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| **SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE** | | | | | **DEPARTMENT OF COMPUTER SCIENCE ENGINEERING** | | | | |
| **Program Name:** B. Tech | | | | **Assignment Type: Lab** | | | **Academic Year:**2025-2026 | | |
| **Course Coordinator Name** | | | | 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) | | | | | | |
| **Course Code** | | | 24CS002PC215 | **Course Title** | | AI Assisted Coding | | | |
| **Year/Sem** | | | II/I | **Regulation** | | R24 | | | |
| **Date and Day**  **of Assignment** | | | Week3 – Monday | **Time(s)** | |  | | | |
| **Duration** | | | 2 Hours | **Applicable to**  **Batches** | |  | | | |
| **Assignment Number:5.1**(Present assignment number)/**24**(Total number of assignments) | | | | | | | | | |
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|  | **Q.No.** | **Question** | | | | | | ***Expected Time***  ***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 in API Usage)  Task: Use an AI tool to generate a Python program that connects to a weather API.  Prompt: *"Generate code to fetch weather data securely without exposing API keys in the code."*  Expected Output:   * Original AI code (check if keys are hardcoded). * Secure version using environment variables.     Task Description #2 (Privacy & Security in File Handling)  Task: Use an AI tool to generate a Python script that stores user data (name, email, password) in a file.  Analyze: Check if the AI stores sensitive data in plain text or without encryption.  Expected Output:   * Identified privacy risks. * Revised version with encrypted password storage (e.g., hashing).     Task Description #3 (Transparency in Algorithm Design)  Objective: Use AI to generate an Armstrong number checking function with comments and explanations.  Instructions:   1. Ask AI to explain the code line-by-line. 2. Compare the explanation with code functionality.   Expected Output:   * Transparent, commented code. * Correct, easy-to-understand explanation.     Task Description #4 (Transparency in Algorithm Comparison)  Task: Use AI to implement two sorting algorithms (e.g., QuickSort and BubbleSort).  Prompt: *"Generate Python code for QuickSort and BubbleSort, and include comments explaining step-by-step how each works and where they differ."*  Expected Output:   * Code for both algorithms. * Transparent, comparative explanation of their logic and efficiency.     Task Description #5 (Transparency in AI Recommendations)  Task: Use AI to create a product recommendation system.  Prompt: *"Generate a recommendation system that also provides reasons for each suggestion."*  Expected Output:   * Code with explainable recommendations. * Evaluation of whether explanations are understandable.     Task Description #6 (Transparent Code Generation)  Task: Ask AI to generate a Python function for calculating factorial using recursion.  Prompt: *"Generate a recursive factorial function with comments that explain each line and a final summary of the algorithm’s flow."*  Expected Output:   * Fully commented code. * Clear documentation of how recursion works.     Top of Form  Task Description #7 (Inclusiveness in Customer Support)  Code Snippet:    Task:  Regenerate the code so that support messages use neutral language (e.g., “Dear {name}”) and optionally accept preferred titles.  Expected Output:   * Neutral, user-friendly support responses.     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 | 1 | | Inclusiveness | 0.5 | | Data security and Privacy | 1 | | Total | 2.5 Marks | | | | | | | Week3 - Monday |  |