## 1. Fruits-360 Classification

## - Dataset Information

Dataset: Fruits-360 Original Size

Image Size Used: 50x50 RGB

Feature Vector Size: 7500

Total Samples Used: 2000

Train/Test Split: 80% / 20%

Labels: Extracted automatically from dataset folders

## 2. Fruits Classification

## - Implementation Details

Feature Extraction: Resize → RGB → Flatten → Normalize

Logistic Regression: max\_iter = 900, learning rate = 0.1, epochs = 150

K-Means: n\_clusters = number of fruit classes, random\_state = 42

No cross-validation used

## 3. Fruits Classification

## - Results

Included Metrics:

- Logistic Regression Accuracy

- K-Means Accuracy

- Confusion Matrices

- Loss Curves

- ROC Curves

## 4. Insurance Prediction

## - Dataset Information

Dataset: insurance.csv

Features: age, bmi, children, smoker, region...

Target: charges

No missing values

One-hot encoding applied

Train/Test Split: 80% / 20%

## 6. Insurance Prediction

## - Implementation Details

Scaling: StandardScaler

Linear Regression: Ordinary Least Squares

KNN: n\_neighbors = 5

## 7. Insurance Prediction

## - Results

Metrics:

- MSE

- RMSE

- R² Score

Plot: Actual vs Predicted (LR and KNN)