-2021 | 24 | 46 | 176.54 | 351.02 | 55.72 |
| Delhi | 11 | 06-01-2021 | 21 | 46 | 184.75 | 351.39 | 55.78 |
| Delhi | 11 | 07-01-2021 | 16 | 43 | 184.94 | 335.62 | 53.27 |
| Delhi | 11 | 08-01-2021 | 25 | 50 | 176.64 | 348.06 | 55.25 |
| Delhi | 11 | 09-01-2021 | 16 | 46 | 183.19 | 351.44 | 55.78 |
| Delhi | 11 | 10-01-2021 | 23 | 44 | 184.97 | 346.64 | 55.02 |
| Delhi | 11 | 11-01-2021 | 18 | 41 | 182.44 | 346.20 | 54.95 |
| Delhi | 11 | 12-01-2021 | 23 | 42 | 182.21 | 336.76 | 53.45 |
| Delhi | 11 | 13-01-2021 | 19 | 46 | 177.24 | 336.22 | 53.37 |
| Delhi | 11 | 14-01-2021 | 24 | 43 | 176.96 | 345.82 | 54.89 |
| Delhi | 11 | 15-01-2021 | 15 | 49 | 182.01 | 342.02 | 54.29 |
| Delhi | 11 | 16-01-2021 | 21 | 49 | 180.01 | 344.81 | 54.73 |
| Delhi | 11 | 17-01-2021 | 22 | 49 | 181.48 | 344.47 | 54.68 |
| Delhi | 11 | 18-01-2021 | 15 | 42 | 181.30 | 342.68 | 54.39 |
| Delhi | 11 | 19-01-2021 | 18 | 42 | 180.36 | 338.68 | 53.76 |
| Delhi | 11 | 20-01-2021 | 21 | 42 | 178.25 | 335.71 | 53.29 |
| Delhi | 11 | 21-01-2021 | 23 | 48 | 176.69 | 338.45 | 53.72 |
| Delhi | 11 | 22-01-2021 | 18 | 42 | 178.13 | 344.17 | 54.63 |
| Delhi | 11 | 23-01-2021 | 16 | 46 | 184.76 | 337.93 | 53.64 |
```