1. PREDICTING DIABETICS MELLITUS

1.1 Introduction:

Diabetes mellitus is a chronic disease characterized by hyperglycemia. It may cause many complications. According to the growing morbidity in recent years, in 2040, the world’s diabetic patients will reach 642 million, which means that one of the ten adults in the future is suffering from diabetes. There is no doubt that this alarming figure needs great attention. With the rapid development of machine learning, machine learning has been applied to many aspects of medical health. In this study, we used decision tree, random forest and neural network to predict diabetes mellitus. In order to verity the universal applicability of the methods, we chose some methods that have the better performance to conduct independent test experiments. Due to the data unbalance, we randomly extracted 5 times data. And the result is the average of these five experiments. The results showed that prediction with random forest could reach the highest accuracy (ACC = 0.8084) when all the attributes were used.

1.2 Objectives of Research:

The most important objective is control of total caloric intake to attain and maintain ideal body weight. Obesity is diabetogenic. The diet of children with diabetes should allow them to grow and develop normally. Insulin-dependent diabetics must eat meals on a regular schedule.

1.3 Problem statement:

Statement of the problem Diabetes is a chronic health problem with devastating, yet preventable consequences. It is characterized by high blood glucose levels resulting from defects in insulin production, insulin action, or both.1,2 Globally, rates of type 2 diabetes were 15.1 million in 2000,3 the number of people with diabetes worldwide is projected to increase to 36.6 million by 2030.4 In 2007, 23.6 million people, or 7.8% of the United States population had type 2 diabetes. Of these, 90-95% of these cases were adults with type 2 diabetes. Type 2 diabetes impacts men and women proportionately; there are over 12 million men with diabetes and 11.5 women with diabetes. In adult patients, 6.6% were non Hispanic White, 11.8% were non Hispanic Black, 10.4% were Hispanic, and 7.5% were Asian.1 This rate is expected to increase greatly over the next half century. Along with the increase in incidence of diabetes, both individual and societal expectations concerning the management of diabetes have also increased, with many reports from The Centers for Disease Control (CDC), United States Department of Health and Human Services (USDHHS).

2.Review of Literature

Literature related to life style modification in management of diabetes mellitus . A study to assess type 2 diabetic patients with inadequate glycaemic control on oral hypoglycemic agents (OHA), or a lifestyle intervention programme based on exercise and diet counseling (a) was as effective as insulin treatment in controlling blood glucose, and (b) could prevent the weight gain usually accompanying the introduction of insulin treatment. Thirty eight type 2 diabetic subjects were treated with Oral hypoglycemic agents. Study results showed that, there was no significant difference between the groups in the change observed between start and 12 months of treatment (P = 0.74). There was a significant difference in weight changes between groups (P<0.01).