

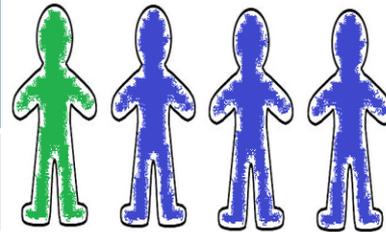


Diabetes Prediction



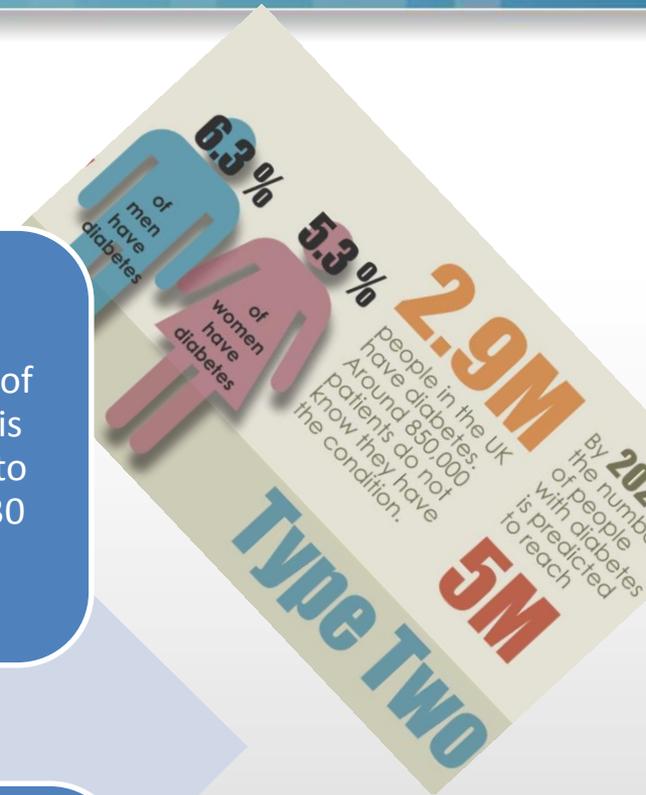
Diabetes is a major public health problem in the world

The total number of diabetic patients is expected to soar to 366 million in 2030

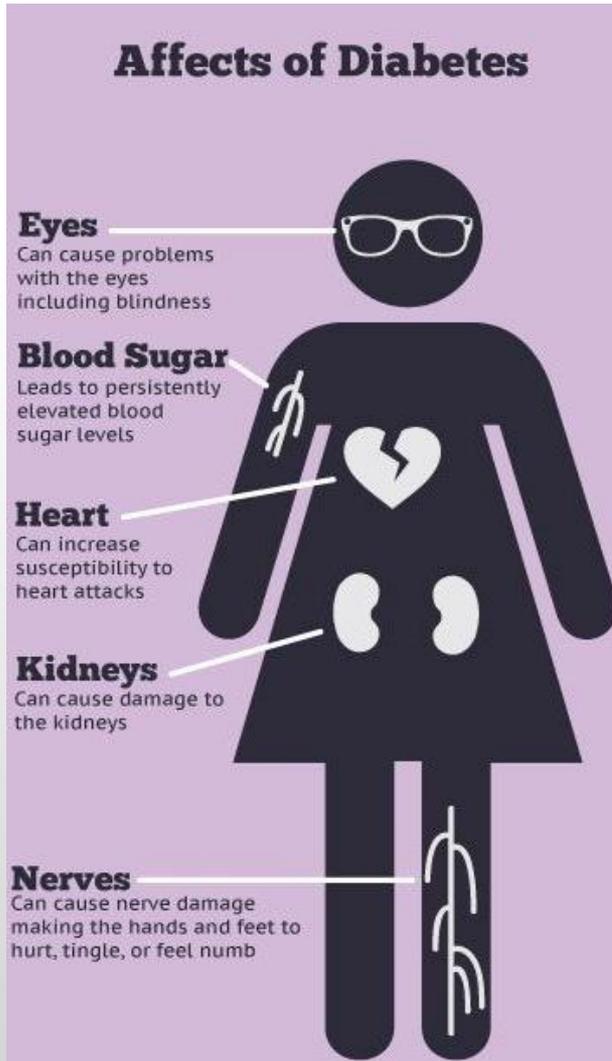


1.7 million people 20 years and older were diagnosed with diabetes in 2012 alone!

