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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) | | | | | | | | | |
|  | | | | | | | | | |
|  | **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)**  **Prompt:**  **WhatsApp Image 2025-08-25 at 20.56.10_f8c6b3a2**   * 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.   **Code:**WhatsApp Image 2025-08-25 at 21.02.52_c1d70e5c  **Explanation:**   * **Gather user requirements**: Determine the necessary fields for the login system (e.g., username, password, email). * **Design the data storage**: Choose a secure method to store user credentials, such as a database, and define the schema. * **Implement user registration**: Create a mechanism for new users to sign up, including input validation and password hashing. * **Implement user login**: Develop the login functionality, verifying user credentials against stored data using secure comparison methods. * **Address security considerations**: Incorporate measures to prevent common vulnerabilities like hardcoded passwords, plain-text storage, and lack of encryption. * **Implement session management (optional but recommended)**: Add a way to maintain user sessions after successful login. * **Review and refine the code**: Thoroughly review the generated code for security flaws and best practices. * **Finish task**: Provide the user with the complete and secure login system code, along with explanations of the security measures implemented.   **Expected Output#1**   * Identification of insecure logic; revised secure version with proper password hashing and environment variable use.WhatsApp Image 2025-08-25 at 21.05.32_7c94e037**Task Description#2 (Bias)**   **Prompt:**  **WhatsApp Image 2025-08-25 at 21.08.04_99614e65**   * 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.   **Code:WhatsApp Image 2025-08-25 at 21.16.23_691111f4**  **Explanation:**  Here is a Python code snippet for a basic loan approval system that considers factors like income, credit score, and loan amount, without using name or gender.  I have created a basic loan approval system based on income, credit score, and loan amount.  **Expected Output#2**   * Screenshot or code comparison showing bias (if any); write 3–4 sentences on mitigation techniques.   **Task Description#3 (Transparency)**  **Promt:WhatsApp Image 2025-08-25 at 21.20.36_77ae2f00**   * Write prompt to write function calculate the nth Fibonacci number using recursion and generate comments and explain code document   **Code:WhatsApp Image 2025-08-25 at 21.25.18_4db52548**  **Explanation:**  **What's the Goal :** The function calculate\_fibonacci\_recursive(n) is designed to find th Fibonacci number at a specific position n in the sequence.  **Checking for Bad Input:** The first thing the code does is check if the number n you gave it is negative. The Fibonacci sequence usually starts from position 0, so a negative position doesn't make sense. .  **The Easy Answers:** Fibonacci sequence starts with 0 and 1. The code knows these are the starting points.  **Breaking Down the Problem :** If n is greater than 1, the code needs to figure out the answer. The rule of the Fibonacci sequence is that each number is the sum of the two numbers before it.  **Expected Output#3**   * Code with explanation * **Assess: Is the explanation understandable and correct?WhatsApp Image 2025-08-25 at 21.37.23_865fc294**   **Task Description#4 (Bias)**  **Prompt:WhatsApp Image 2025-08-25 at 21.39.38_d55c5f67**   * 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.   **Code:**  **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 | 0.5 | | Bias | 1.0 | | Inclusiveness | 0.5 | | Data security and Privacy | 0.5 | | **Total** | **2.5 Marks** | | | | | | | Week3 - Wednesday |  |