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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** | | | 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   **CORRECT CODE:**    **NOTE : Every function definition must end with a colon( : ) to indicate the start of the function block**  **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   **CORRECT INCREMENT CODE :**    **Task Description#3**   * Debug a runtime error caused by division by zero. Let AI insert try-except.     **ERROR :**  **IS RUNTIME ERROR BECAUSE DIVIDING BY ZERO IS NOT ALLOWED IN PYTHON**  **Expected Output#3**   * Corrected function with safe error handling   **CORRECT 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   **Correct code:**    **Explanation :**   * **\_\_init\_\_()** is a constructor method in Python classes. It runs automatically when you create a new object. * The first parameter, self, refers to the **current object** being created. It allows you to access or store data inside that specific instance. * length and width are the arguments passed when you create the object. * self.length = length → saves the value of length inside the object’s variable length. Similarly, self.width = width stores width inside the object.   **Task Description#5**   * Access an invalid list index and use AI to resolve the Index Error.     PROBLEM :  ** The list has 3 elements → valid indices are 0, 1, 2.**  ** Trying to access numbers[5] means Python looks for the 6th element, which doesn’t exist.**  ** This raises:**  **Expected Output#5**   * AI suggests checking length or using safe access logic   **Correct code :**    Note :    If the index is invalid , the **excep**t block safely handle the error instead of crashing the program  **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 |  |