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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.   **Answer:**  🡪We have successfully installed **GitHub Copilot** and enabled real-time code suggestions in our IDE. 🡪Additionally, we installed **Google Colab** and tested real-time AI code suggestions.  **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 Python code for a Product class with attributes name, price, and quantity.  Use \_\_init\_\_() to initialize, add calculate\_value() to return price \* quantity, and take dynamic input for multiple products to display their total values.  **Output:**      **Observation:**  🡪This program creates a Product class with attributes for name, price, and quantity, along with a method to compute the product’s total value. It then takes user input for multiple products, generates corresponding Product objects, stores them in a list, and finally loops through the list to display each product’s details and calculated 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 Python code to define a Warehouse class that stores multiple Product objects.  Include a method to add products dynamically from user input.  **Output:**      **Observation:**  🡪The code models a simple warehouse system using classes. The Product class holds details like name, price, and quantity, and calculates total value. The Warehouse class maintains a list of products with methods to add items and find the most valuable one. By taking dynamic input for multiple products, the program simulates real-world warehouse operations and highlights the usefulness of object-oriented programming.  **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.     **Prompt:**  🡪Write a Python program with dynamic input.Show which parts were suggested by AI and which parts were written manually, and add comments about how accurate and useful the AI code was.  **Output:**      **Observation:**  🡪This Python program helps check how much of the code was written with AI suggestions and how much was done manually. It takes input for the AI percentage, then shows the manual part automatically. The user can also enter what changes they made and give a rating for AI accuracy (1–5). Finally, the program gives a short note on how useful AI was and prints a simple report showing AI vs manual work.  **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 |  |