**AI Academy Capstone Proposal**

**Group 3 Empower Automotive**


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1. **What is the business problem? / Business Understanding**
    - **a.** Empower Automotive is an app that users can use to help set a price on their used car. They are trying to become a large player in the used car automotive industry.
    - **b.** The app will have an AI Model where you would be able to take a picture of your car for a visual on any damage, add details about your car and then the app will recommend a price for your car.
2. **What is the dataset? / Data Understanding**
    - **a.** Car Details Dataset | Kaggle
    - **b.** Direct download
    - c. This data is collected from 'Car Dekho'. The following details of cars are included in the dataset:
    - d. Car name
    - e. Year
    - f. Selling Price
    - g. Kms driven
    - h. Fuel
    - i. Seller type
    - j. Transmission
    - k. Owner
3. **What is your approach? / Data Preparation**
    - **a.** Clean the data – ensure we are pulling the most relevant features for our model and prediction
    - **b.** Replacing missing values with NULL so they are not used in the evaluation
    - **c.** One Hot encoding
    - **d.** Feature Selection
4. **Modeling/Tools/Methodologies**
    - **a.** Choose (2-3) from below models to use in our explanations – TBA as we start working with the dataset and figure out which direction we want to take to solve the problem.
        - **i.** Linear Regression
        - **ii.** Polynomial Regression
        - **iii.** XG Boost
        - **iv.** Random Forest
        - **v.** Neural Networks
    - **b.** Give client recommendation
    - **c.** Target Variable – Price

   **d.** This is a Regression Problem.
5. **Evaluation**
   **a.** MAE (mean absolute error)
   **b.** RMSE (Root Mean Squared Error)
   **c.** Accuracy
   **d.** R^2
6. **Who is the client?**
   a. Empower Automotive
      i. C-Suite Executives
      ii. TBD
7. **How has the problem been addressed in the past?**
   **a.** Subjectively comparing Empower Automotive cars to similar cars in the market and putting a price on it based on competitors
8. **What are the limitations of existing methods?**
   **a.** We don't have all the information for every make and model of cars in the market
   **b.** The model does not take everything into consideration that might affect the price of the car.
   **c.** Time, money, resources are all constraints in this model
9. **What is the timeline?**
   a. Weekly Check-ins and group work throughout timeline
   b. June 30th - July 7th – feedback and make changes as needed
   c. July 28th - full day working on Capstone with Team
   d. July 31st - Practice presentations and feedback
   e. August 4th – Final Presentation
10. **What is the expected benefit to a client?**
   **a.** Able to give the client the ability to make more objective and informed decisions on how to price their vehicles eliminating subjectivity
   **b.** Save time by eliminating the need for the client to conduct their own research on car pricing
   **c.** Free tool