# MODULES:

1. USER PROFILING
2. VIDEO PROCESSING

* Capturing video from the smartphone camera using flashlight of the fingertip (specifically index finger)

1. EXTRACTING AND REFINING RAW PPG SIGNALS

* Extraction of raw PPG
* Signal preprocessing
* Gaussian filter(removal of high frequency noise)
* Asymmetric Least Squares (data correction and removal of motion interferences)
* Features extraction from preprocessed signals
* Systolic peaks
* Diastolic peaks
* First derivative and second derivative peaks
* Regression Analysis
* Partial Least Square Regression (with lowest error)
* Training of regression model

1. GLUCOSE LEVELS REPORT GENERATION/DOWNLOAD REPORT

* the glucose level data of a particular user is stored and later on , a report can be generated and can be downloaded.

1. EXERCISE/DIET RECCOMENDATION

* Healthy and suitable exercise or diet for diabetic patients is recommended through AI and ML techniques.

1. ESTIMATIMG HBa1C LEVEL/TEST

* HBa1c test is used to estimate the average glucose measure of past three months.
* Calculations performed on sugar data recorded from the smartphone can be used to estimate HBa1c level of a diabetic patient with no cost.

1. DATA ANALYTICS AND VISUALIZATIONS

* Graph and charts would be generated to visualize the glycemic control of a diabetic patient.

1. MEDICATION MANAGEMENT

* User can schedule his/her medication timings (tablets, sugar monitoring and insulin injections)

1. FEEDBACK
2. CHATBOT
3. GENERAL INFORMATION ABOUT DIABETES

* Causes
* Symptoms
* Prevention
* Cure