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Batch code: **LISUM16**
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Submitted to: https://github.com/mussb00/flaskdeployment

1) Creating the simple model

```
# train test split
from sklearn.model_selection import train_test_split

y = price_data.loc[:, "price"]
X = price_data.drop(columns=["price"])
X_train, X_test, y_train, y_test = train_test_split(X, y, random_state=0)


Run Cell | Run Above | Debug Cell
# In[54]:


from sklearn.impute import SimpleImputer

# Imputation
my_imputer = SimpleImputer()
imputed_X_train = pd.DataFrame(my_imputer.fit_transform(X_train))
imputed_X_valid = pd.DataFrame(my_imputer.transform(X_test))


Run Cell | Run Above | Debug Cell
# In[59]:


lr = LinearRegression()
lr.fit(imputed_X_train, y_train)
```

2) Serialise the model using pickle into a suitable format for storage

```
with open("lr.pickle", "wb") as model:
    pickle.dump(lr, model)
    print("Object serialised, pickling completed")
```

3) Create flask application

```
app = Flask(__name__)
```

4) Deserialize model so it can be used

```
with open('lr.pickle', 'rb') as lr:
    model=pickle.load(lr)
```

5) Create html templates

```
@app.route('/predict', methods=['POST'])
def predict():
    int_features = [int(x) for x in request.form.values()]
    final_features=[np.array(int_features)]
    prediction=model.predict(final_features)

    output=round(prediction[0], 2)

    # arguments will be called on the webpage
    return render_template('index.html', prediction_text=f'House price should be {output}')

if __name__ == "__main__":
    app.run(port=5000, debug=True)
```

6) Create forms using templating and inheritance in flask

```
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>House Price Predictor</title>
</head>

<body>
    <h1>House Price Predictor</h1>
    <form action="/predict" method="post">
        <p>area</p>
        <p><input type="text" name="area">></p>
        <p>house age</p>
        <p><input type="text" name="house_age">></p>
        <p><input type="submit" value="submit">></p>
        {% if prediction_text %}
        <h1>{{ prediction_text }}</h1>
        {% endif %}
    </form>
</body>

</html>
```

7) Run server and test locally that it works

```
er)
$ python app.py
 * Serving Flask app 'app' (lazy loading)
 * Environment: production
   WARNING: This is a development server. Do not use it in a production deployment.
   Use a production WSGI server instead.
 * Debug mode: on
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 269-898-482
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

8) Test it works

House Price Predictor

area

50

house age

100

submit

House price should be 100375.49