# Lettuce Growth Analysis Project

## Data Analyst: Mansi Tamta

## Client/Sponsor: Data Analyst Coursework

## Purpose:

*The purpose of this project is to analyze how various environmental factors—such as temperature, humidity, and total dissolved solids—affect the number of days it takes for lettuce to reach maturity. This project aims to uncover patterns, generate data-driven insights, and provide potential recommendations to optimize lettuce growth conditions. The goal is to apply foundational data analysis skills and build a professional portfolio example.*

## Scope / Major Project Activities:

|  |  |
| --- | --- |
| **Activity** | **Description** |
| |  | | --- | | Data Acquisition |  |  | | --- | |  | | Download the Lettuce Growth Days dataset from Kaggle and open it in Excel/Google Sheets. |
| Data Cleaning | Remove invalid or missing values, convert temperature from Celsius to Fahrenheit, convert growth days to weeks, and clean humidity values. |
| Exploratory Data Analysis (EDA) | Perform summary statistics (mean, median, min, max), create visualizations, and look for patterns or correlations between variables. |
| Formulate SMART Questions | Create Specific, Measurable, Actionable, Relevant, and Time-bound questions to guide the analysis. |
| Analytics & Visualizations | Build scatterplots, histograms, and line charts to visualize growth trends and environmental impact. |
| Report & SOW Completion | Complete this Scope of Work and summarize findings in spreadsheet and/or GitHub documentation. |

## This project does not include:

* Predictive modeling or machine learning
* Analysis of data from other crops or years outside the dataset
* API integration or automation workflows

## SMART Questions:

|  |  |
| --- | --- |
| **SMART Component** | **Questions** |
| Specific | Is there a correlation between humidity and temperature in affecting lettuce growth? |
| Measurable | How many days on average does it take for lettuce to mature under varying temperature conditions? |
| Action-Oriented | Will increasing the total dissolved solids reduce the number of days to maturity? |
| Relevant | Can this data inform better practices for indoor or greenhouse lettuce farming? |
| Time-Bound | What is the time span of the recoded data, and can it help forecast future growing conditions? |

## Deliverables:

|  |  |
| --- | --- |
| **Deliverable** | **Description/ Details** |
| Cleaned Dataset | Spreadsheet with cleaned and transformed data (converted units , formatted columns). |
| Analytics Spreadsheet | A separate tab or file showing formulas, calculations, and visualizations. |
| SMART Questions | Five SMART questions guiding the analysis. |
| SOW Document | This completed Scope of Work template |
| Github Repository | Repository with dataset, analysis file, and README summary for professional portfolio |

## Schedule Overview / Major Milestones:

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Expected Completion Date** | **Description/Details** |
| Dataset Acquired & Opened | April 12, 2025 | Downloaded from Kaggle and opened in Sheets or Excel |
| Data Cleaning Completed | April 13, 2025 | All relevant columns cleaned and transformed |
| Exploratory Data Analysis | April 14, 2025 | Summary statistics and visualizations complete |
| SMART Questions & SOW Finalized | April 15, 2025 | Project questions formulated and SOW completed |
| Final Review & GitHub Upload | April 16, 2025 | All files uploaded to GitHub and project finalized |

## \*Estimated date for completion:

April 16, 2025