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INFO 4150

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Mini Project 1

1. **What is the accuracy of your model in terms of RMSE?**

My model received an RMSE of 20.4 for 2nd order polynomial features and around 5.1 for 3rd order polynomial features. When running the flask app, I used the predicted values from the 3rd order polynomial model since the RMSE value was lower. Due to the lower RMSE value, predicted values would be more accurate and would better resemble pre-existing sensor 2 data.

1. **Describe the design of the complete WebApp you built - the flow, the user interface and anything unique that you did in the design?**

When designing the WebApp with Flask in Python, I conceptually split up the project into three main parts: the linear regression model, the home page form, and the prediction page.

I focused first on designing the predictive model with both 2nd order and 3rd order polynomial features since the app revolved around the model’s functionality. I designed and tested my model in Jupyter notebook just to troubleshoot, but then I transferred all my work to an independent Python file.

After implementing the model creation into the second app route (model), I focused on setting up the main homepage html form. Creating the form, naturally segued into the finishing the third app route (predict) because the third app route html was needed to see if the form submitted the data properly.

I wrapped up the predict and homepage html, and then, I focused mainly on wrapping up the smaller tasks such as password implementation and writing new values to the database. I reiteratively tested the Python file while making these changes to ensure that the entire app worked properly.

1. **What did you enjoy the most about this project and what were the challenges?**

My favorite part of the project was seeing how data could be transferred or returned between multiple app routes and local database files. By seeing this data manipulation in the project, I was able to more abstractly visualize how I can more creatively engineer predictive models or data in the future.

The only main challenges I encountered during the project were issues regarding data variables not being passed properly or data being instantiated as a wrong data type. However, these challenges were useful to practice the passing of variables between different data storage types.

Overall the project was a fun challenge to wrap together html, flask applications, and model building.