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| **SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE** | | | | | **DEPARTMENT OF COMPUTER SCIENCE ENGINEERING** | | | |
| **Program Name:** B. Tech | | | | **Assignment Type: Lab** | | | **Academic Year:**2025-2026 | |
| **Course Coordinator Name** | | | | Venkataramana Veeramsetty | | | | |
| **Instructor(s)Name** | | | | 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 | | | | |
| **Course Code** | | | 24CS002PC215 | **Course Title** | | AI Assisted Coding | | |
| **Year/Sem** | | | II/I | **Regulation** | | R24 | | |
| **Date and Day**  **of Assignment** | | | 06-08-2025 | **Time(s)** | |  | | |
| **Duration** | | | 2 Hours | **Applicable to**  **Batches** | |  | | |
| **AssignmentNumber:6.5**(Present assignment number)/**24**(Total number of assignments) | | | | | | | | |
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|  | **Q.No.** | **Question** | | | | | | ***ExpectedTime***  ***to complete*** |  |
|  | 1 | **Lab 6: AI-Based Code Completion: Working with suggestions for classes, loops, conditionals**  Lab Assignment 1: Intelligent Code Completion for Object-Oriented Programming  **Objective:** To explore AI-powered code assistants for writing Python classes, constructors, and methods through intelligent suggestions.  Suppose that you are hired as an intern at a tech company that develops inventory management systems. Your manager asks you to create a **Product** class and a **Warehouse** class with some basic methods. You have decided to use AI-powered code suggestions to help speed up development and reduce syntax errors.  Tasks to be completed are as below  **1. Setup AI Coding Tool:**   * Install and configure GitHub Copilot or Kite with VS Code or JetBrains IDE. * Enable real-time code suggestions.   **Implementation of GitHub Copilot in VS Code**   1. Installed **GitHub Copilot extension** in VS Code. 2. Logged in with GitHub and enabled real-time code suggestions. 3. Tested it by writing a small function, and Copilot suggested the code automatically. 4. Now, while typing code, suggestions appear, and I can press **Tab** to accept.   **2. Class Design Using AI Assistance:**   * Begin defining a Product class with attributes: name, price, quantity. * Use the AI suggestion feature to automatically complete the \_\_init\_\_() method. * Add a method calculate\_value() to return price \* quantity.   **Prompt**  Write a Python program with a Product class. The class should have attributes name, price, and quantity. Add a method calculate\_value() that returns the total value . Then write code to take input from the user, create a Product object, and print the total value  **Code**  **IMG_256**  **Observations**   1. The program correctly calculates the **total value** of a product.   ·Example : For product laptop with price 100000 and quantity 9, the output is **900000.0**.  2.The code is **simple, readable, and reusable** for any product  **Code Explanation**   1. A **class** Product is created with attributes: name, price, and quantity. 2. The **constructor** \_\_init\_\_ initializes these attributes when a new product is created. 3. The method calculate\_value() multiplies price × quantity and returns the total value.   **3. Create Another Class:**   * Define a Warehouse class with a list of Product objects. * Use code completion to help implement**:**   + A method to add a product.   + A method to display the most valuable product.   **Prompt**  Write a Python program with a Warehouse class that stores multiple Product objects,and add methods to a product to the warehouse and display the most valuable product with user input  **Code**  IMG_256  **Observations:**   1. The program correctly stores multiple products in the warehouse. 2. It calculates the **total value** of each product using the formula: price×quantity. 3. It then compares values and prints the **most valuable product**.   **Code Explanation**   1. Creates a Warehouse object. 2. Uses a loop to take product details (name, price, quantity) from the user until they type **‘done’**. 3. Each product is stored in the warehouse. 4. At the end, it finds and prints the most valuable product with its total value.   **4. Reflection:**   * Identify how much of the code was completed by AI and what manual edits were needed. * Comment on the relevance and accuracy of AI suggestions.     **Reflection on AI Coding Tool Usage**  Most of the code was written with the help of AI . It suggested the class structure, constructor, and methods. I had to edit and add parts like input prompts, the loop for entering many products, and the final print statements. The AI suggestions were useful and mostly correct. They saved time, but I still needed to make small changes to fit the program’s needs.  **Requirements:**   * VS Code with Github Copilot or Cursor API and/or Google Colab with Gemini   **Deliverables:**   * Python script with both classes and comments on AI-generated suggestions. * Short report (1 page) summarizing your experience with AI code completion.   . | | | | | | 15.08.2025 EOD |  |