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| **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 - Wednesday | **Time(s)** | |  | | | |
| **Duration** | | | 2 Hours | **Applicableto**  **Batches** | |  | | | |
| **AssignmentNumber:6.3**(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 – 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  PROMPT: generate a python code to display student details by giving their name,rollno, and marks to calculate marks  (A:>=90, B: >=75, C: >=60, else Fail)      **Expected Output#1**   * Class with constructor and display\_details() method     **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  **Prompt:**  Generate a Python function that prints the first 10 multiples of a given number using a for loop  to generate code using other controlled looping    **Expected Output#2**   * Correct loop-based implementation     **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   **Prompt:** **"Write a Python program that classifies a person's age group based on user input. Use both nested and flat if-elif-else conditionals to define age categories: Child (0–12), Teenager (13–19), Adult (20–59), and Senior (60+). Include input validation for negative ages and display results from both classification methods."**    **Expected Output#3**   * Age classification function with appropriate conditions and with explanation     **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   **Prompt:**  **Write a Python program that defines four functions to calculate the sum of the first *n* natural numbers: one using a for loop, one using a while loop, one using the mathematical formula n(n+1)/2, and one using Python’s built-in sum() function. Include input validation for negative numbers and allow the user to enter a value for *n* to see results from all four methods.**    **Expected Output#4**   * Python code with explanation     **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**   **Prompt: Write a Python program that defines a BankAccount class with attributes for account holder's name and balance. Include methods to deposit money, withdraw money, and check the current balance. The program should take user input to perform these operations interactively, validate inputs, and loop until the user chooses to exit.**    **Expected Output#5**   * Python code with explanation     **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 | 1.0 | | Loops | 1.0 | | Conditional Statements | 0.5 | | **Total** | **2.5 Marks** | | | | | | | Week3 - Wednesday |  |