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**Topic:** Stroke Prediction

**Course:** Artificial Intelligence

# Introduction:

In this machine learning project, we want to create a stroke prediction model utilizing K-nearest neighbors (KNN) and decision trees, two well-liked methods. A serious medical disease called a stroke can cause permanent impairments and even death. By enabling prompt therapies and preventative actions, early identification and precise prediction of stroke can greatly improve patient outcomes.

Our study focuses on applying machine learning algorithms to a dataset that contains many parameters connected to people, including age, gender, hypertension, heart disease, smoking status, and other pertinent factors. We seek to develop prediction algorithms that can precisely categorize whether a person is at risk of having a stroke or not by training our models on this dataset.

# AI Techniques:

In this research, Decision Tree and K-Nearest Neighbors are two AI approaches used. Powerful algorithms called decision trees build a tree-like description of decisions and potential outcomes. Decision trees can learn patterns and anticipate outcomes by segmenting the information based on several parameters. K-nearest Neighbors, on the other hand, is a non-parametric technique that categorizes data points by taking into account the classes of their closest neighbors.

The goal of integrating these two algorithms is to make use of each one's advantages and produce a reliable stroke prediction model. Our understanding of the significance of various characteristics in stroke prediction will be aided by the decision tree method, while a flexible and adaptable classification strategy will be offered by KNN.

# Goal:

The goal of this project is to create a precise and dependable stroke prediction system, which will benefit the healthcare industry. The ultimate objective is to help healthcare practitioners identify people who could be at a high risk of having a stroke, enabling prompt treatments and individualized care.