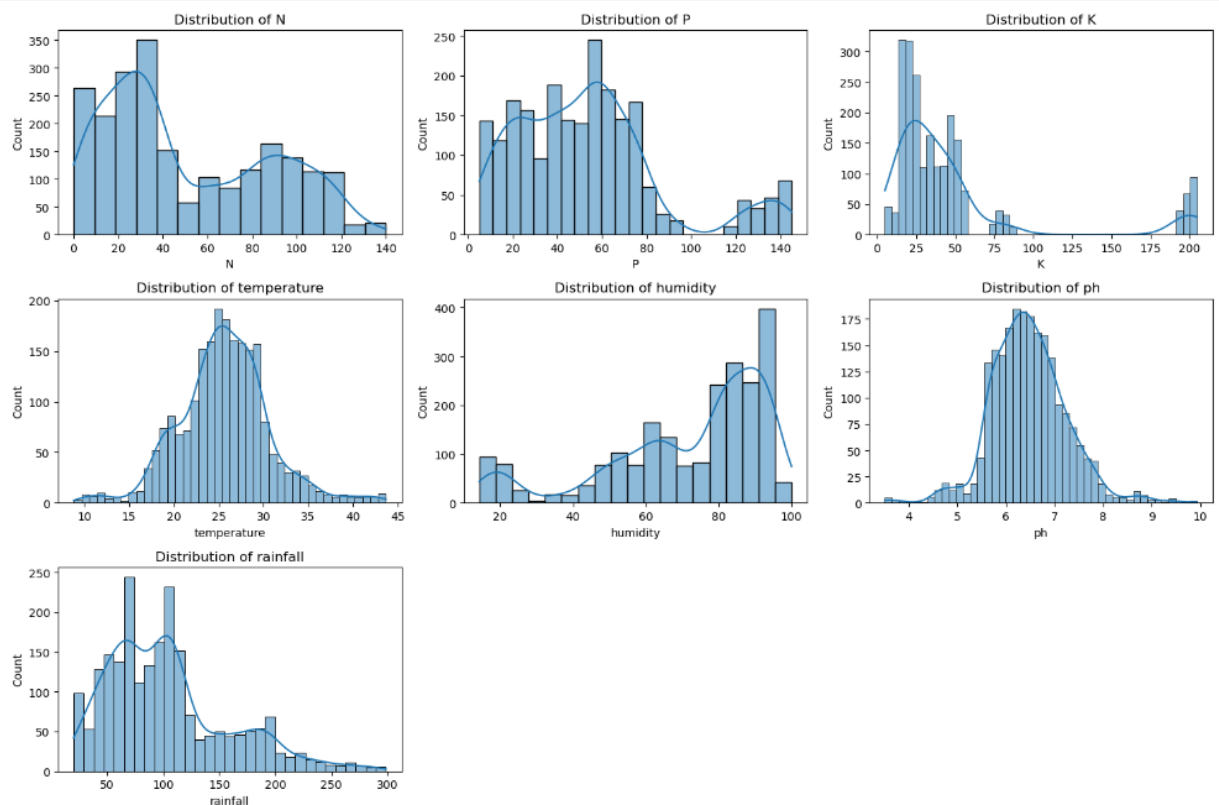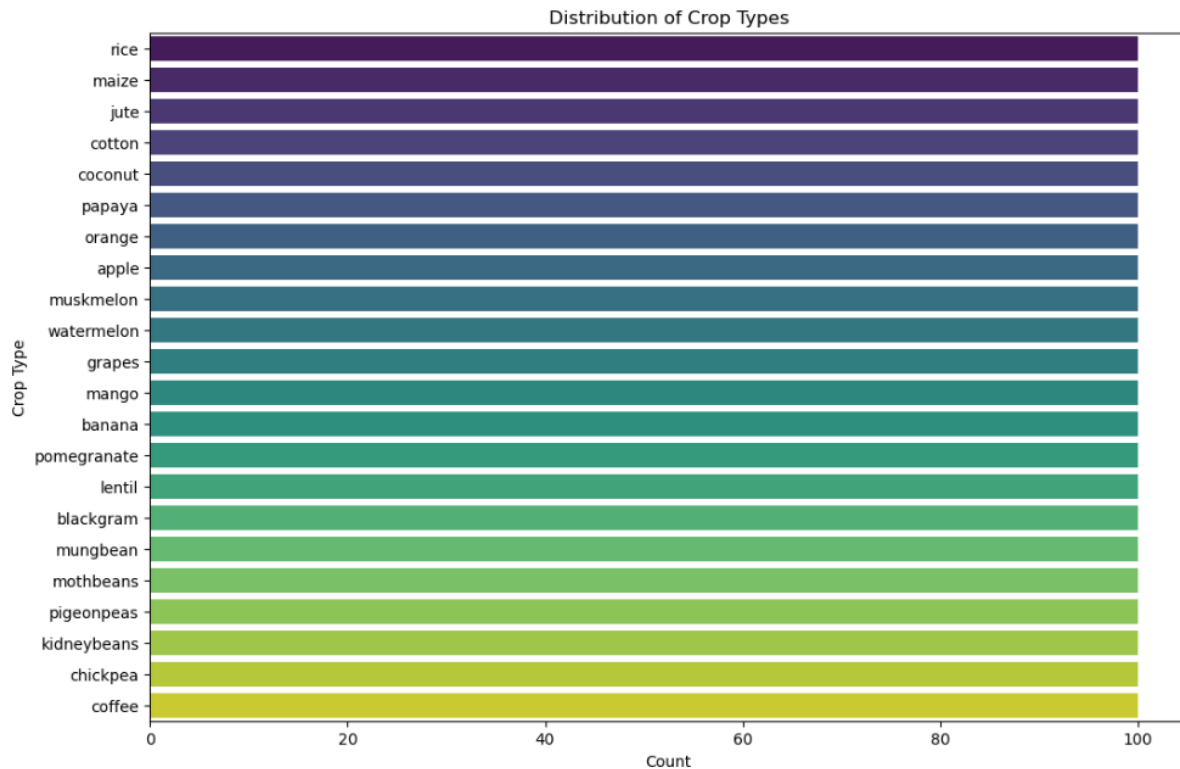**Project Milestone-1**
Priyachandana Kodati

