BioDataVisualization

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# Introduction

Data visualization is a crucial aspect of many disciplines, including business, science, academia, journalism, and others. Good visualization allows users to explore data inactively and understand relationships between variables. In this report, we will go through the process of producing visualizations for a scientific research project.

## What is Scientific Research

Scientific research is a systematic process aimed at generating new knowledge, understanding phenomena, or solving problems through experimentation, observation, analysis, and interpretation. Part of the process involves collecting and processing data processing for visualization. Specifically interpreting data relies on effective visualization to confirm or deny the hypothesis.

## A real world case study

* the purpose of the study was to determine if the combination of Bacillus cereus and Pseudomonas alcaligenes, as a bio-priming agent, yielded an overall healthier plant at the end of germination stage

# Research Question

* How do we take real-world data for a real scientific study, process the data, and visualize it?

## Why do we do this (Rationale)

* We need to display the relationship between bio-priming seeds and the overall health of the plant at germination
* visualizing the data helps us visibly compare root length averages and growth overtime compared to the control non-exposed plants

## How do we do this?

* we do this by looking at root and sprout growth (length, size, coloration)
* to determine if there are differing affects on monocot and dicot plants

### Definitions

Bio-priming

The process of coating the seed with a plant-growth promoting bacteria consortium

Monocot plant

The seeds of these plants typically contain a single embryonic leaf

Dicot plant

A plant whose germinating seed contain two embryonic leaves

Embryonic leaf

The plant embryo, also known as cotyledon

# Data Manipulation

# Data Presentation

# Conclusion