**Phase 1: Problem Definition and Design Thinking**

In this part you will need to understand the problem statement and create a document on what have you understood and how will you proceed ahead with solving the problem. Please think on a design and present in form of a document.

**Problem Definition:**

**The problem is to predict house prices using machine learning techniques. The objective is to develop a model that accurately predicts the prices of houses based on a set of features such as location, square footage, number of bedrooms and bathrooms, and other relevant factors. This project involves data preprocessing, feature engineering, model selection, training, and evaluation.**

**Design Thinking:**

**Data Source: Choose a dataset containing information about houses, including features like location, square footage, bedrooms, bathrooms, and price.**

**Data Preprocessing: Clean and preprocess the data, handle missing values, and convert categorical features into numerical representations.**

**Feature Selection: Select the most relevant features for predicting house prices.**

**Model Selection: Choose a suitable regression algorithm (e.g., Linear Regression, Random Forest Regressor) for predicting house prices.**

**Model Training: Train the selected model using the preprocessed data.**

**Evaluation: Evaluate the model's performance using metrics like Mean Absolute Error (MAE), Root Mean Squared Error (RMSE), and R-squared.**

**Step 1: Download and Install Git**

**1. Visit the official Git website: https://git-scm.com/**

**2. Download the appropriate version of Git for your operating system (Windows, macOS, or Linux).**

**3. Run the installer and follow the on-screen instructions to complete the installation.**

**4. Open a terminal or command prompt and verify the installation by typing git−−version .**

**Step 2: Download and Install Visual Studio Code**

**1. Go to the Visual Studio Code website: https://code.visualstudio.com/**

**2. Download the installer for your operating system (Windows, macOS, or Linux).**

**3. Run the installer and follow the installation prompts.**

**4. Launch Visual Studio Code.**

**Step 3: Create a GitHub Account**

**1. Open a web browser and go to https://github.com/**

**2. Click on the "Sign up" button.**

**3. Follow the registration process, providing your username, email address, and password.**

**4. Complete the verification process if prompted.**

**Step 4: Create a GitHub Repository**

**1. Log in to your GitHub account.**

**2. Click on your profile icon in the upper right corner and select "Your repositories" from the dropdown menu.**

**3. On the "Repositories" page, click the green "New" button.**

**4. Fill in the required information for your new repository, including the repository name, description, visibility, and other settings.**

**5. Optionally, you can choose to initialize the repository with a README file or add a .gitignore file for your specific project.**

**6. Click the green "Create repository" button to create your GitHub repository.**

**Step 5: Create a Local Folder**

**1. Minimize any open windows on your computer to see your desktop.**

**2. Right-click on an empty area of your desktop.**

**3. Hover over "New" in the context menu.**

**4. Click on "Folder" to create a new folder.**

**5. Give your folder a meaningful name, like "MyProject."**

**Step 6: Open the Folder in Visual Studio Code**

**1. Launch Visual Studio Code.**

**2. Click on "File" in the top-left corner.**

**3. Select "Open Folder" from the dropdown menu.**

**4. Browse to your desktop and select the folder you created in Step 5 (e.g., "MyProject").**

**5. Click the "Open" button to open the folder in Visual Studio Code.**

**Step 7: Clone Your GitHub Repository**

**1. In Visual Studio Code, open the integrated terminal by clicking on "View" in the top menu and selecting "Terminal" or using the keyboard shortcut (Ctrl+ on Windows/Linux or Cmd+ on macOS).**

**2. Use the git clone command to clone your GitHub repository by pasting the HTTPS URL of your repository. Replace repository\_url with the actual URL.**

**git clone <repository\_url>**

**3. Navigate to the newly created repository folder using the cd command:**

**cd <repository\_name>**

**Step 8: Check Git Status**

**1. To check the status of your local repository, enter the following command:**

**git status**

**Step 9: Modify the README File**

**1. Open the README file in your repository folder using Visual Studio Code.**

**2. Make the desired modifications to the README file.**

**Step 10: Check Git Status Again**

**1. Return to the terminal in Visual Studio Code.**

**2. Use the gitstatus command again to see the changes you made:**

**git status**

**Step 11: Add Modifications to Staging Area**

**1. To stage your changes for a commit, use the gitadd command:**

**git add README.md**

**Step 12: Commit Your Changes**

**1. Commit your staged changes with a descriptive message:**

**git commit -m "Updated README file"**

**Step 13: Push Changes to GitHub**

**1. Push your committed changes to your GitHub repository:**

**git push**

**Step 14: Create a New Branch**

**1. To create a new branch, use the gitbranch command followed by the desired branch name:**

**git branch branch\_name**

**Step 15: Switch to the New Branch**

**1. To switch to the newly created branch, use the gitcheckout command:**

**git checkout branch\_name**

**Step 16: Check Your Current Branch**

**1. To confirm the branch you're currently working on, use the gitbranch command:**

**git branch**

**You've now completed the entire process of setting up a development environment, downloading and installing Git and Visual Studio**

**NOTE**: File Naming Convention: AI\_Phase1

After completion upload your file to your private GitHub account. Please give access to your faculty evaluators of your college and industry evaluator [ IndustryEvaluator@skillup.online ] to your private GitHub repository for evaluation process Go to the Project Submission Part 1 section and add your college code, the link of your GitHub in the space provided, upload your documents, and click on submit.