*# -\*- coding: utf-8 -\*-*

"""Untitled5.ipynb

Automatically generated by Colab.

Original file is located at

https://colab.research.google.com/drive/1cJPKo6RZjSmOQnEC6E6M6EkvO\_R37WvL

"""

*import* streamlit *as* st

*import* pandas *as* pd

*from* sklearn.model\_selection *import* train\_test\_split

*from* sklearn.linear\_model *import* LinearRegression, Lasso, Ridge

*from* sklearn.ensemble *import* RandomForestRegressor

*import* numpy *as* np

df = pd.read\_csv("/Users/gamingspectrum24/Documents/University Coursework/6th Semester/Application of ML in Industries/Lab/House-Price-Prediction/Data/train.csv")

*# Selecting relevant columns*

features = ['OverallQual', 'GrLivArea', 'YearBuilt', 'LotArea', 'TotalBsmtSF', 'SalePrice']

df\_selected = df[features]

X = df\_selected.drop('SalePrice', axis=1)

y = df\_selected['SalePrice']

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.2, random\_state=42)

*# Linear Regression*

lr\_model = LinearRegression()

lr\_model.fit(X\_train, y\_train)

*# Lasso Regression*

lasso\_model = Lasso()

lasso\_model.fit(X\_train, y\_train)

*# Ridge Regression*

ridge\_model = Ridge()

ridge\_model.fit(X\_train, y\_train)

*# Random Forest Regression*

rf\_model = RandomForestRegressor()

rf\_model.fit(X\_train, y\_train)

*def* predict\_price(model, inputs):

input\_data = np.array(inputs).reshape(1, -1)

*return* model.predict(input\_data)[0]

st.title('House Price Prediction App')

*# Input components for user input*

overall\_qual = st.slider('Overall Quality', min\_value=1, max\_value=10, value=5)

grliv\_area = st.number\_input('GrLivArea', min\_value=0, step=1)

year\_built = st.number\_input('Year Built', min\_value=1800, step=1)

lot\_area = st.number\_input('Lot Area', min\_value=0, step=1)

total\_bsmt\_sf = st.number\_input('Total Bsmt SF', min\_value=0, step=1)

*# Predictions*

lr\_prediction = predict\_price(lr\_model, [overall\_qual, grliv\_area, year\_built, lot\_area, total\_bsmt\_sf])

lasso\_prediction = predict\_price(lasso\_model, [overall\_qual, grliv\_area, year\_built, lot\_area, total\_bsmt\_sf])

ridge\_prediction = predict\_price(ridge\_model, [overall\_qual, grliv\_area, year\_built, lot\_area, total\_bsmt\_sf])

rf\_prediction = predict\_price(rf\_model, [overall\_qual, grliv\_area, year\_built, lot\_area, total\_bsmt\_sf])

*# Display predictions*

st.subheader('Predictions:')

st.write(*f*'Linear Regression Prediction: ${lr\_prediction*:.2f*}')

st.write(*f*'Lasso Regression Prediction: ${lasso\_prediction*:.2f*}')

st.write(*f*'Ridge Regression Prediction: ${ridge\_prediction*:.2f*}')

st.write(*f*'Random Forest Regression Prediction: ${rf\_prediction*:.2f*}')

