Statistics Software Lab Report - 6 (Outputs file)

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Statistics Software Lab

Output for Exercise-A

We are given 80 measurements of the iron solution index of tin-plate samples, designated to measure the corrosion resistance of tin-plated steel:

0.72	0.92	0.92	1.43	0.83	0.48	0.65	0.78
0.48	0.96	0.72	0.48	0.83	0.49	0.78	0.96
0.88	1.03	0.78	1.12	0.83	0.78	0.83	1.06
1.23	0.18	0.96	1.18	0.48	0.55	0.97	1.21
0.94	0.38	0.73	0.65	1.36	0.47	0.72	0.77
0.79	1.26	1.06	0.90	0.77	0.35	0.78	0.77
0.88	1.20	0.71	0.95	0.91	0.64	0.73	1.09
0.83	0.78	1.04	1.33	0.47	0.16	0.57	0.65
0.64	0.65	1.43	0.63	0.79	1.00	0.92	0.45
0.48	0.79	0.97	0.57	0.95	1.12	0.70	1.05

We needed to group these measurements into class intervals of length 0.20 and obtain the frequency distribution. Find arithmetic mean, median and other quartiles, mode, standard deviation, interquartile range, trimmed sample mean and Winsorized sample mean.

```
> #################################################################
# Exercise A
The Frequency Distribution is as follows:
3 11 16 30 11 7
The Mean is as follows:
0.816
The Median is as follows:
0.79
The Quartiles are as follows:
0.65 0.79 0.9625
The Mode is as follows:
0.78
The Standard Deviation is as follows:
0.2678541
The Interquartile Range: is as follows:
0.3125
The Trimmed Mean with 5% trimming is :
0.8147222
The Winsorized Mean with 5% Winsorizing:
0.81875
> ############################################################s###########
```

Output for Exercise-B

Now we are given that a scientist obtained the following daily field estimates of radioactive fallout (in micro-microcuries per cubic meter of air) in Phoenix during the months of May through August,

1964:

9.3	6.8	9.8	6.6	4.3	6.7	6.4	10.1	8.9	3.7
5.3	6.5	7.4	8.3	4.6	7.9	6.5	5.1	7.2	8.7
7.9	6.3	2.7	5.3	8.8	7.3	9.0	7.7	8.4	7.8
5.8	6.4	6.2	5.8	6.5	6.0	7.7	5.0	4.4	4.7
5.4	2.9	4.0	4.1	4.1	5.5	3.1	3.5	5.4	4.1
4.7	6.2	3.2	2.7	4.8	2.6	3.4	6.2	5.1	4.0
5.0	3.3	2.4	4.6	2.8	1.7	0.9	7.2	9.9	4.0
2.0	2.0	1.0	3.2	5.6	3.4	5.7	7.0	4.3	3.4
3.0	4.4	2.0	5.8	1.5	5.1	5.0	8.8	4.0	6.1
5.6	5.4	8.3	8.8	10.0	4.8	3.6	2.5	5.3	2.2
4.1	5.0								

We are required to group these data into a frequency distribution with class intervals of length 1.0 and calculate the first four non-central and central moments, measures of skewness and kurtosis from this.

```
> ################################################################
# Exercise B
The Frequency Distribution is as follows:
2 5 9 14 18 17 14 9 9 4 1
The First Moment (Mean) is as follows:
3.918434e-16
 The Second Moment (Variance) is as follows:
4.813084
 The Third Moment (Skewness) is as follows:
0.2231165
The Fourth Moment (Kurtosis) is as follows:
-0.6090352
> ################################################################
```

