HEART DISEASE PREDICTION

INTRODUCTION:-Heart disease describes a range of conditions that affect your heart. Today, cardiovascular diseases are the leading cause of death worldwide with 17.9 million deaths annually, as per the World Health Organization reports [1]. Various unhealthy activities are the reason for the increase in the risk of heart disease like high cholesterol, obesity, increase in triglycerides levels, hypertension, etc.

ABSTRACT:- The correct prediction of heart disease can prevent life threats, and incorrect prediction can prove to be fatal at the same time. In this paper different machine learning algorithms and deep learning are applied to compare the results and analysis of the UCI Machine Learning Heart Disease dataset. The dataset consists of 14 main attributes used for performing the analysis. Various promising results are achieved and are validated using accuracy and confusion matrix. The dataset consists of some irrelevant features which are handled using Isolation Forest, and data are also normalized for getting better results. And how this study can be combined with some multimedia technology like mobile devices is also discussed. Using deep learning approach, 94.2% accuracy was obtained

WORKING :-

* **Electrocardiogram (ECG or EKG).** This first test done to diagnose a heart attack records electrical signals as they travel through the heart. Sticky patches (electrodes) are attached to the chest and sometimes the arms and legs. Signals are recorded as waves displayed on a monitor or printed on paper. An electrocardiogram (ECG) can show if you are having or have had a heart attack.
* **Blood tests.** Certain heart proteins slowly leak into the blood after heart damage from a heart attack. Blood tests can be done to check for these proteins (cardiac markers).
* **Chest X-ray.** A chest X-ray shows the condition and size of the heart and lungs.
* **Echocardiogram.** Sound waves (ultrasound) create images of the moving heart. This test can show how blood moves through the heart and heart valves. An echocardiogram can help identify whether an area of your heart has been damaged.
* **Coronary catheterization (angiogram).** A long, thin tube (catheter) is inserted into an artery, usually in the leg, and guided to the heart. Dye flows through the catheter to help the arteries show up more clearly on images made during the test.
* **Cardiac computed tomography (CT) or Magnetic resonance imaging (MRI).**  These tests create images of the heart and chest. Cardiac CT scans use X-rays. Cardiac MRI uses a magnetic field and radio waves to create images of your heart. For both tests, you usually lie on a table that slides inside a long tubelike machine. Each test can be used to diagnose heart problems. They can help show the severity of heart damage.

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