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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** | | | | Dr. Rishabh Mittal | | | | | |
| **Instructor(s) Name** | | | | |  | | --- | | Mr. S Naresh Kumar | | Ms. B. Swathi | | Dr. Sasanko Shekhar Gantayat | | Mr. Md Sallauddin | | Dr. Mathivanan | | Mr. Y Srikanth | | Ms. N Shilpa | | Dr. Rishabh Mittal (Coordinator) | | Dr. R. Prashant Kumar | | Mr. Ankushavali MD | | Mr. B Viswanath | | Ms. Sujitha Reddy | | Ms. A. Anitha | | Ms. M.Madhuri | | Ms. Katherashala Swetha | | Ms. Velpula sumalatha | | Mr. Bingi Raju | | | | | | |
| **CourseCode** | | | 23CS002PC304 | **Course Title** | | AI Assisted Coding | | | |
| **Year/Sem** | | | III/II | **Regulation** | | R23 | | | |
| **Date and Day**  **of Assignment** | | | **Week3 – Monday** | **Time(s)** | | 23CSBTB01 To 23CSBTB52 | | | |
| **Duration** | | | 2 Hours | **Applicable to**  **Batches** | | All batches | | | |
| **Assignment Number: 5.1**(Present assignment number)/**24**(Total number of assignments) | | | | | | | | | |
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|  | **Q.No.** | **Question** | | | | | | ***Expected Time***  ***to complete*** |  |
|  |  | **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. | | | | | | Week3 - Monday |  |