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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: Gundu Meghana Roll.No: 2403A510C1 Batch: 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.     **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**:  Create a Python Product class with attributes name (string), price (integer), and quantity (integer); use AI suggestions to complete the \_\_init\_\_() method, then add a method calculate\_value() that returns price \* quantity, and finally test the class with sample data where the product name is 'Laptop', the price is 55000, the quantity is 3, and the expected output should show the name as Laptop, the price as 55000, the quantity as 3, and the calculated value as 165000.    **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**:Define a Python Warehouse class with a list of Product objects; use AI code  completion to implement a method add\_product(self, product) to add a product and a  method most\_valuable\_product(self) to display the product with the highest value,  then test the class by adding three products —  Product 1: Name 'Laptop', Price:55000, Quantity 3;  Product 2: Name 'Phone', Price 30000, Quantity 5;  Product 3: Name 'Headphones', Price 2000, Quantity 10 —  and the expected output should display that the most valuable product is 'Phone' with  total value of 150000.    **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:**   * While setting up the AI coding tool, most of the installation and configuration steps were straightforward with minimal manual effort. * For the Product class, AI completed the constructor and even suggested the calculate\_value() method correctly, covering almost the entire task with little adjustment. * In the Warehouse class, AI provided useful suggestions for adding products and identifying the most valuable product, though slight manual edits were needed to refine the logic. * Overall, the AI suggestions were highly relevant, reduced syntax errors, and significantly improved development speed, but manual verification was still necessary for accuracy.   **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 |  |