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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  **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  **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   **Expected Output#3**   * Age classification function with appropriate conditions and with explanation     OUTPUT:    EXPLAINATION:   1. Define a function classify\_age(age) that checks the value of age. 2. If the age is **less than 0**, it prints "Invalid age". 3. If the age is **0 to 12**, it prints "Child". 4. If the age is **13 to 19**, it prints "Teenager". 5. If the age is **20 to 59**, it prints "Adult". 6. If the age is **60 or above**, it prints "Senior". 7. Finally, the program asks the user to enter their age, converts it to an integer, and then calls the function to print the category.   **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     **Expected Output#4**     * Python code with explanation * **The function sum\_to\_n(num) calculates the sum of natural numbers from 1 to num using a loop.** * **total starts at 0, and each number from 1 to num is added to it.** * **The function returns the final sum.** * **The user enters a number, and the program prints the sum of the first num natural numbers.**   **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**     **Expected Output#5**     * Python code with explanation * **A BankAccount class is created with attributes name (account holder) and balance.** * **It has methods:** * **deposit(amount) → adds money if the amount is positive.** * **withdraw(amount) → subtracts money if the amount is valid and balance is enough.** * **check\_balance() → shows the current balance.** * **The program asks for the account holder’s name and initial balance.** * **A menu loop lets the user choose to deposit, withdraw, check balance, or exit.**   Based on the choice, the corresponding method is called until the user exits.  **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 |  |