Business Requirements Document

Project Name: Excel to SQL database.

Date Submitted: 1/26/2025

Project Manager: Rylee Leavitt

Document Status: Complete

Executive summary:

Our client, Steve, works in a mine that uses heavy-duty machines that keep track of their temperature, flow rate, pressure, and other data over time. The problem is that his workers have been using Excel to store this data, and they all do it differently. The order and format of the data in the .xlsx files are not consistent, and the data is spread out over multiple files. His computer's filesystem is now a cluttered mess of hundreds of mismatched Excel files, and it would be impossible to clean up by hand. The solution is to build an automated process of pulling the data from the Excel files and putting them in an ordered CSV (comma-separated values) file.

Project Objectives:

- Build an automated process of pulling the existing data from the Excel files and putting them in an ordered CSV file.

- Track future temperature, flow rate, pressure, and other data in an organized/consistent manner over time in the CSV File.

Project Scope:

Objective 1.) Build an automated process of pulling the existing data from the Excel files and putting them in an ordered CSV file.

Projects steps:

- Build a program that can read/extract from Excel documents/files.
- Identify report inconsistencies, errors, and missing data during the extraction.
- Normalize the data format (e.g., date, format, etc.)
- Duplicating the contents of these files into an array.
- Transfer/write the array contents into a CSV file.
- Implement a method to organize and archive the original Excel files after processing.

Objective 2.) Track future temperature, flow rate, pressure, and other data in an organized/consistent manner over time in the CSV File.

Projects steps:

- Allow multiple workers to login and add/edit future data.
    - Either from excel or the software application directly
- Store updates in a database.

Functional Requirements:

Some functional requirements of this project include:

- Data Extraction:
    - The system will read and access multiple Excel files located in a specified directory.
    - identifying and extracting relevant data fields, such as temperature, flow rate, pressure, and any other specified metrics.
- Data Standardization:
    - Standardize the format of extracted data (e.g., date format, numerical precision) to ensure consistency.
    - handle variations in the naming and order of data fields and map them to a consistent format.
- Data Consolidation:
    - Consolidate the standardized data from all Excel files into a single CSV file.
    - Append new data to the existing CSV file if it already exists.
- Error Handling:
    - Identify and report any inconsistencies, errors, or missing data during the extraction and standardization process.
    - Generate an error log file detailing any issues encountered.
- Filesystem Organization:
    - Organize and archive the original Excel files after processing.
    - Move processed files to a specified directory for storage and future reference.
- User Interface (UI):
    - A user-friendly interface for configuring the input and output directory.
    - Display progress and status updates during the data processing.
- Configuration:
    - Allow users to configure rules/parameters.
    - Save and load configuration settings for reuse.
- Performance:
    - Process multiple Excel files efficiently and within a reasonable time frame.
    - Handle large datasets without significant performance degradation.
- Documentation:
    - Include troubleshooting tips and guidelines for addressing common issues.

Deliverables:

- An automated script that performs data extraction, standardization, and consolidation.
- The final CSV file that contains all relevant data in a structured format.
- A report detailing any inconsistencies or errors encountered during the process.
- Detailed documentation on how to run and maintain the automated script, including troubleshooting tips.

Stakeholders:

Stakeholder Name:	Designation/Title:	Role:
Joseph Depoyster	Project Manager	Manage the project (Class instructor)
Rylee Leavitt	Developer	Develop the software (Student)
Steve Lastname	Client/Investor/End-user	Satisfaction Analysis (Client)

Schedule and Deadlines:

Project schedule: (According to Depoyster's class schedule on canvas)

Phase:	Function:	Deadline:
Analysis	Understand the structure and variety of existing Excel files.	Week 2
Planning	Outline each step in the software's pseudocode	Week 3
Design	Design pseudocode	Week 4
Development	Create the software to complete the defined specifications to the client's satisfaction	Week 5
Testing	Validate the script with a sample set of Excel files.	Week 6 (Zoom meeting)
Implementation	Run the script on the entire dataset and generate the finalCSV file. Make final	Week 7

	Aesthetic changes	
Review	Analyze the results, and make necessary adjustments based on feedback.	Week 7

SWOT analysis:

Strengths, Weaknesses, Opportunities, and Threats:

Strengths:	Weaknesses:	Opportunities:	Threats:
• Automation Efficiency • Data Accuracy • Error Handling • Organization	• Limited by consistency of existing Excel files. • Time constraints for developing, testing, and implementing the automated solution. • compatibility with different versions of Excel files	• Scalability • Consistent and accurate data • Improved Decision Making • Future Integrations • Reusability	• Data Quality • Technical Issues/Compatibility • Resource Availability

Financial Statements:

For this project, our development financial statement will be estimated via Bottom up Estimating which is a more precise process for estimation. Please note, this statement is an estimation and is subject to change given appropriate circumstances.

Back-end development:	$0.00
Front-end development:	$0.00

Database setup:	$0.00
API Integration:	$0.00
Testing:	$0.99

TOTAL annual development costs: $0.99
Free .99!

Cost-Benefit Analysis:

Compare the expected cost and revenues to determine whether the cost is worth the investment.

Benefits/Anticipated Gains:

Saved time:	Countless hours
Saved sanity:	Undefinable, in a good way :)
Salary expenses:	However much you'd pay someone else to do it manually

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TOTAL Annual Benefits: WOW! Thats-a nice!

TOTAL annual development costs: - $0.99
TOTAL Annual Benefits: + many much benefits
Net Profit: + your sanity, there's no conceivable reason to not hire us