

## **Step 1: Set the Goals**

### **1.1 Go through the Overview of the Mentorship:**

- **Understanding the Project Expectations and Requirements:**
  - I will familiarize myself with regression analysis techniques.
  - I will learn about regression models for predicting numerical values, specifically fare amounts.
- **Having a General Knowledge in Regression Analysis:**
  - I will understand linear and nonlinear regression models.
  - I will learn how to evaluate model performance.

### **1.2 Visualize the Final Output Required for the Mentorship:**

- **Predict the Fare Amount of Future Rides:**
  - I will use historical ride data to predict future fare amounts.
  - I will visualize the results with Actual vs. Predicted fare amounts.

### **1.3 Write Down the Skills That I Will Learn by the Completion of the Mentorship:**

- Regression Analysis (Linear, Polynomial, etc.)
- Data Cleaning and Preprocessing
- Feature Selection and Engineering
- Model Evaluation and Performance Metrics
- Data Visualization (Actual vs Predicted fare)

### **1.4 Add the Learnings I Want by the Completion of the Mentorship:**

- Gain expertise in regression models for predicting numerical outcomes.
- Improve skills in data visualization for regression analysis.
- Develop a deeper understanding of data preprocessing techniques relevant to regression.

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## **Step 2: Describe the Major Constraints**

### **2.1 Add the Major Constraints in Completing the Mentorship:**

- **Ensure Availability of Quality Historical Ride Data:**
  - I need access to reliable and comprehensive data on past rides and fares.
- **Handling the Complexity of Regression Models and Parameter Tuning:**
  - I need to select the right regression model and tune hyperparameters effectively.

### **2.2 Breakdown the Constraints into Smaller Sections:**

- **Data Collection:**
  - I need to identify sources for reliable historical ride data.
- **Data Preprocessing:**
  - I need to handle missing values, encode categorical variables, and normalize data.
- **Model Building:**
  - I need to choose appropriate regression algorithms (e.g., linear regression, polynomial regression).
- **Model Evaluation:**
  - I need to select suitable performance metrics (e.g., Mean Squared Error, R-squared).

### **2.3 Get Assistance on Overcoming the Constraints in the Mentor Sessions:**

- I will seek guidance on model preprocessing, selection, and tuning from my mentor.
- I will obtain feedback on model performance and improvement strategies.

### **2.4 Add Resources (Online Links, Videos, etc.) to Resolve Constraints:**

- Online tutorials and courses on regression analysis (e.g., Coursera, Khan Academy).
- Articles and documentation on different regression models.

### **2.5 In Case I Am Not Able to Locate a Resource, Request the Mentor to Provide the Resource:**

- If needed, I will ask my mentor for specific resources or references related to regression analysis and fare prediction.

### **2.6 Update the Workplan Regularly, Adding Newer Constraints and Resources:**

- I will continuously refine my workplan with new constraints and resources as they arise.

## **Step 4: Set the Schedule for Completing the Mentorship**

### **4.1 Add the Start Date for the Mentorship:**

- **Start Date for Mentorship:** 05-08-24

### **4.2 Check the Deadlines for the Components and Add Reminders on My Calendar:**

- **Data Collection and Preprocessing:** 15-08-2024
- **Model Building and Training:** 25-08-2024
- **Model Evaluation and Tuning:** 31-08-2024
- **Final Report and Presentation:** 06-09-24

### **4.3 Mark the Deadlines as They Are Completed:**

- **Completed On:** 07-09-2024

**4.4 Technical Mentorships Require Approx. 25 Working Hours & Non-Technical Mentorships Require 15-20 Working Hours to Complete:**

- **Estimated Duration:** 60 Days