

# Forecast the Type of Fever by using decision tree through diagnosis

CH.Sireesha<sup>1</sup>, G.Ananthnath<sup>2</sup>

<sup>1</sup>Student, dept of mca, KMM Institute of post Graduate Studies, Tirupathi

<sup>2</sup>G.Ananthnath, dept of mca, KMM Institute of post Graduate Studies, Tirupathi

**Abstract-** Generally there is a lot of problems in identifying the type of fever. In this project we developed a new system to predict the type fever in early stages. In the existing system for missing values we used automated data mining missing value imputation techniques. These techniques may fill approximate or wrong values in many cases. Due to this one final result may be affected. In the existing methods for feature selection they used algorithms. This technique also may choose less important attributes. Due to this one the processing time may increase. It may affect final results also. By considering all these techniques we use artificial neural networks (ANN) based on Humidity, rainfall and temperature. To overcome all these problems we go for proposed model. Proposed system consists of three important steps:

a) Manual missing value imputation method is applied that makes the data consistent.

b) We take the expert opinion for selecting most influential attributes for fever also we done internet survey. c) For accurate prediction of fever we use decision tree model. The expert system is developed using java. This expert system gives good results when compared to existing system.

**Index Terms-** Fever, Expert system, Neural Network, Prediction.

## I. INTRODUCTION

Fever is disease transmitted by mosquitoes and cause high fever suddenly and gets pains in the joints. The first case was detected in the Philippines in 1953; the disease is identified as one of the most dangerous disease in the humans. After several tests we get accurate prediction of disease and clinical symptoms. A multi variant model was constructed for predicting hemoglobin using predictors i.e., they have used various Number of attributes such as vomiting sensation, weight, sex and other factors. These techniques are used only after two to twelve days

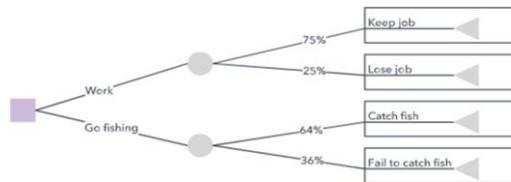
from the day of illness. The world health organization is made classification for identifying affected individual persons based on the laboratory and clinical symptoms. This system is developed for the finding the dengue fever earlier is affected by missing values and features. This may be due to approximate missing values and less number of attribute selection. In order to avoid approximate missing values, we use 1) Missing values are filled manually with appropriate normal values 2) In order to avoid less number of attributes for analysis, we took opinion from different experts. So that only we get more number of attributes. The expert system is developed using java. This expert system gives good results when compared to existing system. Fever is like a virus it spreads entire family. Symptoms of fever include severe joint and muscle pain, headache, fever, exhaustion, and rash. The presence of fever, rash, and headache is characteristic of dengue fever. Dengue is common throughout the tropics and subtropics. For Dengue fever there is no unique remedy or antibiotic to deal with it. For regular dengue fever, most effective the remedy is relief of the signs and symptoms it's far known as symptomatic remedy. For treat dengue fever we use Papaya leaf extract. Dengue hemorrhagic fever (DHF) is a selected syndrome that has a tendency to have an effect on children below 10 years of age. This difficulty of dengue reasons abdominal ache, bleeding, and shock. The prevention of dengue fever requires control or eradication of the mosquitoes wearing the virus that causes dengue.

## II. ALGORITHM

Decision Tree:

A decision tree is a graph that uses a branching method to demonstrate every possible outcome of a decision. Decision trees can be drawn by hand or

created with a graphics program or specialized software. Casually, decision trees are useful for focusing discussion when a group must make a decision. Programmatically, they can be used to assign time or other values to possible outcomes so that decisions can be automated. decision tree software is utilized in statistics mining to simplify complicated strategic challenges and examine the fee-effectiveness of research and business selections. Variables in a choice tree are generally represented by means of circles. They may be used either to drive informal discussion or to map out an algorithm that predicts the pleasant choice mathematically. A choice tree typically begins with a single node, which branches into possible outcomes. each of those consequences results in additional nodes, which branch off into other possibilities. This gives it a treelike shape. There are three tremendous styles of nodes: danger nodes, choice nodes, and prevent nodes. A hazard node, represented via a circle, shows the probabilities of certain effects. a spread node, represented with the aid of manner of a rectangular, suggests a choice to be made, and an end node shows the final very last outcomes of a diffusion course



decision trees can also be drawn with flowchart symbols, which a few humans discover simpler to study and recognize. on this technique they stated contamination is a disease commonly observed in warm and sticky region. The doctors need to understand the symptoms of dengue disease in order to categorize the patient's correctly. In this situation the patient need to take some treatments. Their dataset consists of clinical and laboratory data. The data was collected from the first visit of patient to hospital until the date of discharge. They acquired two resources of datasets from exceptional regions of Thailand, that are Srinagarindra medical institution and Songklanagarind sanatorium. these datasets consists of of extra than four hundred attributes. They used decision tree as a information mining tool. the various whole attribute they take only a few attributes which can be significant. Their experiments

are divided into 4 parts. For all experiments they use decision timber. the primary experimental effects deliver good category of dengue disease from Srinagarindra health facility's dataset and Songklanagarind medical institution's dataset, respectively. The third experimental consequences provide useful understanding once they integrated datasets. some other goal of this studies is to come across the day of defervescence of fever that is known as day0. The day0 date is the critical date of dengue patients that some patients face serious problems. Therefore the physicians need to predict day0 in order to treat the patients. The physicians having an intelligent system that can predict the day0 date of each patient. They did experiments. In the first three experiments, gives good result for classification of dengue infection. For forth experiment, they tried to predict day0 in order to treat the patients. They applied decision tree approach to all experiments. They use some measures like sensitivity, specificity and accuracy.

### III. WORKING PROCESS

Attributes:

In this project we are predicting type of fever by using decision tree by taking different temperature constraints and the values of the different attributes. The attributes here are the Blood Pressure level, No of RBC and WBC count and the blood platelets count, temperature level of the body, cold, vomiting sensation.

By taking all these parameters into account now are using decision tree to divide the values which are greater or less than the specified range into particular types of the available attributes.

Based upon the range calculated we can predict which type of fever is attacked.

The pseudo code is as follows:

String data

split all attributes

D0{

IF(TEMP>140){

IF(WHITEBLOOD>INSA LL){

IF(REDBLOOD>INSA LL){

SYSO("DENGUE");

}

}

}ELSE{

IF(TEMP>120){

```

IF(WHITEBLOOD>INSALL){
IF(REDBLOOD>INSALL){
SYSO("TYPHOID");
}
}
}ELSE{
IF(TEMP>104){
IF(WHITEBLOOD>INSALL){
IF(REDBLOOD>INSALL){
SYSO("MALARIA");
}
}
}
}
WHILE(EXIT);
}
}
}

```

#### IV . CONCLUSION

A DECISION TREE is used to predict the type of fever cases. Analysis of these datasets gives good results when compared to other methodologies in diagnosing the dengue fever. This model gives an accuracy of 100.0% in children and adults using both clinical and laboratory features. Based on the performance of the model we conclude and recommend decision tree model can be used to build an expert system to predict the new fever cases in the early stages.

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