HEART DISEASE PREDICTION USING ML MODELS

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Problem Statement

a) The problem addressed in the project.
b) Provide a basic introduction of the project and also an overview of scope it entails.

Background

Describe the inferences drawn from the Literature Review.

Dataset and Features / Project Requirements / Product Features

a) Describe the dataset along with its features and processing.
b) List of requirements
c) Product features.

Design Approach / Methods

a) Describe the methodology / approach
b) Constraints, Dependencies and assumptions
c) Figure of selected design
d) Provide the model summary

Results and Discussion

a) Brief explanation on testing and evaluation activities with images.

b) Results obtained can be displayed in graphs/charts/tabular.

Summary of Project Outcome

Write a summary of the project outcome whether the initial estimates are the same as that of the results achieved.

Conclusions and Future Work

a) Summarize the key points.
b) Provide a glimpse of Future work.

References

Provide references in IEEE style.
(Mention any two references)

Problem Statement	Design approach/Methods	Dataset Features
The basic intention of the project is to predict heart disease or problem of the patient.	To collect the dataset of patients, pre-processing of attributes, training and testing will be done. Later feature extraction will be done using DBSCAN and SMOTTEENN is used for data balancing.	In this project statlog and Cleveland dataset is used for implementation.In this dataset there are totally 12 attributes.
This project will be useful for clinicians or doctors to have complete data of patients.	Comparison study will be done with proposed model with another ML model.	**Results and discussions**
Background Through GridSearchCV with fivefold cross-validation technology, all characteristics of the data set are concentrated on four machine learning classifiers in this examination. Only 30% of the fivefold CV was examined, whereas 70% was utilized to train the classifier. Finally, the fivefold technique's normal measurement result is obtained. A number of boundary assessments have also passed the classifier.	Later, both models will be deployed into confusion matrix to compare which model will be getting highest accuracy value will be considered as resultant	The result that is showing that the proposed model XGBOOST is posing highest value in both with logistic regression and in deploying with confusion matrix.Before this preprocessing of data, feature selection and removal with balancing of attributes in the dataset is done.
Summary of project outcome After carrying out in this extensive literature survey, findings with respect to review and evaluation are as follows by implemented with proposed model with another model for comparison for predicting heart disease. Finally getting with accurate result of models.	**Conclusion and future work** The ability of identifying exactly how many people are having disease and how many are not having through dataset using confusion matrix along with comparison study of proposed model with another. In further work planning to create web-based app by introducing a web API that predicts heart disease. In this supposed to use Django for the web framework and the form for form	**References** [1] N. L. Fitriyani, M. Syafrudin, G. Alfian and J. Rhee, "HDPM: An Effective Heart Disease Prediction Model for a Clinical Decision Support System," in IEEE Access, vol. 8, pp. 133034-133050, 2020, doi: 10.1109/ACCESS.2020.3010511. [2] G. N. Ahmad, H. Fatima, S. Ullah, A. Salah Saidi and Imdadullah, "Efficient Medical Diagnosis of Human Heart Diseases Using

	validation.In this it will be having Login Page,Signup page ,Predict Heart Disease Page, Filled Prediction page,Prediction result Page ,About Us Page , Admin Login and Admin dashboard.	Machine Learning Techniques With and Without GridSearchCV," in IEEE Access, vol. 10, pp. 80151-80173, 2022, doi: 10.1109/ACCESS.2022.3165792. [3] D. Bertsimas, L. Mingardi and B. Stellato, "Machine Learning for Real-Time Heart Disease Prediction," in IEEE Journal of Biomedical and Health Informatics, vol. 25, no. 9, pp. 3627-3637, Sept. 2021, doi: 10.1109/JBHI.2021.3066347. [4] J. P. Li, A. U. Haq, S. U. Din, J. Khan, A. Khan and A. Saboor, "Heart Disease Identification Method Using Machine Learning Classification in E-Healthcare," in IEEE Access, vol. 8, pp. 107562-107582, 2020, doi: 10.1109/ACCESS.2020.3001149. [5] C. Thirumalai and G. Srivastava, "Effective Heart Disease Prediction Using Hybrid Machine Learning Techniques," in IEEE Access, vol. 7, pp. 81542-81554, 2019, doi: 10.1109/ACCESS.2019.2923707. [6] Mythili, T. et al. “A Heart Disease Prediction Model using SVM-Decision Trees-Logistic Regression (SDL).” International Journal of Computer Applications 68 (2013): 11-15. [7] D. P. Yadav, P. Saini and P. Mittal, "Feature Optimization Based Heart Disease Prediction using Machine Learning," 2021 5th International Conference on Information Systems and Computer Networks (ISCON),

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