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|  | **Q.No.** | **Question** | | | | | |  |  |
|  | 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 (Classes)**   * Use AI to complete a Student class with attributes and a method. * Check output * Analyze the code generated by AI tool   **Instructions**:   * **Initialize class with attributes like name, roll no, marks** * **Method to display student details** * **Method to calculate grade based on marks (A:>=90, B: >=75, C: >=60, else Fail)**   Start Writing code and auto complete using any AI tool  A screen shot of a computer  AI-generated content may be incorrect.  **Expected Output#1**   * Class with constructor and display\_details() method * **A screenshot of a computer    AI-generated content may be incorrect.**   **Task Description#2 (Loops)**   * Prompt AI to complete a function that prints the first 10 multiples of a number using a loop. * Analyze the generated code * Ask AI to generate code using other controlled looping   Write code using **For** Loop, later complete code using **While** Loop  A computer screen shot of a program code  AI-generated content may be incorrect.  **Expected Output#2**   * Correct loop-based implementation   **A computer screen shot of a number  AI-generated content may be incorrect.**  **Task Description#3 (Conditional Statements)**   * Ask AI to write nested if-elif-else conditionals to classify age groups. * Analyze the generated code * Ask AI to generate code using other conditional statements   **A computer screen shot of text  AI-generated content may be incorrect.**  **Expected Output#3**   * Age classification function with appropriate conditions and with explanation * **A black background with white text    AI-generated content may be incorrect.**   **Task Description#4 (For and While loops)**   * Generate a sum\_to\_n() function to calculate sum of first n numbers * Analyze the generated code * Get suggestions from AI with other controlled looping   **A computer screen shot of a program code  AI-generated content may be incorrect.**  **Expected Output#4**   * Python code with explanation   **A black background with white text  AI-generated content may be incorrect.**  **Task Description#5 (Class)**   * Use AI to build a BankAccount class with deposit, withdraw, and balance methods. * Analyze the generated code * Add comments and explain code   **Instructions**   * **Initialize BankAccount class with attributes like name, balance** * **Method to deposit amount** * **Method to withdraw amount** * **Method to check balance**   **A screen shot of a computer program  AI-generated content may be incorrect.**  **Expected Output#5**   * Python code with explanation | | | | | | Week3 - Wednesday |  |