During the first stage of this project, we conducted data wrangling and exploratory data analysis (EDA) to ready the dataset and understand its structure. The data comes from the Crop Recommendation Dataset on Kaggle and consists of factors like nitrogen, phosphorus, potassium levels, temperature, humidity, pH, and rainfall, as well as a suggested crop. Through the process of cleaning and examining this data, we establish the foundation for creating a responsive tool designed to suggest appropriate crops depending on environmental factors. Initially, the process involved uploading and verifying the data, then ensuring no missing values and reviewing the statistical summary of all features.

In order to improve our comprehension of the dataset, we created visual representations of the distribution of environmental characteristics and different types of crops. We created histograms to display how values are distributed for each feature, uncovering any bias or possible extreme values in the dataset. A bar chart displaying the occurrence of each type of crop offered a precise depiction of crop allocation, which will direct our future actions in developing impactful visuals. Studying these patterns helps us create more effective interactive features, guaranteeing that users can understand the connection between environmental conditions and crop suggestions.

Distribution of Crop Types

In accordance with the project milestones, our upcoming target will center on Data Visualization. During this stage, we will employ advanced visualization methods to delve deeper into connections within the data, assisting in the development of a user-friendly interface that effectively showcases important findings. Next, we will proceed with Interactive Visualization, during which we will create an interactive dashboard with Plotly. The users can enter environmental conditions into the dashboard to receive crop recommendations that are tailored to the dataset findings.

Project Details

Dataset: Crop Recommendation Dataset on Kaggle
Target Audience: Farmers, agricultural researchers, and policymakers interested in optimizing crop yields and supporting sustainable farming practices. The interactive tool we develop will serve as a valuable resource for these audiences, aiding in informed crop selection based on environmental data.