**INTERNATIONAL INSTITUTE OF MEDICAL SCIENCE & TECHNOLOGY COUNCIL**

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**Machine Learning Crash Course Assignment**

# Title: Predicting House Prices using Machine Learning

Objective:

Build a simple supervised machine learning regression model using the California Housing dataset from scikit-learn, evaluate it using appropriate metrics, and deploy it with a minimal Streamlit app for predicting housing prices.

**Task Breakdown**

# 1. Data Loading & Preprocessing

* Load the California Housing dataset using sklearn.datasets.fetch\_california\_housing- Convert it into a pandas DataFrame
* Explore the dataset:
* Show feature descriptions and dataset shape
* Plot histograms or pairplots
* Apply normalization or scaling if needed

# 2. Model Building

* Use LinearRegression or RandomForestRegressor from scikit-learn
* Train with 80-20 train-test split
* Evaluate using MAE, MSE, R² Score

# 3. Streamlit App Deployment

* Create a simple UI with input fields for features
* Add a Predict button
* Display prediction and model metrics

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## 4. Documentation

- README.md or PDF with:

* Project summary
* Streamlit usage instructions
* Metrics explanation
* Screenshot of Streamlit app

## Bonus Suggestions

* Add feature importance chart
* Use GridSearchCV for hyperparameter tuning
* Save the model using joblib or pickle

## Deliverables

* Jupyter Notebook / Python script
* app.py for Streamlit
* requirements.txt
* Documentation (Markdown or PDF)
* Optional: .pkl or .joblib model file

**Deadline**

**31/07/2025**

## Evaluation Criteria

Model correctness & performance - 30%

Code structure & readability - 20%

Streamlit UI functionality - 20%

Documentation clarity - 20%

Bonus implementation - 10%

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