Output for Exercise-3

Finally we need to prepare frequency histogram, frequency polygon, frequency curve and cumulative frequency curve (ogive) from the classified data obtained in Task-A and Task-B.
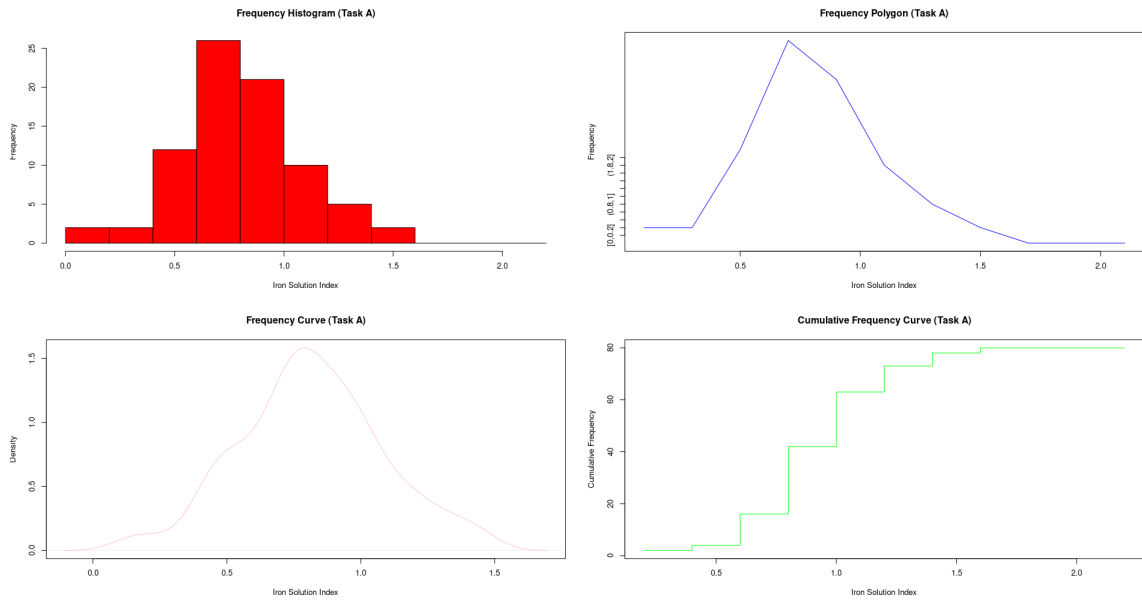
Task-A

Figure 1: The above are the plots for frequency histogram, frequency polygon, frequency curve and cumulative frequency curve (ogive) from the classified data obtained in Task-A
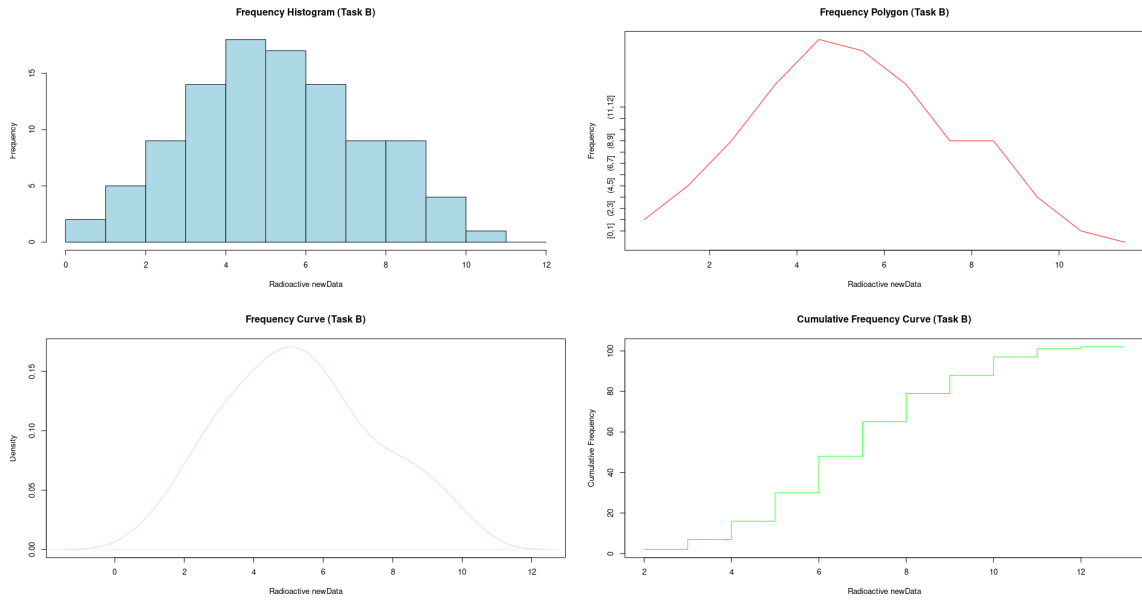
Task-B

Figure 2: The above are the plots for frequency histogram, frequency polygon, frequency curve and cumulative frequency curve (ogive) from the classified data obtained in Task-B