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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 – Wednesday**	**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)			

Q.No.	Question	*Expected Time to complete*
1	Lab 2: Exploring Additional AI Coding Tools beyond Copilot – Gemini (Colab) and Cursor AI **Lab Objectives:**	Week1 - Monday

- ❖ 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: Word Frequency from Text File

❖ **Scenario:**

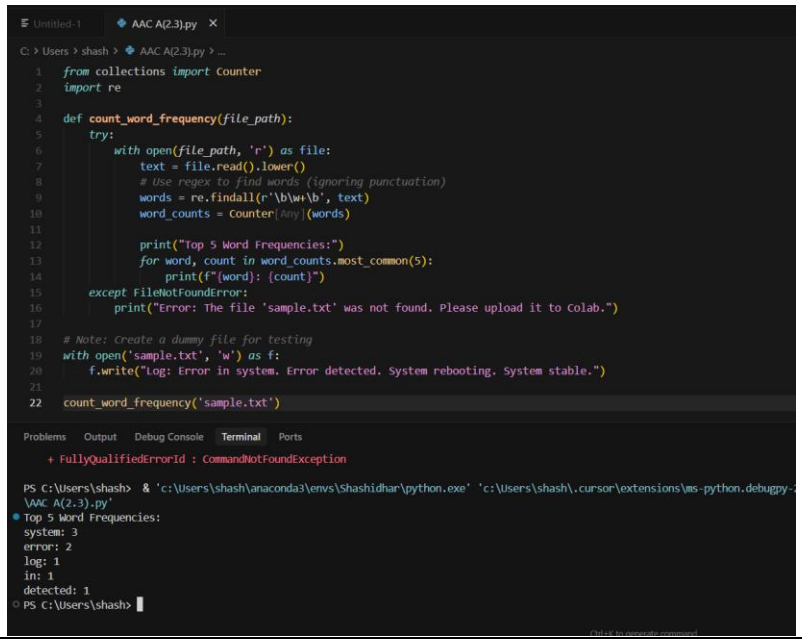
You are analyzing log files for keyword frequency.

❖ **Task:**

Use Gemini to generate Python code that reads a text file and counts word frequency, then explains the code.

❖ **Expected Output:**

- ➢ Working code
- ➢ Explanation
- ➢ Screenshot



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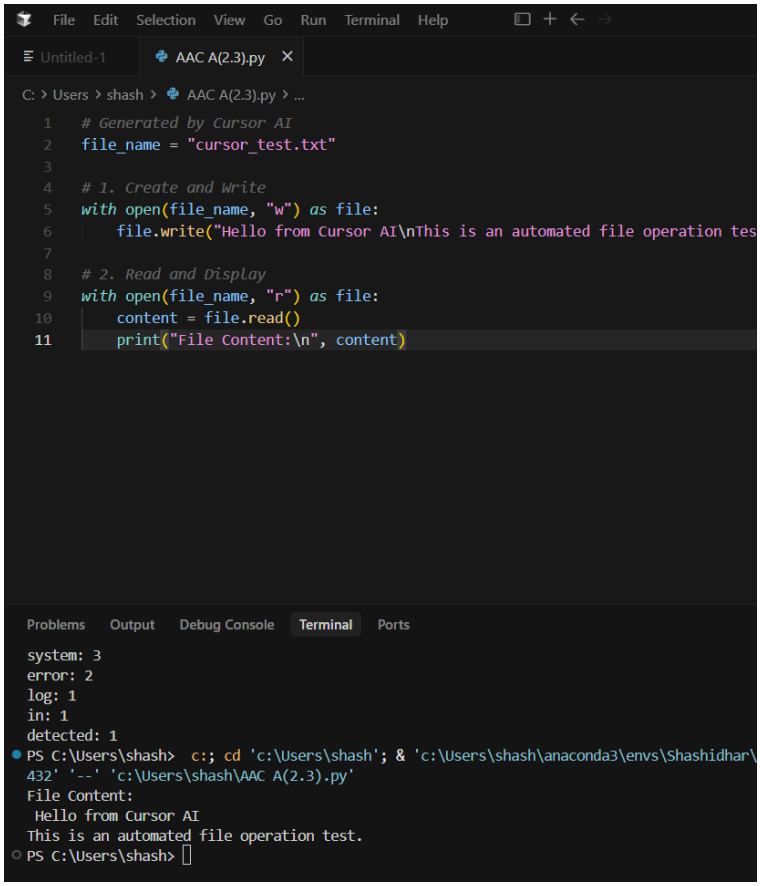
Task 2: File Operations Using Cursor AI

