

Here's a **mock Python exam** for you to practice, focusing on the topics relevant to your exam:

Mock Python Exam

Question 1: Basic Data Manipulation

You are given a list of dictionaries representing movies:

```
movies = [  
    {"Title": "Interstellar", "Genre": "Science-fiction", "Year": 2014, "Revenue": 677.47, "Rating":  
8.6},  
    {"Title": "Pulp Fiction", "Genre": "Drama", "Year": 1994, "Revenue": 213.93, "Rating": 8.9},  
    {"Title": "The Dark Knight", "Genre": "Action", "Year": 2008, "Revenue": 1004.94, "Rating": 9.0}  
]
```

1. Write a **lambda function** to filter out movies with a rating below 8.8.
 2. Use the **max()** function to find the movie with the highest revenue.
 3. Write a **function** to calculate the average rating of all movies in the list.
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Question 2: Enrich the Data

Write a function **categorize_revenue(movies)** that:

- Adds a new key **"Revenue Category"** to each movie in the list.
 - The category should be:
 - **"Low"** if revenue is less than \$500M.
 - **"Medium"** if revenue is between \$500M and \$800M.
 - **"High"** if revenue exceeds \$800M.
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Question 3: Save to CSV

Using the enriched **movies** list from **Question 2**, write Python code to save it to a CSV file with the columns:

- **Title, Genre, Year, Revenue, Rating, Revenue Category**
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Question 4: Sorting

Sort the `movies` list:

1. By **year** in ascending order.
2. By **rating** in descending order.

Write the sorted lists to verify your results.

Question 5: Bonus

Explain what this code snippet does and write its output:

```
data = [1, 2, 3, 4, 5, 6]
filtered_data = list(filter(lambda x: x % 2 == 0, data))
result = sum(filtered_data)
```

Hints

- Use `list()` to convert `filter` objects.
 - Remember that `max()` and `sorted()` can accept a `key` argument.
 - For the CSV question, consider using either `csv.writer` or `csv.DictWriter`.
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Expected Output

Once you complete the exam, compare your answers to verify logic, syntax, and expected results. Let me know if you'd like me to review your answers or provide step-by-step solutions!

