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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** | | | Week1 - Thursday | **Time(s)** | |  | | | |
| **Duration** | | | 2 Hours | **Applicableto**  **Batches** | | 24CSBTB01 To 24CSBTB39 | | | |
| **AssignmentNumber:2.4**(Present assignment number)/**24**(Total number of assignments) | | | | | | | | | |
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|  | **Q.No.** | **Question** | | | | | | ***ExpectedTime***  ***to complete*** |  |
|  | 1 | Lab 2: Exploring Additional AI Coding Tools – 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 Description #1**  **•** Open Google Colab and use Google Gemini to generate Python code that performs sorting of a list using both the bubble sort algorithm and Python’s built-in sort() function. Compare the two implementations.  **PROMPT: Using both bubble sort algorithm and python’s built in sort() fuction, generate a python code that performs sorting of a list using the two**  **Expected Output #1**  **•** Two sorting implementations: Bubble sort (manual logic) and Built-in sort()  Screenshot 2025-08-08 at 14.01.21  **OBSERVATION:**  **. The time taken by the bubble sort was (0.052544) seconds, while the time taken by the built in sort() function is (0.000184). This shows that built in sort function is faster than the bubble sort unction**  **Task Description #2**  **•** In Colab, use Google Gemini to generate a Python function that takes a string and returns:  The number of vowels, The number of consonants, The number of digits in the string  **PROMPT: Take a string and return the no. of vowels, the no. of consonents and the no. of digits in the string using python function**  **Expected Output #2-**  **•** Complete function that Iterates through characters of a string and Counts vowels, consonants, and digits  **Screenshot 2025-08-08 at 14.30.12**  **Observation:**  **This output tells us that in the string "Hello World 123!", there are:**   * ****3 vowels** (e, o, o)** * ****7 consonants** (H, l, l, W, r, l, d)** * ****3 digits** (1, 2, 3)**   **Task Description #3**  **•** Install and set up Cursor AI. Use it to generate a Python program that performs file handling:  Create a text file  Write sample text  Read and display the content  **PROMPT:**  **Set up Cursor AI and use it to generate a python program which could perform file**  **handlings.**  **Expected Output #3**  **•** Functional code that creates a .txt file, writes content to it, and reads it back.  • Screenshot of Cursor AI interface showing: Prompt used,  Generated code, Output of file operations  Screenshot 2025-08-08 at 14.39.47  **Observation:**  **We would see a message confirming that the file named "my\_example\_file.txt" was successfully created and the content was written to it.**  **Task Description #4**  • Ask Google Gemini to generate a Python program that implements a simple calculator using functions (add, subtract, multiply, divide). Then, ask Gemini to explain how the code works.  PROMT:  Write a python code that implementa a simple calculator using functions like add subtract multiply and divide  CODE:  Screenshot 2025-09-02 at 05.42.34  **Expected Output #4**  **•** Complete calculator code with user input and operation selection.  • Line-by-line explanation or markdown-style explanation provided by Gemini.  • Screenshot of both the code and explanation in Colab.  Observation:  We can observe from this that colab is using operation selection from the user and also the values of x and y from the user.  **Task Description #5** • Use Cursor AI to create a Python program that checks if a given year is a leap year or not. Try different prompt styles and see how Cursor modifies its code suggestions.  PROMPT:  write a python program that could check is a given year is a leap year or not  CODE:  Screenshot 2025-09-02 at 05.44.18  **Expected Output #5** • A functional program to check leap year with sample input/output • At least two versions of the code (from different prompts) • A short comparison of which version is better and why  **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** | | --- | --- | | Two sorting implementations: Bubble sort (manual logic) and Built-in sort() (Task#1) | 0.5 | | Counts vowels, consonants, and digits(Task#2) | 0.5 | | Functional code that creates a .txt file, writes content to it, and reads it back- Use cursor (Task#3) | 0.5 | | Complete calculator code with user input and operation selection. (Task#4) | 0.5 | | A functional program to check leap year with sample input/output-use Cursor (Task#5) | 0.5 | | **Total** | **2.5 Marks** | | | | | | | Week1 - Thursday |  |