

## **Project Report – [Diabetes Prediction]**

**Group Name :** GCEE - Tensorflow

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### **1. Abstract**

Diabetes is one of the chronic disease that causes blood sugar levels to rise .The factors that are used to identify the diabetes are age ,BMI(body mass index),insulin and glucose levels.

The aim of this project is to create a model that can reliably predict the accuracy of diabetes in patients in India.

### **2. Model -SUPERVISED LEARNING**

These classifier models are used for developing the Machine Learning Project.

- ❖ Support Vector Machine
- ❖ K Nearest neighbors Classifier
- ❖ Decision Tree Classifier
- ❖ Naive Bayes Classifier

### **3. Algorithm Implementation**

We used the above mention models to predict accuracy for patient's data using our Diabetes prediction model.Each model resulted in different accuracies. Among them, SVM has the highest accuracy.

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#### 4. Predication Comparison Report

##### Accuracy score for Training data:

- SVM - 0.7719869706840391
- KNN - 0.8355048859934854
- DECISION TREE - 1.0
- NAIVE BAYES - 0.7654723127035831

##### Accuracy score for Testing data:

- SVM - 0.7662337662337663
- KNN - 0.7467532467532467
- DECISION TREE - 0.7337662337662337
- NAIVE BAYES - 0.7597402597402597

#### 5. Final Prediction

Support Vector Machine worked well by giving the correct outputs (ie.,the patient has diabetes or not) for the given inputs when compared with other classifier models.

#### 6. Conclusion

Diabetes prediction using machine learning represents a significant advancement in medical diagnostics, offering the potential for early detection and improved patient outcomes. The application of ML algorithms, such as decision trees, support vector machines, neural networks, and ensemble methods, has shown promising results in predicting the likelihood of diabetes based on various risk factors including age, BMI, blood pressure, and family history.