**Case study of  diabetic patients**

**Problem Statement**

Diabetes is diagnosed with fasting sugar blood tests or with A1c blood tests, also known as glycated hemoglobin tests. A fasting blood sugar test is performed after you have had nothing to eat or drink for at least eight hours. In most cases, if **glucose** (blood sugar) level is equal to or greater than 126 mg/dl (7 mmol/l), the patient can be diagnosed with the disease.

In this study case, patient data was used to predict the likelyhood of a patient being diagnosed with Diabetes Disease. This model can serve as an indicator prior testing.

This dataset consists of multiple independent variables and one dependent variable (Outcome). Independent variables include:

1. Pregnancies: Number of times pregnant
2. Glucose: Plasma Glucose Concentration a 2-hour in an Oral Glucose Tolerance Test (mg/dl).
3. BloodPressure: Diastolic Blood Pressure (mm/Hg).
4. SkinThickness: Triceps Skin Fold Thickness (mm)
5. Insulin: 2-Hour Serum Insulin (mu U/ml)
6. BMI: Body Mass Index (weight in kg/(height in m)^2)
7. DiabetesPedigreeFunction: It provides information about diabetes history in relatives and genetic relationship of those relatives with patients. Higher Pedigree Function means patient is more likely to have diabetes.
8. Age: Age of an individual (years)
9. Outcome: Target Variable (0 or 1) where ‘0’ denotes patient is not diabetic and ‘1’ denotes patient is diabetic.