

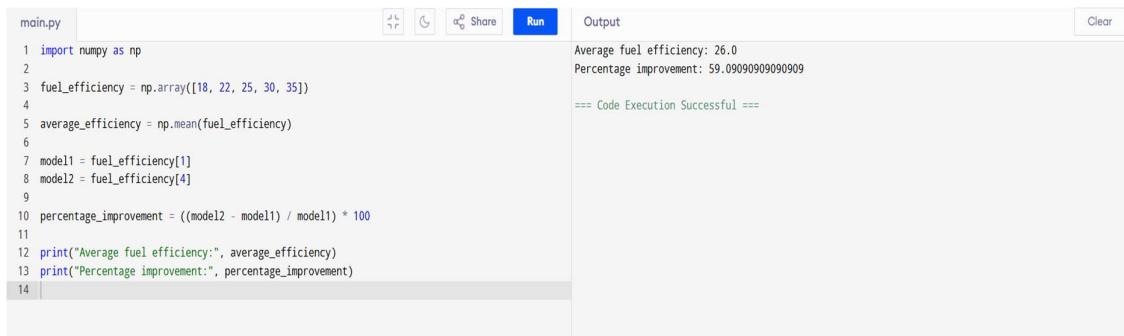
Scenario: You are a data analyst working for a car manufacturing company. As part of your analysis, you have a dataset containing information about the fuel efficiency of different car models. The dataset is stored in a NumPy array named fuel_efficiency, where each element represents the fuel efficiency (in miles per gallon) of a specific car model. Your task is to calculate the average fuel efficiency and determine the percentage improvement in fuel efficiency between two car models.

Question: How would you use NumPy arrays and arithmetic operations to calculate the average fuel efficiency and determine the percentage improvement in fuel efficiency between two car models?

AIM: To calculate average fuel efficiency and measure the percentage improvement between two car models using NumPy.

PROCEDURE:

1. Create a NumPy array containing mpg values of car models.
2. Compute average mileage using np.mean().
3. Select two models for comparison using indexing.
4. Apply the percentage improvement formula.



The screenshot shows a Jupyter Notebook interface with a code cell titled "main.py". The code defines a NumPy array "fuel_efficiency" with values [18, 22, 25, 30, 35], calculates its mean as "average_efficiency", and then prints the average and a percentage improvement calculation. The output pane shows the results: "Average fuel efficiency: 26.0", "Percentage improvement: 59.09090909090909", and "==== Code Execution Successful ===".

```
main.py
1 import numpy as np
2
3 fuel_efficiency = np.array([18, 22, 25, 30, 35])
4
5 average_efficiency = np.mean(fuel_efficiency)
6
7 model1 = fuel_efficiency[1]
8 model2 = fuel_efficiency[4]
9
10 percentage_improvement = ((model2 - model1) / model1) * 100
11
12 print("Average fuel efficiency:", average_efficiency)
13 print("Percentage improvement:", percentage_improvement)
14
```

Average fuel efficiency: 26.0
Percentage improvement: 59.09090909090909
==== Code Execution Successful ===