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| **SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE** | | | | | **DEPARTMENT OF COMPUTER SCIENCE ENGINEERING** | | | | |
| **ProgramName:**B. Tech | | | | **Assignment Type: Lab** | | | **AcademicYear:**2025-2026 | | |
| **CourseCoordinatorName** | | | | Venkataramana Veeramsetty | | | | | |
| 1. Dr. Mohammed Ali Shaik  2. Dr. T Sampath Kumar  3. Mr. S Naresh Kumar  4. Dr. V. Rajesh  5. Dr. Brij Kishore  6. Dr Pramoda Patro  7. Dr. Venkataramana  8. Dr. Ravi Chander  9. Dr. Jagjeeth Singh | | | |  | | | | | |
| **CourseTitle** | | | AI Assisted Coding |  | |  | | | |
| **Regulation** | | | R24 |  | |  | | | |
| **Date and Day**  **of Assignment** | | |  | **Time(s)** | |  | | | |
| **Duration** | | | 2 Hours | **Applicableto**  **Batches** | |  | | | |
| **AssignmentNumber:3.3**(Present assignment number)/**24**(Total number of assignments) | | | | | | | | | |
|  | | | | | | | | | |
|  | **Q.No.** | **Question** | | | | | | ***ExpectedTime***  ***to complete*** |  |
|  | 1 | Lab 3: Prompt Engineering – Improving Prompts and Context Management  **Lab Objectives:**   * To understand how prompt structure and wording influence AI-generated code. * To explore how context (like comments and function names) helps AI generate relevant output. * To evaluate the quality and accuracy of code based on prompt clarity. * To develop effective prompting strategies for AI-assisted programming.   **Lab Outcomes (LOs):**  After completing this lab, students will be able to:   * Generate Python code using Google Gemini in Google Colab. * Analyze the effectiveness of code explanations and suggestions by Gemini. * Set up and use Cursor AI for AI-powered coding assistance. * Evaluate and refactor code using Cursor AI features. * Compare AI tool behavior and code quality across different platforms.   **Task Description#1**   * Try 3 different prompts to generate a factorial function.   **Expected Output#1**   * Comparison of AI-generated code styles   **Task Description#2**   * Provide a clear example input-output prompt to generate a sorting function.   **Expected Output#2**   * Functional sorting code from AI   **Task Description#3**   * Start with the vague prompt “Generate python code to calculate power bill” and improve it step-by-step   **Expected Output#3**   * Enhanced AI output with clearer prompts   **Task Description#4**   * Write structured comments to help AI generate two linked functions (e.g., login\_user() and register\_user()).   **Expected Output#4**   * Consistent functions with shared logic   **Task Description#5**   * Analyzing Prompt Specificity: Improving Temperature Conversion Function with Clear Instructions   **Expected Output#5**   * Code quality difference analysis for various prompts   **Note: Report should be submitted a word document for all tasks in a single document with prompts, comments & code explanation, and output and if required, screenshots**  **Evaluation Criteria:**   |  |  | | --- | --- | | **Criteria** | **Max Marks** | | Factorial Function (Task#1) | 0.5 | | Sorting Function (Task#2) | 0.5 | | Vogue Vs. Specific Prompting (Task #3) | 0.5 | | Linked Functions (Task #4) | 0.5 | | Temperature Conversion Function (Task #5) | 0.5 | | **Total** | **2.5 Marks** | | | | | | | 03.08.2025 EOD |  |

