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Group: ML_Group2

Task 6

Responsibilities



□ Backend architecture setup (Django project & app)



⚡ Model integration using pickle



🌐 URL routing



📁 Frontend-template connection via views



⚙️ Input/output handling and prediction display


Backend Workflow







- User Input → Django View → Model (Pickle) → Prediction Output → HTML Template



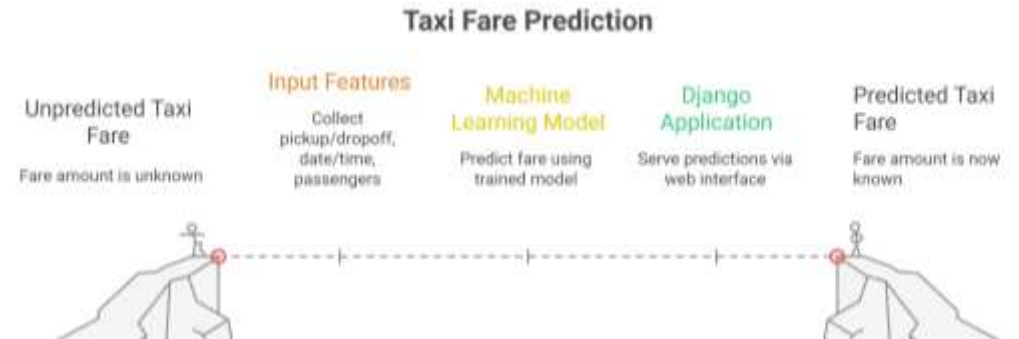
Output Preview

Predicted Fare: \$10.98

 Fare Prediction System
Enter your trip details to get an accurate fare estimate

<div><div> Location Information</div><div>Pickup Longitude: <input type="text" value="-73.935242"/></div><div>Pickup Latitude: <input type="text" value="40.730610"/></div><div>Dropoff Longitude: <input type="text" value="-73.935242"/></div><div>Dropoff Latitude: <input type="text" value="40.758896"/></div></div>	<div><div> Trip Details</div><div>Passenger Count: <input type="text" value="2"/></div><div>Distance (miles): <input type="text" value="2.5"/></div><div>Bearing (degrees): <input type="text" value="45.0"/></div></div>	<div><div> Time Information</div><div>Hour (0-23): <input type="text" value="14"/></div><div>Day (1-31): <input type="text" value="15"/></div><div>Month (1-12): <input type="text" value="8"/></div><div>Weekday (0-6): <input type="text" value="3"/></div><div>Year: <input type="text" value="2024"/></div></div>
<div><div> Airport Distances</div><div>JFK Distance: <input type="text" value="15.2"/></div><div>EWR Distance: <input type="text" value="12.8"/></div><div>LGA Distance: <input type="text" value="8.5"/></div><div>SOL Distance: <input type="text" value=""/></div></div>	<div><div> Time Indicators</div><div>Is Weekend (0/1): <input type="text" value="0"/></div><div>Rush Hours (0/1): <input type="text" value="0"/></div></div>	<div><div> Car Condition</div><div><input type="text" value="0"/> Excellent</div><div><input type="text" value="0"/> Good</div><div><input type="text" value="0"/> Very Good</div></div>

