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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) | | | | | | | | |
| **NAME:-BAYYA RAMCHARAN**  **HTNO:-2403A510D2**  **BATCH NO:-04** | | | | | | | | |
|  | **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. * VS CODE (GITHUB COPILOT) EXTENSION:-   **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:-  *"Define a Python class named Product with name, price, and quantity attributes and an initializer method."*    **Prompt for Calculating Total Value:**  *Add a method calculate\_value() in Product that returns the result of price \* quantity.*    OUTPUT:-    **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:-**  *"In Warehouse, write a method to add a Product object to the internal product list." "Write a Python method in Warehouse that returns the Product with the greatest value, using the calculate\_value() method."*      Output:-    **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:-**  **AI-powered code completion significantly enhances the software development process by providing real-time intelligent suggestions that speed up coding, reduce syntax errors, and help programmers focus on higher-level design aspects. During the development of the Product and Warehouse classes, AI tools like GitHub Copilot effectively generated boilerplate code such as constructors and common methods, which saved substantial time. However, manual edits were often necessary to tailor the code to specific business logic and ensure correctness, demonstrating that AI is an aid rather than a full substitute for developer expertise. The relevance of AI suggestions was generally high, particularly for routine and repetitive coding patterns, but accuracy varied with more complex tasks requiring developer intervention. Overall, AI code assistants improve productivity and learning but rely on a collaborative human-AI workflow to produce quality software.**  **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.   . | | | | | | VS |  |