Task1

**Task Description#1**

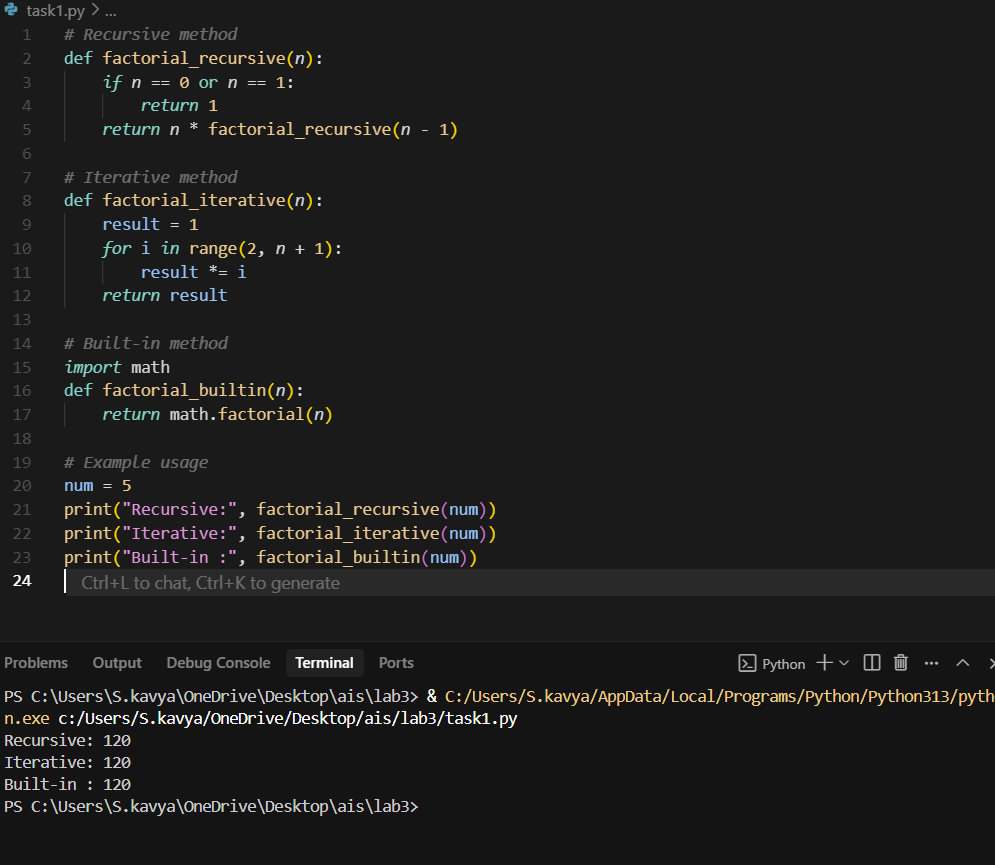
* Try 3 different prompts to generate a factorial function.

**Expected Output#1**

* Comparison of AI-generated code styles

Promt:

**Write a simple Python program that shows factorial in three ways: using recursion, using a loop, and using the math module. Use the number 5 and print all three results. No user input.**



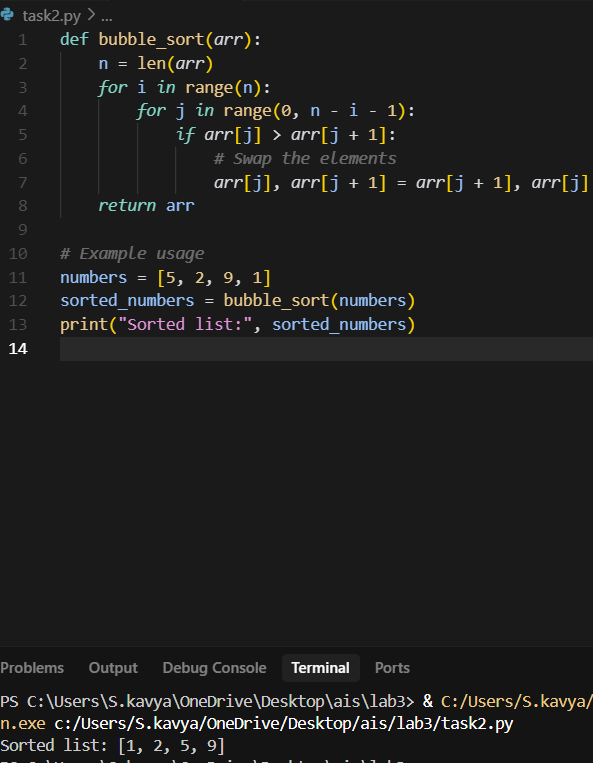
**Task Description#2**

* Provide a clear example input-output prompt to generate a sorting function.

**Expected Output#2**

* Functional sorting code from AI

**Prompt:**  
Write a Python function that takes a list of integers as input and returns the list sorted in ascending order using the bubble sort algorithm. Example input: [5, 2, 9, 1]. Expected output: [1, 2, 5, 9].