Detailed information about the prevalence and demographics of diabetes are important for health care providers to take suitable approaches



PROBLEM STATEMENT



To predict the onset of diabetes amongst women aged at least 21 using binary classification and compare the results

The model can be used by the endocrinologists, dietitians, ophthalmologists and podiatrists to predict if or if not the patient is likely to suffer from diabetes, if yes, how intense it could be.

The dataset consists of 8 features comprising the medical details of the patients that are useful in determining the health condition of the patient.

The 8 Important Features: Clinically non-invasive & biomarkers

The train data consists of 691 entries and the test data has 77 entries

This is a binary classification problem where 1 indicates that the patient is likely to suffer from diabetes and 0 indicates that the patient may not suffer

Two Class Boosted Decision Tree and Two Class Decision Jungle have been used to train the model on the 8 features, and the results are compared



No. of Pregnancies



Age



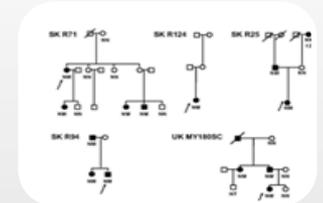
Skin Thickness



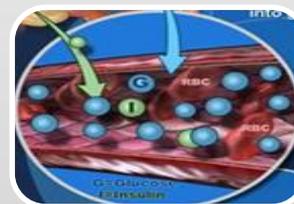
Blood Pressure



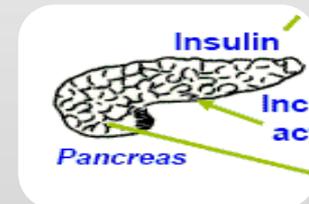
BMI



Diabetes Pedigree Function



Glucose Conc.

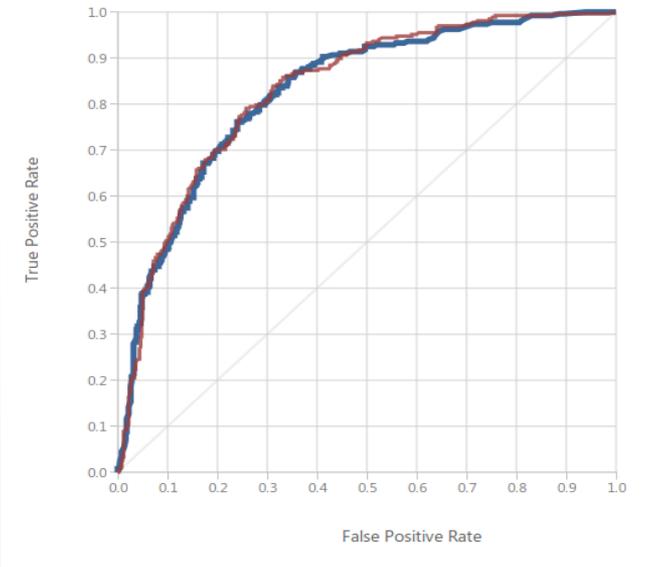


Insulin Level

RESULTS

The results are obtained as follows:

	Two Class Boosted Decision Tree	Two Class Decision Jungle
Accuracy	76.8	77.2
Specificity	81.2	80.4
Sensitivity	63.8	61.2
AUC	82.8	83.2
Kappa	48.3	48.4



Using a combination of various Clinical non-invasive and biomarkers, Predictive Modeling techniques can thus:

Identify people at high risk of developing diabetes & provide timely intervention in its treatment to the young, especially women

Healthcare systems can help prevent early deaths and lower health risks by engaging such predictive techniques

Targeted prevention strategies can be planned to ensure proper efforts to be taken for prevention in individuals at high risk