# Task 2: Custom Moving Average Function for NumPy Arrays

Objective:

The objective of this task was to implement a custom function in Python to calculate the moving average of a NumPy array without using built-in shortcuts like np.convolve or pandas' rolling methods.

Dataset:

A simple NumPy array was used for demonstration: [10, 20, 30, 40, 50, 60]. The function was tested using a window size of 3.

Implementation:

The function `custom\_moving\_average(arr, window\_size)` was defined to iterate through the array and compute the average for each sliding window of the specified size. It includes checks to ensure the window size is valid and less than or equal to the array length.

Example Output:

Original Array: [10, 20, 30, 40, 50, 60]  
Moving Average (window=3): [20.0, 30.0, 40.0, 50.0]

Tools Used:

- Python (NumPy)

- Google Colab for writing and running the code

Files Included:

- Task2\_MovingAverage.ipynb: The full code, including the custom function

- task2\_output.txt: Output showing the original array and the moving averages

- Task2\_Report.docx: This report file

Summary:

This task demonstrates how to implement a fundamental data processing function from scratch. Understanding and building these types of functions without relying on built-in tools is essential for developing deeper coding and problem-solving skills.