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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** | | | Week3 - Tuesday | **Time(s)** | |  | | | |
| **Duration** | | | 2 Hours | **Applicableto**  **Batches** | |  | | | |
| **AssignmentNumber:5.2**(Present assignment number)/**24**(Total number of assignments) | | | | | | | | | |
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|  | **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)**   * Use an AI tool (e.g., Copilot, Gemini, Cursor) to generate a login system. Review the generated code for hardcoded passwords, plain-text storage, or lack of encryption.   **Expected Output#1**  Identification of insecure logic; revised secure version with proper password hashing and environment variable use.  **Prompt:**  🡪 Give me a python code in such a way that a login system. I can give multiple usernames and passwords. Passwords should be stored securely (hashed, not plain text). Login works only if username and password are correct.  **Output:**      **Observation:**  **🡪**This login system securely stores passwords using hashing and does not keep them in plain text. It checks the entered username and password against the stored data, allowing login only when both match correctly. Multiple users can be handled safely, preventing unauthorized access.  **Task Description#2 (Bias)**   * Use prompt variations like: “loan approval for John”, “loan approval for Priya”, etc. Evaluate whether the AI-generated logic exhibits bias or differing criteria based on names or genders.   **Expected Output#2**   * Screenshot or code comparison showing bias (if any); write 3–4 sentences on mitigation techniques.   **Prompt: 🡪** Generate a Python program that takes dynamic input for multiple individuals (name, income, credit score, gender) and checks loan approval based on different criteria for default, gender, and specific names. The program should output whether the loan is approved or rejected and provide a reason for rejection.  **Output:**      **Observation:**  **🡪** This program dynamically evaluates loan eligibility for multiple applicants based on income, credit score, gender, and specific names. It applies default rejection rules for low income or poor credit score. Female applicants face stricter credit requirements, and some names have special conditions. The system ensures transparency by providing a clear reason for every approval or rejection.  **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?**   **Prompt:**  **🡪** **Write a python code to write a function which calculates the nth fibonacci number using recursion and generate comments and explain code document using dynamic input.**  **Output:**    **Observation:**  **🡪** This program uses recursion to calculate the nth Fibonacci number with base cases for 0 and 1. It takes dynamic input from the user and applies the formula F(n) = F(n-1) + F(n-2). The approach is simple but can be slow for large n due to repeated calculations.  **Task Description#4 (Bias)**   * Ask to generate a job applicant scoring system based on input features (e.g., education, experience, gender, age). Analyze the scoring logic for bias or unfair weightings.   **Expected Output#4**   * Python code * Analyze is there any bias with respect to gender or any   **Prompt:**  **🡪**Write a Python program that takes details of a job applicant (education, experience, gender, and age) and gives a score to decide if the applicant is suitable. The program should also explain if the scoring rules are fair or biased.  **Output:**        **Observation:**  🡪The program scores job applicants based on education, experience, age, and gender.It provides a clear breakdown of points for each factor, making the scoring transparent.The analysis highlights potential bias, such as unfair weightings for gender.This helps identify and correct unfair rules to ensure a more equitable evaluation.  **Task Description#5 (Inclusiveness)**   * Code Snippet     **Expected Output#5**   * Regenerate code that includes **gender-neutral** also   **Prompt:**  🡪Write a Python program that asks how many people to greet. For each person, it takes their name and gender, adds a title based on gender (Mr., Ms., Mx., or none), creates a personalized greeting, and then shows all greetings together at the end.  **Output:**    **Observation:**  🡪The program dynamically greets multiple people based on their name and gender. It assigns appropriate titles (Mr., Ms., Mx.) and handles unknown genders gracefully. All greetings are stored and displayed together at the end.This ensures personalized and inclusive communication.  **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 | 0.5 | | Bias | 1.0 | | Inclusiveness | 0.5 | | Data security and Privacy | 0.5 | | **Total** | **2.5 Marks** | | | | | | | Week3 - Wednesday |  |