RCOEM
Shri Ramdeobaba College of Engineering and Management, Nagpur

CARDIAB: CVD AND DIABETES PREDICTION USING MACHINE LEARNING

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INTRODUCTION

Arduous times like today's require utmost medical attention by people of majorly all age groups. Cardiovascular diseases and diabetes. hold a powerful significance in the effect of Covid-19 disease. As these diseases have various contributory risk factors involved, they are more difficult to predict.

OBJECTIVE

The focus of our project is to help users determine the chances of a person having diabetes or a CVD, suggest precautionary measures and generate a report for the same.

MATERIALS & METHODS

Implementation
The web portal consists of the following:

1. Home Page: This will display both the sections of CVD and diabetes prediction. The user will select either of the two options, CVD or diabetes.
2. CVD/Diabetes Prediction Page: User will enter the health attributes in the units specified.
3. CVD/Diabetes Results Page: Results of the prediction will be displayed here. A Generate Report button will lead to the report generation form.
4. Report Generation Form: User will enter the desired details and will receive the report on entered email id on submission

Technologies used:
Flask, CSS, HTML, VS Code, Heroku

RESULTS

Supervised machine learning algorithms namely, K nearest neighbour, support vector machines, logistic regression and random forest classifier are trained on two different datasets. Efficiency of the result is successfully improved by hyperparameter tuning. After rigorous training of the models, logistic regression for the diabetes dataset and KNN for the cardiovascular dataset are used to predict the probabilities of a person having the disease. The model is deployed on Heroku and the report generation is also done successfully.

CONCLUSION

Our application aimed at predicting the probability of a person having a CVD or diabetes and helped the patients take necessary precautions irrespective of the result. It used two different datasets for the prediction of CVD and Diabetes respectively. The model is deployed on Heroku. The result is used to generate and send a lab report to the patient.

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