

# VE401 Assignment 4

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## Exercise 1. Data Visualization

### Solution.

- i) We use mathematica to generate this stem and leaf diagram using these data. Our code for mathematica is

```
Needs[StatisticalPlots]
```

```
StemLeafPlot(Floor[Data, 1], IncludeEmptyStems → True, StemExponent → 1)
```

Stem	Leaves
532	9
533	
534	2
535	47
536	6
537	5678
538	12345778888
539	016999
540	11166677889
541	123666688
542	0011222357899
543	01111556
544	00012455678
545	233447899
546	23569
547	357
548	11257

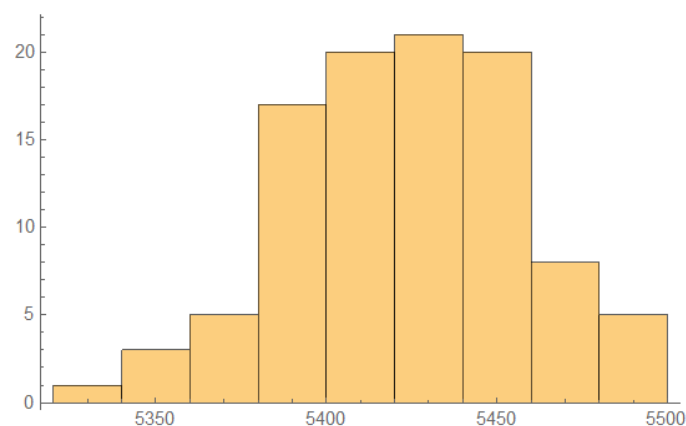
Stem units: 10

We comment that the diagram looks multimodal, but not symmetric.

- ii) We use

```
Histogram[Data]
```

to generate the histogram.

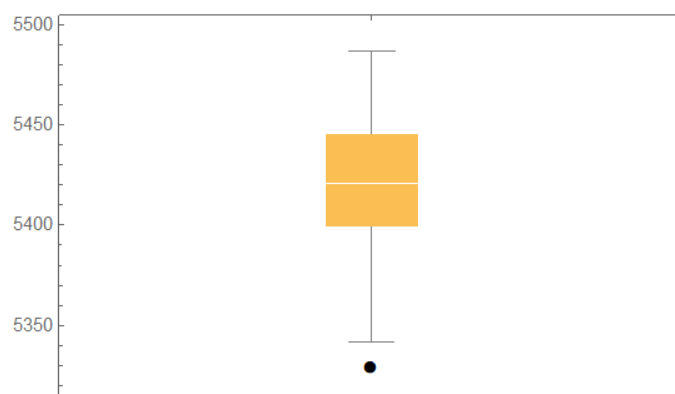


The histogram looks different from the stem-and-leaf diagram. But still it looks not symmetric.

iii) We use

```
BoxWhiskerChart[Data,{{"Outliers"}}]
```

to generate the boxplot.



We can see that the median line is symmetric and is in the middle of the box. The whiskers don't appear to be equally long. There is only one outlier. There is strong evidence that the data follow a normal distribution, while it doesn't appear to be so in the original stem-and-leaf diagram.

□