This data contains:

1. Student information (names, emails, phone numbers, and grades).

2. Factory log details (dates, machine IDs, and issue descriptions).

**Questions and Tasks**

Task 1: File Reading

Objective: Open the text file and read its contents line by line.

Skills Practiced: File handling and exception handling.

Hint: Use with open() and handle potential file-not-found errors.

Task 2: Splitting Data

Objective: Split the data into lines and separate students’ logs and factory logs.

Skills Practiced: String manipulation and loops.

Hint: Use .split('\n') and categorize data based on keywords.

Task 3: Extracting Information

Objective: Use regular expressions to extract specific details:

Names, emails, phone numbers, and grades from students’ data.

Dates, machine IDs, and issues from factory logs.

Skills Practiced: Regular expressions (re module).

Hint: Provide basic regex patterns in comments for guidance.

Task 4: Storing Data in Dictionaries

Objective: Store the extracted information in structured dictionaries.

Example for students: { "Name": "John Doe", "Email": "...", ... }

Example for factory logs: { "Date": "2025-01-23", "Machine ID": "...", ... }

Skills Practiced: Data structures (lists and dictionaries).

Hint: Use dict() and loops.

Task 5: Writing to a CSV File

Objective: Write the processed data into two separate CSV files:

students.csv for student details.

factory\_logs.csv for factory log details.

Skills Practiced: File handling and CSV module.

Hint: Use csv.writer from the csv module.

Task 6: Functions for Reusability

Objective: Refactor code into functions for reusability:

read\_file(), extract\_students\_data(), extract\_factory\_logs(), write\_to\_csv(), etc.

Skills Practiced: Writing and using functions.

Hint: Discuss how each function handles a specific part of the task.