**Task Description#3**

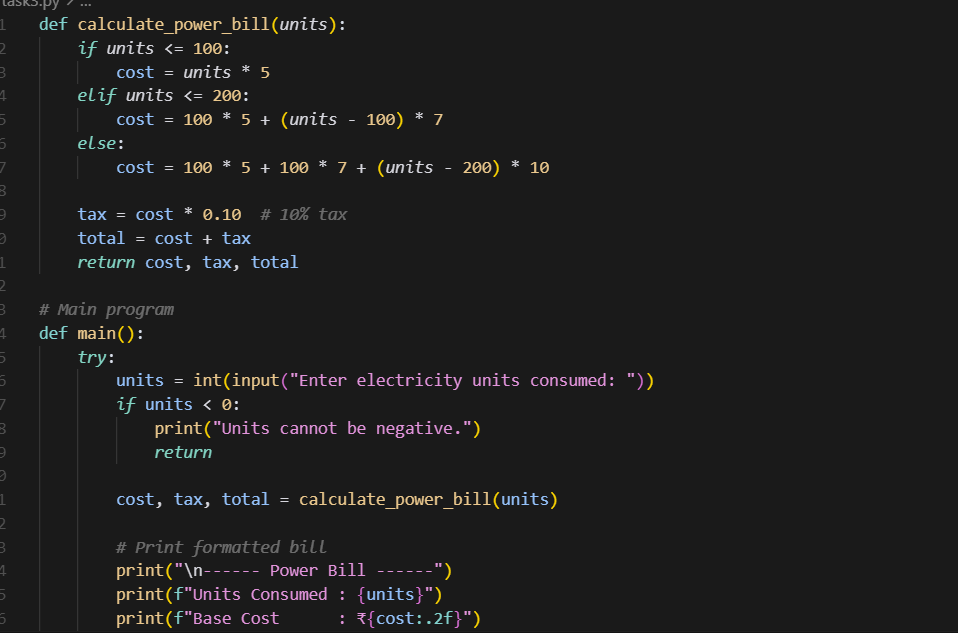
* Start with the vague prompt “Generate python code to calculate power bill” and improve it step-by-step

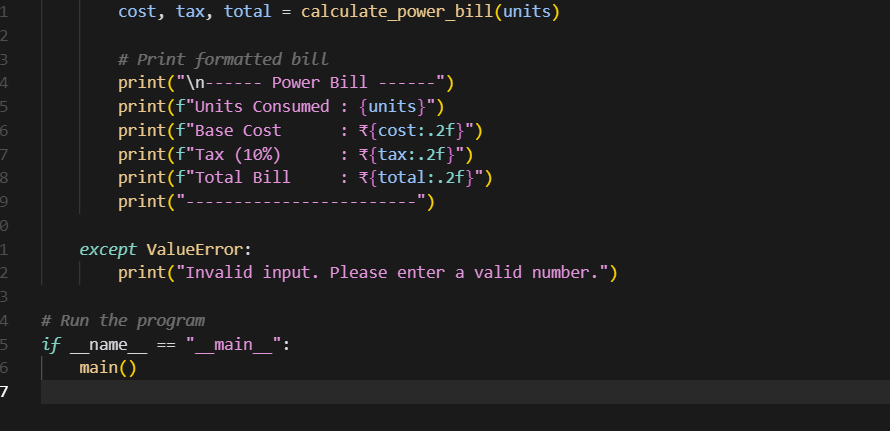
**Expected Output#3**

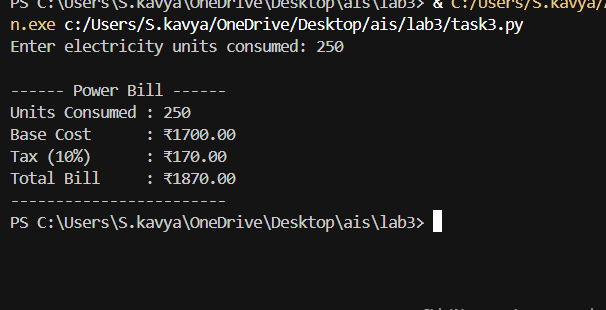
* Enhanced AI output with clearer prompts

Prompt:

