AI Lab test – 3

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E2:

Q1) Scenario: In the Finance sector, a company faces a challenge related to code refactoring.

Task: Use AI-assisted tools to solve a problem involving code refactoring in this context.

Deliverables: Submit the source code, explanation of AI assistance used, and sample output.

give the correct prompt for the scenario, task, deliverables.

PROMPT:

Write a Python program in the Finance sector that uses AI-assisted tools to refactor existing code for calculating loan interest and generating financial reports.

CODE: BEFORE REFACTORING

# Original code (not optimized)

def calculate\_interest(principal, rate, time):

interest = (principal \* rate \* time) / 100

return interest

def total\_amount(principal, rate, time):

interest = (principal \* rate \* time) / 100

amount = principal + interest

return amount

principal = 10000

rate = 5

time = 2

print("Interest:", calculate\_interest(principal, rate, time))

print("Total Amount:", total\_amount(principal, rate, time))

AFTER REFACTORING:

# Refactored version (clean and efficient)

def calculate\_financials(principal, rate, time):

"""Calculate interest and total amount."""

interest = (principal \* rate \* time) / 100

amount = principal + interest

return interest, amount

# Sample input

principal, rate, time = 10000, 5, 2

interest, total = calculate\_financials(principal, rate, time)

print(f"Interest: {interest}")

print(f"Total Amount: {total}")

OUTPUT:

A screenshot of a computer

AI-generated content may be incorrect.

EXPLANATION:

**AI Assistance Explanation**

* AI tool (like ChatGPT or GitHub Copilot) suggested **merging duplicate functions** into one (calculate\_financials),
* Improved **code readability** and **removed redundancy**,
* Added a **docstring** for clarity and **used f-strings** for clean output.

Q2) Scenario: In the Hospitality sector, a company faces a challenge related to web frontend development.

Task: Use AI-assisted tools to solve a problem involving web frontend development in this context.

Deliverables: Submit the source code, explanation of AI assistance used, and sample output.

PROMPT:

Write an HTML, CSS, and JavaScript web page for a Hospitality company that displays hotel room details and booking options. Use AI-assisted tools to design and improve the web frontend layout.

CODE:

<!DOCTYPE html>

<html>

<head>

  <title>Hotel Booking</title>

  <style>

    body {

      font-family: Arial;

      background-color: #eff0ec;

      text-align: center;

      padding: 20px;

    }

    .room {

      background: white;

      margin: 10px auto;

      padding: 20px;

      width: 300px;

      border-radius: 10px;

      box-shadow: 0 0 10px #ccc;

    }

    button {

      background-color: #007bff;

      color: white;

      border: none;

      padding: 10px;

      border-radius: 5px;

      cursor: pointer;

    }

    button:hover {

      background-color: #0056b3;

    }

  </style>

</head>

<body>

  <h1>Welcome to DreamStay Hotel</h1>

  <div class="room">

    <h2>Deluxe Room</h2>

    <p>Price: ₹3500 per night</p>

    <button onclick="bookRoom()">Book Now</button>

  </div>

  <script>

    function bookRoom() {

      alert("Room booked successfully! Thank you for choosing DreamStay.");

    }

  </script>

</body>

</html>

OUTPUT:

A screenshot of a hotel room

AI-generated content may be incorrect.

A screenshot of a hotel room

AI-generated content may be incorrect.

EXPLANATION:

**AI Assistance Explanation**

* AI tool (e.g., ChatGPT or GitHub Copilot) suggested **HTML structure**, **CSS styling**, and **interactive JavaScript**.
* It improved the **UI design**, color scheme, and **button hover effect**.
* Helped in **debugging** and simplifying code for beginners.