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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** | | | **Week1 – Monday** | **Time(s)** | | 23CSBTB01 To 23CSBTB52 | | | |
| **Duration** | | | 2 Hours | **Applicable to**  **Batches** | | All batches | | | |
| **Assignment Number:1.3**(Present assignment number)/**24**(Total number of assignments) | | | | | | | | | |
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|  | **Q.No.** | **Question** | | | | | | ***Expected Time***  ***to complete*** |  |
|  | 1 | Lab 2: Exploring Additional AI Coding Tools beyond Copilot – Gemini (Colab) and Cursor AI  **Lab Objectives:**   * To explore and evaluate the functionality of Google Gemini for AI-assisted coding within Google Colab. * To understand and use Cursor AI for code generation, explanation, and refactoring. * To compare outputs and usability between Gemini, GitHub Copilot, and Cursor AI. * To perform code optimization and documentation using AI tools.   **Lab Outcomes (LOs):**  After completing this lab, students will be able to:   * Generate Python code using Google Gemini in Google Colab. * Analyze the effectiveness of code explanations and suggestions by Gemini. * Set up and use Cursor AI for AI-powered coding assistance. * Evaluate and refactor code using Cursor AI features. * Compare AI tool behavior and code quality across different platforms.   **Task 1: Statistical Summary for Survey Data**   * **Scenario:** You are a **data analyst intern** working with survey responses stored as numerical lists. * **Task:** Use **Google Gemini in Colab** to generate a Python function that reads a list of numbers and calculates the **mean, minimum, and maximum** values. * **Expected Output:**   + Correct Python function   + Output shown in Colab   + Screenshot of Gemini prompt and result   **Task 2: Armstrong Number – AI Comparison**   * **Scenario:** You are evaluating AI tools for numeric validation logic. * **Task:** Generate an **Armstrong number checker** using **Gemini** and **GitHub Copilot**. Compare their outputs, logic style, and clarity. * **Expected Output:**   + Side-by-side comparison table   + Screenshots of prompts and generated code   **Task 3: Leap Year Validation Using Cursor AI**   * **Scenario:** You are validating a calendar module for a backend system. * **Task:** Use **Cursor AI** to generate a Python program that checks whether a given year is a leap year. Use **at least two different prompts** and observe changes in code. * **Expected Output:**   + Two versions of code   + Sample inputs/outputs   + Brief comparison   **Task 4: Student Logic + AI Refactoring (Odd/Even Sum)**   * **Scenario:** Company policy requires developers to write logic before using AI. * **Task:** Write a Python program that calculates the **sum of odd and even numbers in a tuple**, then refactor it using any AI tool. * **Expected Output:**   + Original code   + Refactored code   + Explanation of improvements   **Note: Report should be submitted as a word document for all tasks in a single document with prompts, comments & code explanation, and output and if required, screenshots.** | | | | | | Week1 - Monday |  |