|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE** | | | | | **DEPARTMENT OF COMPUTER SCIENCE ENGINEERING** | | | | |
| **ProgramName:**B. Tech | | | | **Assignment Type: Lab** | | | **AcademicYear:**2025-2026 | | |
| **CourseCoordinatorName** | | | | Venkataramana Veeramsetty | | | | | |
| **Instructor(s)Name** | | | | |  | | --- | | Dr. V. Venkataramana (Co-ordinator) | | Dr. T. Sampath Kumar | | Dr. Pramoda Patro | | Dr. Brij Kishor Tiwari | | Dr.J.Ravichander | | Dr. Mohammand Ali Shaik | | Dr. Anirodh Kumar | | Mr. S.Naresh Kumar | | Dr. RAJESH VELPULA | | Mr. Kundhan Kumar | | Ms. Ch.Rajitha | | Mr. M Prakash | | Mr. B.Raju | | Intern 1 (Dharma teja) | | Intern 2 (Sai Prasad) | | Intern 3 (Sowmya) | | NS\_2 ( Mounika) | | | | | | |
| **CourseCode** | | | 24CS002PC215 | **CourseTitle** | | AI Assisted Coding | | | |
| **Year/Sem** | | | II/I | **Regulation** | | R24 | | | |
| **Date and Day**  **of Assignment** | | | Week3 - Thursday | **Time(s)** | |  | | | |
| **Duration** | | | 2 Hours | **Applicableto**  **Batches** | |  | | | |
| **AssignmentNumber:6.4**(Present assignment number)/**24**(Total number of assignments) | | | | | | | | | |
|  | | | | | | | | | |
|  | **Q.No.** | **Question** | | | | | | ***ExpectedTime***  ***to complete*** |  |
|  | 1 | Lab 6: AI-Based Code Completion – Classes, Loops, and Conditionals  **Lab Objectives:**   * To explore AI-powered auto-completion features for core Python constructs. * To analyze how AI suggests logic for class definitions, loops, and conditionals. * To evaluate the completeness and correctness of code generated by AI assistants.   **Lab Outcomes (LOs):**  After completing this lab, students will be able to:   * Use AI tools to generate and complete class definitions and methods. * Understand and assess AI-suggested loops for iterative tasks. * Generate conditional statements through prompt-driven suggestions. * Critically evaluate AI-assisted code for correctness and clarity.   **Task Description #1:**  **•** Start a Python class named Student with attributes name, roll\_number, and marks. Prompt GitHub Copilot to complete methods for displaying details and checking if marks are above average.  **Expected Outcome #1:**  **•** Completed class with Copilot-generated methods like display\_details() and is\_passed(), demonstrating use of if-else conditions.  **Prompt:**  **Start a Python class named Student with attributes name, roll\_number, and marks . Completed class with methods like display\_details() and is\_passed(), demonstrating use of if-else conditions**    **Observation:**  **This code defines an else block that prints a message if a student's marks are not above the average. In the example usage, a**[**Student**](vscode-file://vscode-app/c:/Users/navya/AppData/Local/Programs/Microsoft%20VS%20Code/resources/app/out/vs/code/electron-browser/workbench/workbench.html)**object is created with the name "Navya", roll number 101, and marks 85. The [display\_details()](vscode-file://vscode-app/c:/Users/navya/AppData/Local/Programs/Microsoft%20VS%20Code/resources/app/out/vs/code/electron-browser/workbench/workbench.html" \o ") method is called to show the student's details, and the [is\_above\_average(75)](vscode-file://vscode-app/c:/Users/navya/AppData/Local/Programs/Microsoft%20VS%20Code/resources/app/out/vs/code/electron-browser/workbench/workbench.html" \o ") method checks if the student's marks are above 75. If not, the else block executes, printing that the student does not have marks above average.**  **Task Description #2:**  **•** Write the first two lines of a for loop to iterate through a list of numbers. Use a comment prompt to let Copilot suggest how to calculate and print the square of even numbers only.  **Expected Outcome #2:**  **•** A complete loop generated by Copilot with conditional logic (if number % 2 == 0) and appropriate output.  **Prompt:**  **numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]**  **for num in numbers:**  **# calculate and print the square of even numbers**  **Code:**    **Output:**    **Task Description #3:**  **•** Create a class called BankAccount with attributes account\_holder and balance. Use Copilot to complete methods for deposit(), withdraw(), and check for insufficient balance.  **Expected Outcome #3:**  **•** Functional class with complete method definitions using if conditions and self attributes. Code should prevent overdrawing.  **Prompt:**  **class BankAccount: def init(self, account\_holder, balance=0): self.account\_holder = account\_holder self.balance = balance**  **def deposit(self, amount):**  # add amount to balance and print new balance  **pass**  **def withdraw(self, amount):**  # subtract amount if balance is enough, else print "Insufficient balance"  **Pass**  **Code and output :**    **Task Description #4:**  **•** Define a list of student dictionaries with keys name and score. Ask Copilot to write a while loop to print the names of students who scored more than 75.  **Expected Outcome #4:**  **•** A complete while loop generated by Copilot with proper condition checks and formatted output.  **Prompt:**  **students = [**  **{"name": "Navya", "score": 100},**  **{"name": "Sakshi", "score": 70},**  **{"name": "Sreetha", "score": 70},**  **{"name": "Akshaya", "score": 95},**  **{"name": "Divija", "score": 80},**  **]**  **i = 0**  **# write a while loop to print the names of students who scored more than 75**  **Code:**    **Task Description #5:**  **•** Begin writing a class ShoppingCart with an empty items list. Prompt Copilot to generate methods to add\_item, remove\_item, and use a loop to calculate the total bill using conditional discounts.  **Expected Outcome #5:**  **•** A fully implemented ShoppingCart class with Copilot-generated loops and if-else statements handling item management and discount logic.  **Prompt:**  **Create a empty items list called ShoppingCart , generate methods to** add\_item, remove\_item and use a loop to calculate the total bill using conditional discounts using if-else statements  code:    **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** | | --- | --- | | Class | 1 | | Loop | 1 | | condition | 0.5 | | **Total** | **2.5 Marks** | | | | | | | Week3 - Thursday |  |