| **SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE** | | | | | **DEPARTMENT OF COMPUTER SCIENCE ENGINEERING** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Program Name: M**. Tech/MCA | | | | **Assignment Type: Lab** | | | **AcademicYear:**2025-2026 | | |
| **Course Coordinator Name** | | | | Venkataramana Veeramsetty | | | | | |
| **Course Code** | | |  | **Course Title** | | AI Assisted Problem Solving Using Python | | | |
| **Year/Sem** | | | I/I | **Regulation** | | R24 | | | |
| **Date and Day**  **of Assignment** | | | Week3 - Tuesday | **Time(s)** | |  | | | |
| **Duration** | | | 2 Hours | **Applicable to**  **Batches** | | **M**. Tech/MCA | | | |
| **AssignmentNumber:5.3**(Present assignment number)/**24**(Total number of assignments) | | | | | | | | | |
|  | | | | | | | | | |
|  | **Q.No.** | **Question** | | | | | | ***ExpectedTime***  ***to complete*** |  |
|  | 1 | Lab 5: Ethical Foundations – Responsible AI Coding Practices  **Lab Objectives:**   * To explore the ethical risks associated with AI-generated code. * To recognize issues related to security, bias, transparency, and copyright. * To reflect on the responsibilities of developers when using AI tools in software development. * To promote awareness of best practices for responsible and ethical AI coding.   **Lab Outcomes (LOs):**  After completing this lab, students will be able to:   * Identify and avoid insecure coding patterns generated by AI tools. * Detect and analyze potential bias or discriminatory logic in AI-generated outputs. * Evaluate originality and licensing concerns in reused AI-generated code. * Understand the importance of explainability and transparency in AI-assisted programming. * Reflect on accountability and the human role in ethical AI coding practices.   **Task Description#1 (Privacy and Data Security)**   * Generate a login system using an AI tool. Analyze if the AI inserts hardcoded credentials or insecure logic.               **Expected Output#1**   * Description of risks and revised secure version   **Task Description#2 (Bias)**   * Use prompt variations like “loan approval system” with different genders/names. Analyze if AI suggests biased logic.         **Expected Output#2**   * Identification of bias (if any) and mitigation ideas   **Task Description#3 (Transparency)**   * Write prompt to write function calculate the nth Fibonacci number using recursion and generate comments and explain code document             **Expected Output#3**   * Code with explanation * **Assess: Is the explanation understandable and correct?**   **Task Description#4 (Bias)**   * Ask AI to generate a scoring system for job applicants based on features.         **Expected Output#4**   * Python code * Analyze is there any bias with respect to gender or any   **Task Description#5 (Inclusiveness)**   * Code Snippet           **Expected Output#5**   * Regenerate code that includes **gender-neutral** also   **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** | | --- | --- | | Transparency | 2.5 | | Bias | 2.5 | | Inclusiveness | 2.5 | | Data security and Privacy | 2.5 | | **Total** | 10 | | | | | | | Week3 - Tuesday |  |