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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 - Tuesday | **Time(s)** | |  | | | |
| **Duration** | | | 2 Hours | **Applicableto**  **Batches** | |  | | | |
| **AssignmentNumber:8.2**(Present assignment number)/**24**(Total number of assignments) | | | | | | | | | |
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|  | **Q.No.** | **Question** | | | | | | ***ExpectedTime***  ***to complete*** |  |
|  | 1 | Lab 8: Test-Driven Development with AI – Generating and Working with Test Cases  **Lab Objectives:**   * To introduce students to test-driven development (TDD) using AI code generation tools. * To enable the generation of test cases before writing code implementations. * To reinforce the importance of testing, validation, and error handling. * To encourage writing clean and reliable code based on AI-generated test expectations.     **Lab Outcomes (LOs):**  After completing this lab, students will be able to:   * Use AI tools to write test cases for Python functions and classes. * Implement functions based on test cases in a test-first development style. * Use unittest or pytest to validate code correctness. * Analyze the completeness and coverage of AI-generated tests. * Compare AI-generated and manually written test cases for quality and logic   **Task Description#1**  Use AI to generate test cases for a function is\_prime(n) and then implement the function.  **Requirements:**   * Only integers > 1 can be prime.   Check edge cases: 0, 1, 2, negative numbers, and large primes.  **Expected Output#1**  **Prompt**: generate a code that detects if the entered numbers is prime or not using the is\_prime function  **output :**  **Task Description#2 (Loops)**   * Ask AI to generate test cases for celsius\_to\_fahrenheit(c) and fahrenheit\_to\_celsius(f).   **Requirements**   * Validate known pairs: 0°C = 32°F, 100°C = 212°F. * Include decimals and invalid inputs like strings or None   **Expected Output#2**  **Prompt:** generate a code that uses an input temperature to check if it is in Celsius and converts into fahreinheit and vice versa and also run some test cases to make it error free **output:**  **Task Description#3**  Use AI to write test cases for a function count\_words(text) that returns the number of words in a sentence.  **Requirement**  Handle normal text, multiple spaces, punctuation, and empty strings.  **Expected Output#3**  **Prompt:**Generate a code that counts no.of words in a senence and make sure it is error free by running some test cases. **output:**  **Task Description#4**   * Generate test cases for a BankAccount class with:   **Methods:**  deposit(amount)  withdraw(amount)  check\_balance()  **Requirements:**   * Negative deposits/withdrawals should raise an error. * Cannot withdraw more than balance.   **Expected Output#4**  **Prompt:**  **Task Description#5**  Generate test cases for is\_number\_palindrome(num), which checks if an integer reads the same backward.  **Examples:**  121 → True  123 → False  0, negative numbers → handled gracefully  **Expected Output#5**  **Prompt :** generate a code that finds out the input number is a palindrome or not and run some test cases to make it error free  **Output:**  .  **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** | | --- | --- | | Task #1 | 0.5 | | Task #2 | 0.5 | | Task #3 | 0.5 | | Task #4 | 0.5 | | Task #5 | 0.5 | | **Total** | **2.5 Marks** | | | | | | | Week4 - Wednesday |  |