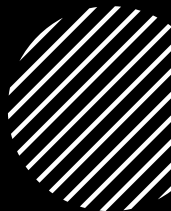# Diabetes Prediction using Machine Learning

Title: Diabetes Prediction Using Machine Learning

Subtitle: A Machine Learning Approach to Assist Healthcare

Your Name & Roll Number (if applicable)

Date

Slide 1: Abstract

Goal: Predict diabetes using machine learning models.

Key Points:

Dataset: PIMA Indian Diabetes Dataset.

Models: Logistic Regression, Random Forest, SVM, KNN.

Logistic Regression chosen for simplicity and efficiency.

Impact: Aims to assist in early diabetes detection.

Slide 2: Introduction

What is Diabetes?

A chronic condition affecting millions globally.

Why Machine Learning?

Provides accurate, data-driven predictions.

Objective: Build a model to identify individuals at risk.

Slide 3: Methodology

Steps Taken:

Data collection and preparation.

Data cleaning (handling missing values).

Feature scaling and preprocessing.

Model selection and training.

Evaluation using metrics like accuracy, precision, and recall.

Tools Used: Python, pandas, numpy, sklearn, matplotlib, seaborn.

Slide 4: Experimental Results

Models Tested: Logistic Regression, Random Forest, SVM, KNN.

Results Overview:

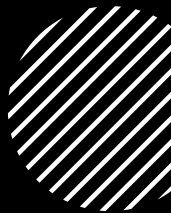Logistic Regression Accuracy: ~73%

Precision, Recall, and F1-scores discussed.

Visuals: Include a confusion matrix and bar graph of model comparisons.

**Slide 5:
Hardware/Software
Requirements**

Hardware:

Processor: Intel i5 or equivalent.

RAM: 8GB minimum.

Storage: 20GB free disk space.

Software:

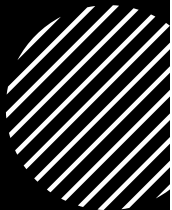Python 3.9+ with required libraries.

IDE: Google Colab or Jupyter Notebook.

Slide 6: Conclusion

Key Points:

Logistic Regression selected for its efficiency and interpretability.

Machine learning demonstrates significant potential in healthcare.

Predictive modeling can aid early detection and reduce complications.

Slide 7: Future Scope

Enhancements:

Include more features (e.g., cholesterol, physical activity).

Explore deep learning for better predictions.

Deploy the model into a real-world healthcare application.

Slide 8: GitHub Link

Add the GitHub repository link.

Mention included materials: code, dataset (if allowed), README, PPT