



# **CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, Bhilai**

## **VOCATIONAL TRAINING PRESENTATION**

**On**

**MULTIPLE DISEASE PREDICTION SYSTEM**

**At**

**Edunet Foundation**

**Presented By:-**

**Course: B.Tech(Hons.) in CSE(AI)**

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**Sem.- 5th**

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# INTRODUCTION

- AI-powered medical screening application
- Predicts **Diabetes, Heart Disease & Parkinson's**
- Uses pre-trained ML models with medical datasets
- Web application developed using **Streamlit**
- Provides quick and accessible disease risk estimation

# OBJECTIVES

- To develop a unified platform for predicting 3 diseases
- Achieve accuracy range of **75–87%**
- Provide easy user interface through Streamlit
- Perform prediction in real-time
- Maintain scalability and modular architecture

# PROBLEM STATEMENTS

Existing medical diagnosis issues:

- Costly laboratory tests
- Long waiting time for reports
- Limited accessibility in rural areas
- No early screening facility

**Solution:** Fast, accurate and accessible ML-based risk prediction system

# TECHNOLOGY USED

1. **Programming Language:** Python
2. **Libraries:** NumPy, Pandas, Scikit-Learn
3. **GUI/Deployment Framework:** Streamlit
4. **Model Storage:** Pickle
5. **Tools:** VS Code, Git, GitHub, Google Colab
6. **GithubLink:** [https://github.com/Kishlay671/Multiple\\_Disease\\_Prediction\\_System](https://github.com/Kishlay671/Multiple_Disease_Prediction_System)



# DATASETS & ML MODELS

## Datasets Used:(From Kaggle)

- Diabetes: Pima Indians Dataset
- Heart Disease: Cleveland Dataset
- Parkinson's: UCI Dataset

## Machine Learning Models:

- SVM (RBF kernel) → Diabetes & Parkinson's
- Logistic Regression → Heart Disease

# SYSTEM ARCHITECTURE & WORKFLOW

## Architecture:

- UI Layer (Streamlit)
- Processing Layer (Validation & ML Logic)
- Data Layer (Saved Models)

## Workflow:

1. User Inputs Data
2. Preprocessing & Validation
3. ML Model Prediction
4. Output Display with Interpretation

# RESULT & ANALYSIS

The screenshot shows a web browser window with the URL `localhost:8501/#diabetes-prediction-using-ml`. On the left is a sidebar menu titled "Multiple Disease Prediction System" with three options: "Diabetes Prediction" (highlighted in red), "Heart Disease Prediction", and "Parkinsons Prediction". The main content area is titled "Diabetes Prediction using ML" and contains a form with the following fields: "Number of Pregnancies", "Glucose Level", "Blood Pressure Level", "Skin Thickness Level", "Insulin Level", "BMI Value", "Diabetes Pedigree Function value", and "Age of the Person". Below the form is a "Diabetes Test Result" button and a green bar representing the prediction output.

The screenshot shows a web browser window with the URL `localhost:8501/#diabetes-prediction-using-ml`. The sidebar menu is the same as in the previous screenshot, but "Heart Disease Prediction" is now highlighted in red. The main content area is titled "Heart Disease Prediction using ML" and contains a form with the following fields: "Age", "Sex (1=Male, 0=Female)", "Chest Pain Type (0-3)", "Resting Blood Pressure", "Serum Cholesterol", "Fasting Blood Sugar >120 mg/dl (1=True, 0=False)", "Resting ECG (0-2)", "Max Heart Rate", "Exercise Induced Angina (1=Yes, 0=No)", "ST Depression", "Slope of ST segment", "Major Vessels (0-3)", and "Thalassemia (1=normal, 2=fixed, 3=reversible)". Below the form is a "Heart Disease Test Result" button and a green bar representing the prediction output.

The screenshot shows a web browser window with the URL `localhost:8501/#diabetes-prediction-using-ml`. The sidebar menu is the same as in the previous screenshots, but "Parkinsons Prediction" is now highlighted in red. The main content area is titled "Parkinsons Disease Prediction using ML" and contains a form with the following fields: "MDVP-Fo(Hz)", "MDVP-Shimmer", "RPDE", "MDVP-Fn(Hz)", "MDVP-Shimmer(dB)", "DFA", "MDVP-Fo(Hz)", "Shimmer:APQ3", "spread1", "MDVP-Jitter(%)", "Shimmer:APQ5", "spread2", "MDVP-Jitter(Abs)", "MDVP-APQ", "D2", "MDVP-RAP", "Shimmer:DDA", "PPE", "MDVP-PPQ", "NHR", and "Jitter:DDP", "NHR". Below the form is a green bar representing the prediction output.

## Accuracy of Prediction Models:

- Diabetes → **75.3%**
- Heart Disease → **81.8%**
- Parkinson's → **87.2%**

## Performance:

- Real-time prediction ( $<0.1s$ )
- Accurate and consistent results across multiple cases

# CONCLUSION & FUTURE ENHANCEMENT

## **Conclusion:**

- Developed a functional multi-disease prediction web app
- Highly accessible and fast health risk estimation tool
- Reliable prediction with good accuracy

## **Future Enhancements:**

- Probability scores & risk visualization
- Add more diseases (Kidney, Liver, Cancer)
- Mobile App UI and cloud database integration

An aerial photograph of a modern university campus. The central feature is a large, multi-tiered fountain with water spraying upwards. Surrounding the fountain are several large, multi-story buildings with a mix of brick and glass facades. Some buildings have green roofs. The campus is landscaped with trees and walkways. In the background, a body of water and a city skyline are visible under a clear sky.

Thank you!