**Write a Python program to calculate an electricity bill based on these rules:**







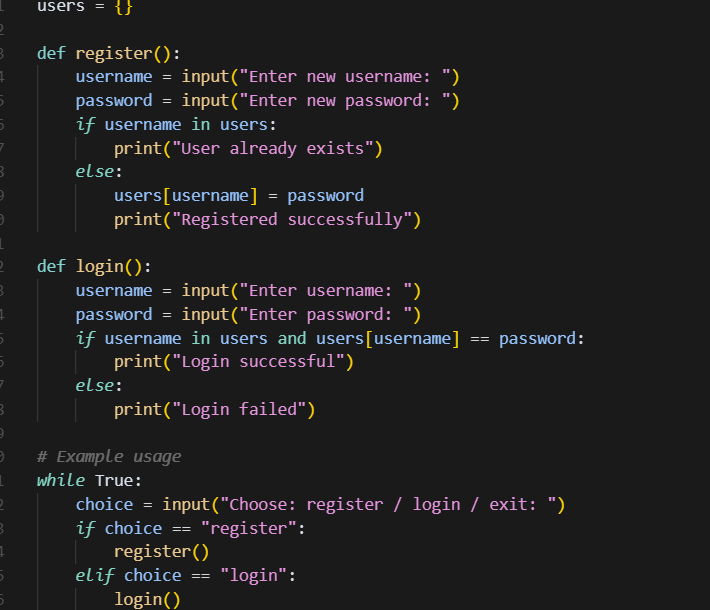
**Task Description#4**

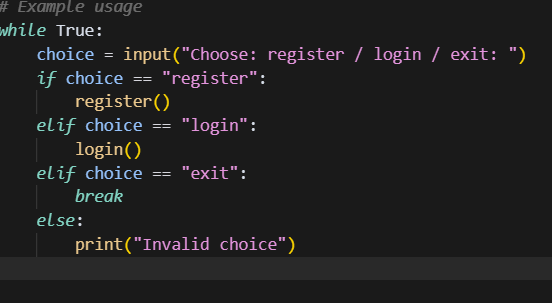
* Write structured comments to help AI generate two linked functions (e.g., login\_user() and register\_user()).

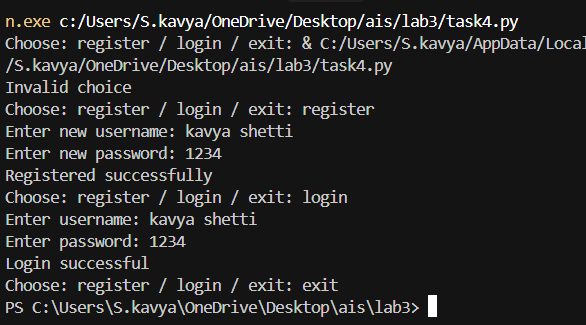
**Expected Output#4**

* Consistent functions with shared logic

Prompt:

**Write a simple Python program with input that allows the user to register and log in using a dictionary. Use a loop to let the user choose to register, log in, or exit. Show messages for success or failure.**

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**Task Description#5**

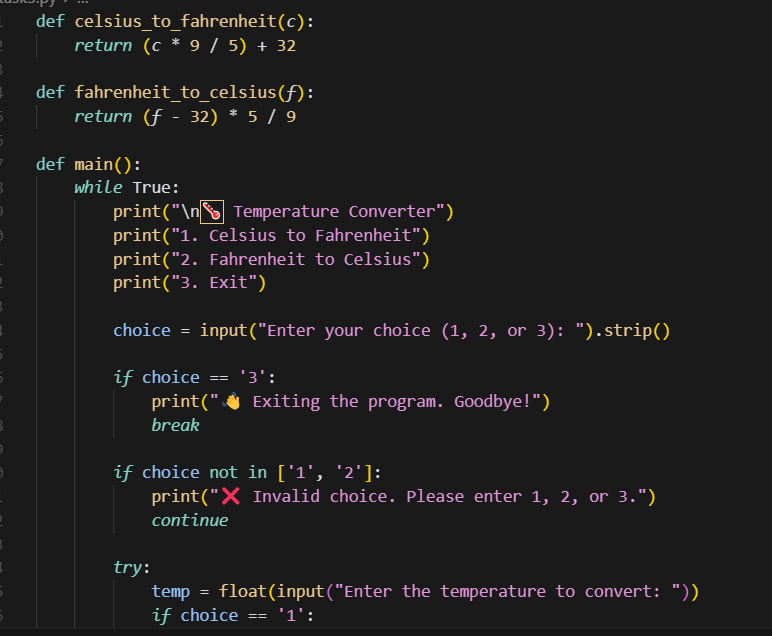
* Analyzing Prompt Specificity: Improving Temperature Conversion Function with Clear Instructions

**Expected Output#5**

* Code quality difference analysis for various

Prompt:

**Write a simple Python program to convert temperatures between Celsius and Fahrenheit using a loop and functions**

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