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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) | | | | | | |
| **CourseCode** | | | 24CS002PC215 | **CourseTitle** | | AI Assisted Coding | | | |
| **Year/Sem** | | | II/I | **Regulation** | | R24 | | | |
| **Date and Day**  **of Assignment** | | | Week4 - Wednesday | **Time(s)** | |  | | | |
| **Duration** | | | 2 Hours | **Applicableto**  **Batches** | |  | | | |
| **AssignmentNumber:7.3**(Present assignment number)/**24**(Total number of assignments) | | | | | | | | | |
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|  | **Q.No.** | **Question** | | | | | | ***ExpectedTime***  ***to complete*** |  |
|  | 1 | Lab 7: AI-Error Debugging with AI: Systematic approaches to finding and fixing bugs  **Lab Objectives:**   * To identify and correct syntax, logic, and runtime errors in Python programs using AI tools. * To understand common programming bugs and AI-assisted debugging suggestions. * To evaluate how AI explains, detects, and fixes different types of coding errors. * To build confidence in using AI to perform structured debugging practices.   **Lab Outcomes (LOs):**  After completing this lab, students will be able to:   * Use AI tools to detect and correct syntax, logic, and runtime errors. * Interpret AI-suggested bug fixes and explanations. * Apply systematic debugging strategies supported by AI-generated insights. * Refactor buggy code using responsible and reliable programming patterns.   **Task Description#1**   * Paste a function with a missing colon (add(a, b)), and let AI fix the syntax error.     **Expected Output#1**   * Corrected function with syntax fix   **CODE:**    **OUTPUT:**     * AI identified the missing colon (:) in the function definition and corrected the syntax so Python can interpret the function properly**.**   **Task Description#2 (Loops)**   * Identify and fix a logic error in a loop that causes infinite iteration.     **Expected Output#2**   * AI fixes increment/decrement error   **CODE:**      Fixed the logic error. The loop used n += 1, which increments n, so with while n >= 0 it never terminates.  **The fix:** Changed n += 1 to n -= 1 so it counts down and exits when n becomes negative.  The corrected function is in Task7.2.py. It counts down from n to 0 and then stops.  **Task Description#3**   * Debug a runtime error caused by division by zero. Let AI insert try-except.     **Expected Output#3**   * Corrected function with safe error handling   **CODE:**        **Task Description#4**   * Provide a faulty class definition (missing self in parameters). Let AI fix it     **Expected Output#4**   * Correct \_\_init\_\_() method and explanation   **CODE:**      **Corrected version:**   * \_\_init\_\_(self, length, width) with self as the first parameter * Includes area() and perimeter() methods   **Task Description#5**   * Access an invalid list index and use AI to resolve the Index Error.     **Expected Output#5**   * AI suggests checking length or using safe access logic   **CODE:**     * AI recommended checking len(my\_list) before accessing the index to prevent IndexError.   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** | | --- | --- | | Identification of bugs | 0.5 | | Application of AI-suggested fixes | 0.5 | | Explanation and understanding of errors | 0.5 | | Corrected code functionality | 0.5 | | Report structure and reflection | 0.5 | | **Total** | **2.5 Marks** | | | | | | | Week4 - Wednesday |  |