

## Question 1: Web Data Extraction and CSV Handling

As part of the assessment task, you are required to develop a Python script that performs web data extraction from a specific URL. The target URL for this task is: <https://www.audible.co.uk/adblbestsellers>.

Your objective is to extract the selected fields about each book listed on this webpage (Total 100 books). To achieve this, you are limited to using Scrapy, Selenium, or BeautifulSoup as the web scraping tools.

Here are the specific steps to follow:

1. Using the Python programming language, create a script that scrapes the aforementioned URL.
2. Extract the following fields for each book listed on the webpage:
  - Book name
  - Author
  - Price
  - Language
  - Release date
3. Store the collected information in a CSV (Comma-Separated Values) file. Each row in the CSV file should represent a single book, and the columns should correspond to the extracted details (book name, author, price, language, and release date).

Remember that a clean and efficient code structure is essential for this task. Your ability to deliver high-quality code will be a significant factor in the evaluation process.

## Question 2: Data Manipulation, Analysis and Visualization

You have a dataset stored in [Google Drive](#) that contains information about sales transactions. Use it and submit a code file that includes the solutions and explanations for each question. Your documentation should be clear and easy to understand.

1. What is the average price per unit for all products combined?
2. Find the total revenue generated from these transactions.
3. Which customer made the highest quantity purchase?
4. On which date did the company make the highest revenue?
5. Calculate the total revenue for each product.
6. Create a bar plot showing the total sales quantity for each product.
7. Generate a line chart depicting the trend of revenue over time.
8. Plot a scatter plot to visualize the relationship between quantity sold and price per unit.

## Question 3: Basic python programming

You are given an array of prices where ***prices[i]*** represents the price of a stock on the *i*-th day. You want to maximize your profit by choosing a single day to buy the stock and a different day in the future to sell it. Write a Python function ***max\_profit(prices)*** that takes the list of stock prices as input and returns the maximum profit that can be obtained.

### Test Case 1:

```
Python
prices1 = [7, 1, 5, 3, 6, 4]
print(max_profit(prices1))
# Output: 5
```

### Test Case 2:

```
Python
prices2 = [7, 6, 4, 3, 1]
print(max_profit(prices2))
# Output: 0
```

### Explanation:

In Test Case 1, the optimal choice is to buy at day 2 (price = 1) and sell at day 5 (price = 6), resulting in a profit of 5.

In Test Case 2, it's not possible to make a profit by buying and selling within the given days. The prices are decreasing throughout, so the maximum profit is 0.

### Submitting Instructions:

1. Write your code in a google colab using a single file.
2. Share the colab file with “**anyone with the link can view**” access.