Project Overview

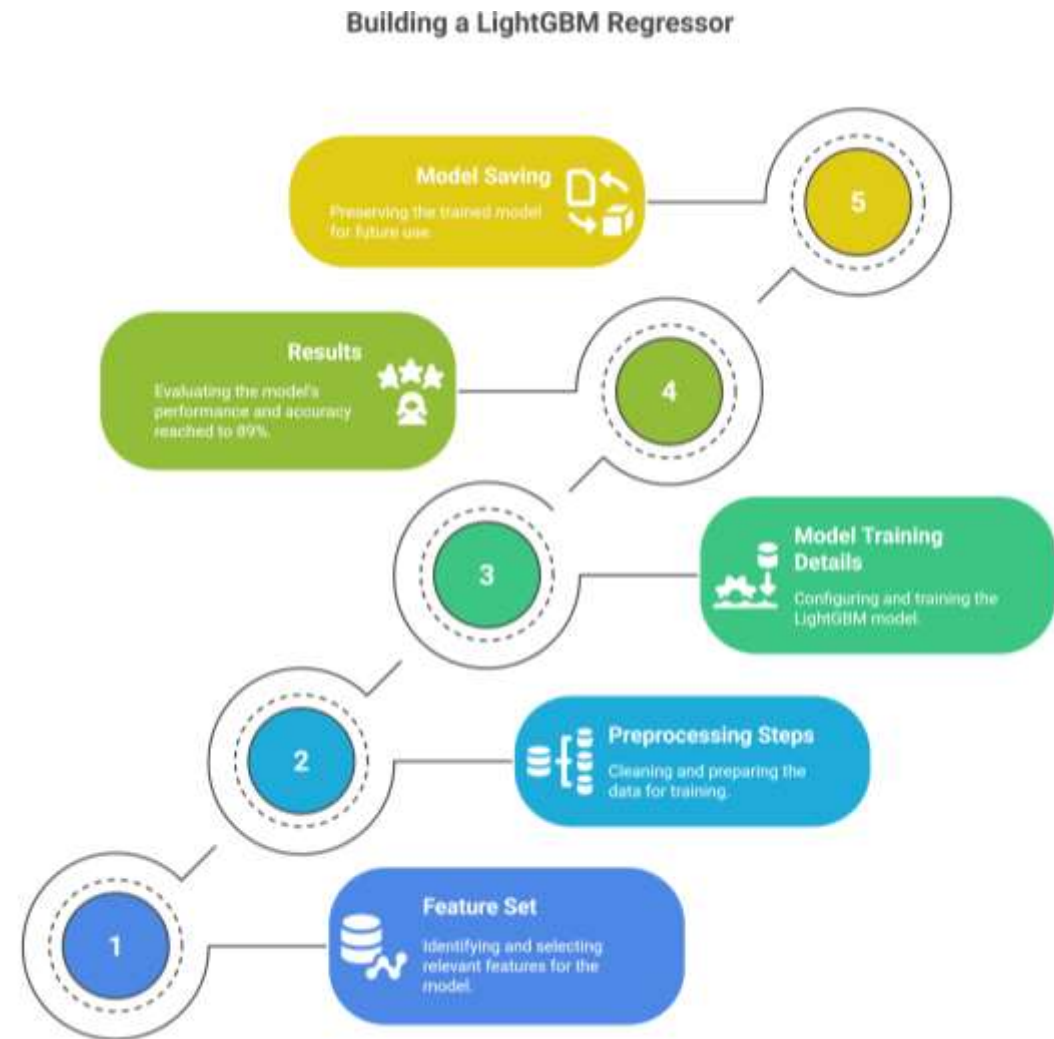


Data Preprocessing & Feature Engineering

- Preprocessing ensures data quality by **removing outliers, handling missing values, encoding categories,** and engineering key features like trip distance – all critical for accurate fare prediction.



Machine Learning Modeling: LightGBM Regressor

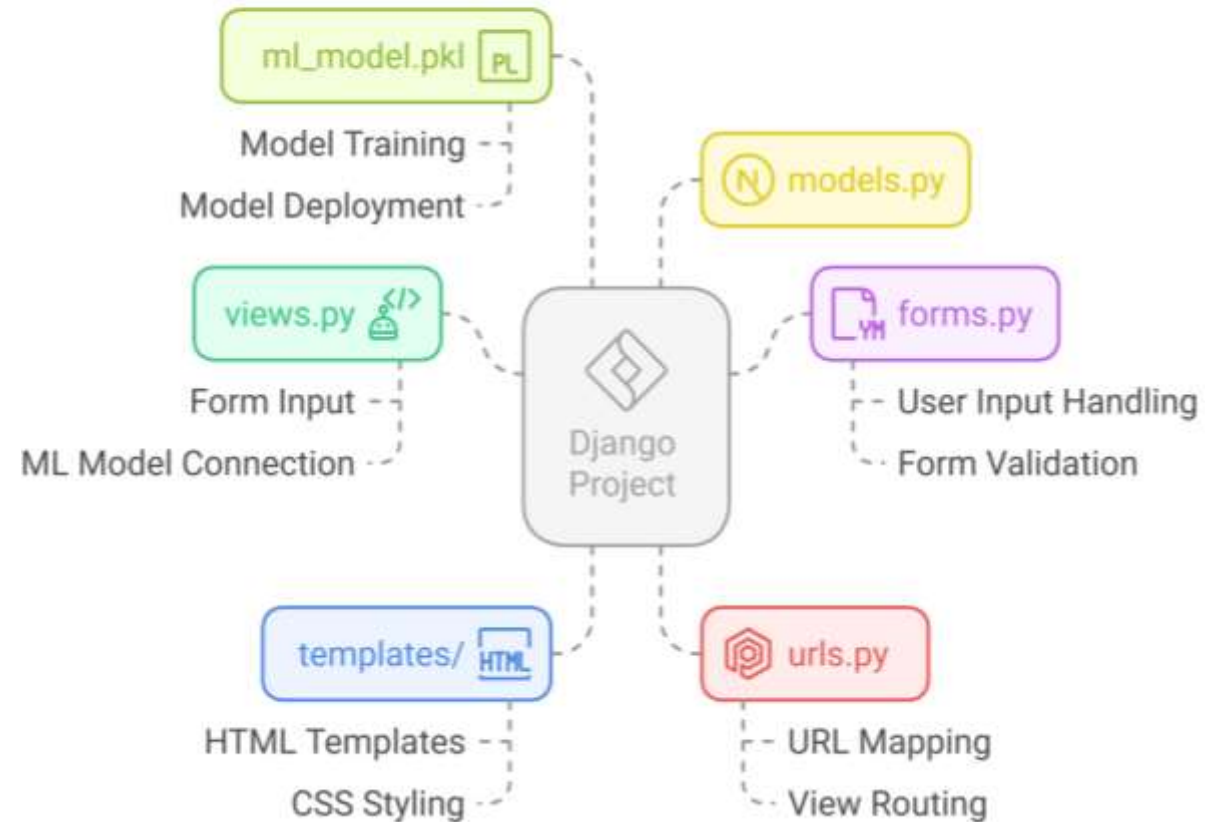


Django Web Application

➤ Project Structure:

- fare_prediction → Main Django project
- Predictor → App that handles ML & views

Django Project Structure and Components



Web App Works (Flow Diagram)

