# P01 Sample Solution Report – Descriptive Statistics and Visualisation

## Overview

This report summarises the methodology and key findings for the practical. All computations are based on the provided synthetic dataset.

### Dataset Snapshot

Student\_ID Mathematics Physics Chemistry Computer Age  
 1 55.1 61.2 47.9 80.2 18  
 2 61.3 53.3 60.9 54.1 19  
 3 77.9 47.6 62.8 70.2 20  
 4 66.9 65.7 66.7 65.5 21  
 5 74.2 49.8 62.7 81.0 18

### Summary Statistics

* Student\_ID\_mean: 75.50
* Student\_ID\_median: 75.50
* Student\_ID\_mode: 1.00
* Student\_ID\_var: 1887.50
* Student\_ID\_std: 43.45
* Mathematics\_mean: 66.26
* Mathematics\_median: 65.45
* Mathematics\_mode: 58.60
* Mathematics\_var: 85.24
* Mathematics\_std: 9.23
* Physics\_mean: 59.44
* Physics\_median: 61.00
* Physics\_mode: 61.80
* Physics\_var: 146.50
* Physics\_std: 12.10
* Chemistry\_mean: 61.53
* Chemistry\_median: 62.10
* Chemistry\_mode: 58.60
* Chemistry\_var: 130.96
* Chemistry\_std: 11.44

### Correlation Matrix

Student\_ID Mathematics Physics Chemistry  
Student\_ID 1.000000 0.056925 -0.071927 -0.079921  
Mathematics 0.056925 1.000000 -0.112505 0.053850  
Physics -0.071927 -0.112505 1.000000 -0.034815  
Chemistry -0.079921 0.053850 -0.034815 1.000000

### Interpretation

The Mathematics scores show a roughly normal distribution with a mean around 65. There is moderate variability across subjects. Correlations indicate how performance in one subject relates to others.

### Validation Tips

Recompute statistics using built‑in Excel functions or Python’s pandas library to verify your results. Ensure the histogram bins are appropriately sized.