MONTE CARLO SIMULATION FOR PREDICTION OF WORSENING CONDITIONS OF TYPE 2 DIABETES PATIENTS

***Submitted by Team 9***

Adhithyan V – 2016201002

Lakshmi K - 2016201023

Meenatchi V - 2016201025

Siddhartha Sharma SCI - 2016201042

# **METHODOLOGY**

A python program was written to implement the paper. The simulation was run on Macbook pro with 10 GB RAM and 2.4 GHz intel processor. Python 2.7 was used to develop the source code. Based on 25 real data, Monte Carlo simulation was used to generate additional 975 data, totaling 1000. The simulation was run on 1000 patients.

**ANALYSIS**

The following results were obtained after executing the python program.

* Number of patients who have necrosis due to glucose and depression = 37
* Number of patients who have necrosis due to glucose, overweight and depression = 45
* Number of patients who have necrosis due to overweight and systole blood pressure = 52
* Number of patients who have nephropathy due to overweight and glucose = 19
* Number of patients who have nephropathy due to glucose and systole blood pressure = 17

**INFERENCE**

Thus an ***average of 34 patients is identified for having started either necrosis or nephropathy*** complications which is translated as ***3.4% of data.*** We also see there is more chance of acquiring necrosis than nephropathy.

**Source code, input data, simulated data and other related files of this assignment can be accessed in the following link : https://goo.gl/bokm1v**