# P06 Instructor & Reference Guide – Simple Charts

## Theory Brief

Bar charts are useful for comparing discrete categories, line charts illustrate trends over an ordered axis, and histograms display the distribution of continuous variables.

## Worked Example

Below is a snapshot of the first few rows of the synthetic dataset and summary statistics:

Category Value1 Value2  
Category B 33.06 -5.31  
Category A 39.93 9.05  
Category C 48.19 -3.72  
Category B 61.62 -0.44  
Category B 35.60 1.06

### Basic Statistics

* Value1\_mean: 50.64
* Value1\_median: 50.08
* Value1\_mode: 49.30
* Value1\_var: 107.13
* Value1\_std: 10.35
* Value2\_mean: 37.14
* Value2\_median: 37.40
* Value2\_mode: 7.75
* Value2\_var: 517.85
* Value2\_std: 22.76

### Correlation Matrix

Value1 Value2  
Value1 1.000000 -0.006886  
Value2 -0.006886 1.000000

### Visualisations

An example plot is saved in the results folder as P06\_plot1.png.

## Evaluation Rubric

* Clarity and correctness of charts (60%)- Appropriateness of chart selection (20%)- Quality of interpretation (20%)

## Common Pitfalls

Using too many categories on a bar chart, omitting axis labels, or choosing an inappropriate bin width for histograms.