**Name: Akshaya Neerati**

**Enrollment No: 2403A510B8**

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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.  **WhatsApp Image 2025-08-26 at 10.35.30_48adb216**  **Output:**  **WhatsApp Image 2025-08-26 at 10.35.12_1b0ec437**  **Observation:**  **🡪**The system allows multiple users to register and securely stores passwords using SHA-256 hashing. Login verification compares hashed passwords, ensuring safe authentication. Users receive clear feedback on login attempts. Security could be further improved by using salted hashes (e.g., bcrypt) and storing sensitive data in environment variables.  **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: 🡪** Write a Python program that accepts multiple user inputs (name, income, credit score, gender) and decides loan approval. The program should apply criteria based on default rules, gender, or specific names, then output whether the loan is approved or rejected along with the reason.  **Output:**      **Observation:**  **🡪** The program evaluates loan eligibility for multiple applicants using income, credit score, gender, and specific names. It rejects applicants with low income or poor credit by default, applies stricter credit rules for female applicants, and enforces special conditions for certain names. Each decision is transparent, with clear reasons for 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 function that calculates the nth Fibonacci number using recursion. The program should take dynamic user input, include comments, and generate an explanation of the code.  **Output:**    **Observation:**  **🡪** The program calculates the nth Fibonacci number using recursion with base cases for 0 and It accepts dynamic user input and applies the formula F(n) = F(n-1) + F(n-2). While the approach is straightforward, it becomes inefficient for large n because of 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 a job applicant’s details (education, experience, gender, age), assigns a suitability score, and outputs whether the applicant is suitable. The program should also explain if the scoring rules are fair or biased.  **Output:**        **Observation:**  🡪The program evaluates applicants using education, experience, age, and gender, with a transparent point breakdown for each factor. It also highlights potential biases, such as unequal weighting for gender, helping to identify and correct unfair rules for fairer evaluations.  **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, take their name and gender, add an appropriate title (Mr., Ms., Mx., or none), create a personalized greeting, and display all greetings together at the end.  **Output:**    **Observation:**  🡪The program greets multiple people dynamically using their name and gender. It assigns suitable titles (Mr., Ms., Mx.) while handling unknown genders inclusively. All greetings are collected and displayed together, ensuring personalized and respectful 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 |  |