**PROBLEM STATEMENT:**

The street dog survey dataset is a well know dataset in the field of machine learning, in data analysis,it contains measurements of population of dogs in different areas in banglore.This project aims to performs and in depth Exploratory Data Analysis(EDA) and Statistical Analysis of the Street dog survey dataset,the dataset to gain insight into the characteristics like polulation of dogs in a particular area,gender of the dogs found,the percentage of dogs neutered,howmany dogs are present according to per sq.km and make us to understand the dataset and make predictions that can help us later.

**Project Plan:**

**Project Initiation**

* + Define project objectives and scope.
  + Identify stakeholders and their expectations.

**Data Collection and Preprocessing**

* + Obtain the Boston Housing dataset.
  + Explore and clean the data.
  + Handle missing values.
  + Normalize or scale features if needed.

**Data Analysis**

* + Perform exploratory data analysis.
  + Visualize data distribution and correlations.
  + Identify potential feature selection or engineering.

**Model Development**

* + Split the data into training and testing sets.
  + Implement and train various regression models (e.g., Linear Regression, Decision Trees, Random Forest).
  + Evaluate model performance using appropriate metrics.
  + Fine-tune hyperparameters.

**Model Validation**

* + Validate the model's performance on unseen data.
  + Cross-validation to assess model generalization.
  + Address any overfitting or underfitting issues.

**Documentation**

* + Create documentation for the project, including the dataset, data preprocessing steps, and model details.
  + Prepare a report or presentation summarizing the findings and the model's performance.

**Deployment and Integration**

* + Deploy the model to a relevant platform or system.
  + Integrate the model with any necessary applications or interfaces.

**Testing and Quality Assurance (Week 13)**

* + Thoroughly test the deployed model to ensure it functions as expected.
  + Address any issues or bugs.

**Maintenance and Monitoring (Ongoing)**

* + Establish a system for monitoring model performance in production.
  + Plan for model updates and maintenance

**Product backlog:**

**Task: Data Collection**

* + Subtask: Obtain the Boston Housing dataset.
  + Subtask: Verify data integrity and sources.

**Task: Data Preprocessing**

* + Subtask: Data cleaning and handling missing values.
  + Subtask: Normalize or scale features.

**Task: Data Analysis**

* + Subtask: EDA - Visualize data distribution.
  + Subtask: EDA - Identify correlations between features.
  + Subtask: Feature selection and engineering.

**Task: Model Development**

* + Subtask: Implement Linear Regression model.
  + Subtask: Implement Decision Trees and Random Forest models.
  + Subtask: Train and evaluate models.

**Task: Model Validation**

* + Subtask: Cross-validation for model generalization.
  + Subtask: Address model overfitting/underfitting if required.

**Task: Documentation**

* + Subtask: Create project documentation.
  + Subtask: Prepare a report or presentation.

**Task: Deployment and Integration**

* + Subtask: Deploy the model to a platform.
  + Subtask: Integration with an application or system.

**Task: Testing and Quality Assurance**

* + Subtask: Thoroughly test the deployed model.
  + Subtask: Address any issues or bugs.

**Task: Maintenance and Monitoring**

* + Subtask: Set up a monitoring system for the model in production.
  + Subtask: Plan for model updates and maintenance.

**CREATION OF GIT REPOSITORY :**

Creating a Git repository and submitting a Word document through Git involves several steps. Here's a simplified guide:

1. Create a Git Repository:

- Open a Git client (e.g., Git Bash, Git GUI, GitHub Desktop).

- Navigate to the directory where you want to create your repository.

- Run the following commands to create a Git repository:

git init

2. Add and Commit Your Project:

- Place your project files, including the Word document, in the repository directory.

- Use the following commands to add and commit your changes:

git add .

git commit -m "Initial commit"

3. Create a Remote Repository:

- Create a remote repository on a platform like GitHub, GitLab, or Bitbucket.

- Follow the platform-specific instructions for creating a new repository.

4. Connect Local and Remote Repositories:

- Link your local repository to the remote one by adding a remote URL:

git remote add origin <remote-repo-URL>

5. Push Your Local Repository to the Remote:

- Push your local repository to the remote one:

git push -u origin master

Replace `master` with the appropriate branch name if you're using a different branch.

6. Submission in Word Document:

- Create a Word document with your project details, including a description, project plan, and product backlog.

- Save the Word document in your local repository.

7. Commit and Push the Word Document:

- Add the Word document to your repository:

git add your-document.docx

git commit -m "Add project documentation"

- Push the changes to your remote repository:

git push

8. Submission Confirmation:

- Once your changes are pushed to the remote repository, you can provide the remote repository URL as your submission.

Your Word document and project details will be accessible through the remote Git repository. Ensure that your document is well-organized and contains all the necessary project information. Share the remote repository link with your intended recipients for submission confirmation.