- **Scenario:**
  You are automating basic file operations.

- **Task:**
  Use Cursor AI to generate a program that:
  - Creates a text file
  - Writes sample text
  - Reads and displays the content

- **Expected Output:**
  - Functional code
  - Cursor AI screenshots
  -



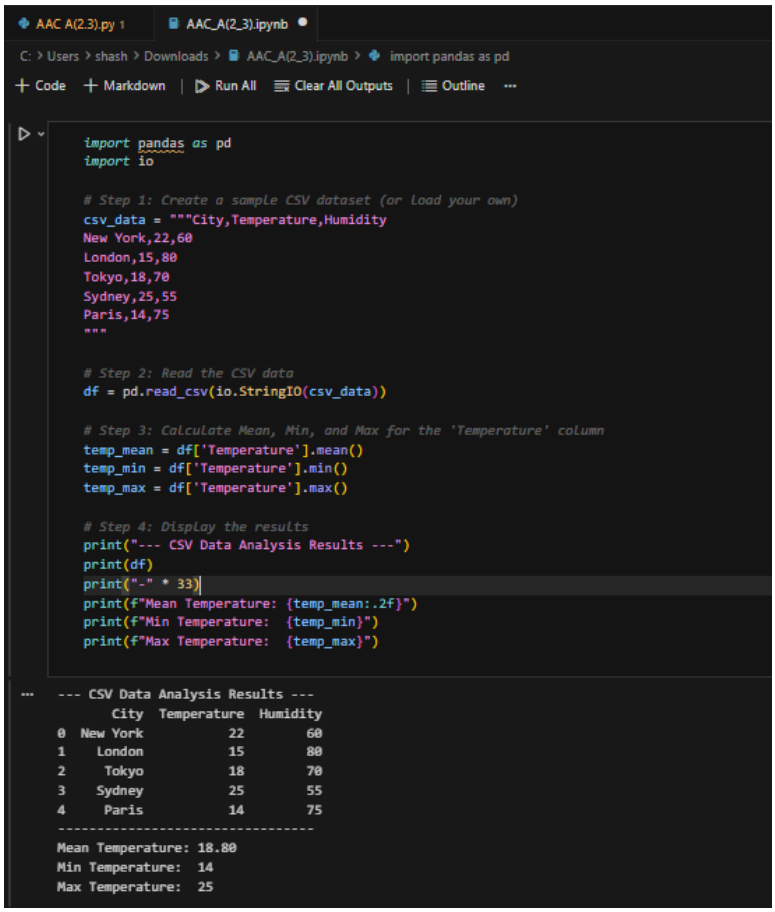
Task 3: CSV Data Analysis

- **Scenario:**
  You are processing structured data from a CSV file.

- **Task:**
  Use Gemini in Colab to read a CSV file and calculate mean, min, and max.

❖ **Expected Output:**

- Correct output
- Screenshot



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Task 4: Sorting Lists – Manual vs Built-in

❖ **Scenario:**
You are reviewing algorithm choices for efficiency.

❖ **Task:**
Use **Gemini** to generate:

- Bubble sort
- Python's built-in sort()
- Compare both implementations.

❖ **Expected Output:**

- Two versions of code
- Short comparison

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.