

# Prediction Based Regular Expression For Pattern Recognition

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**Abstract-** Pattern Recognition is one of the most motivating areas of research that is become increasingly popular in prediction system. Pattern recognition technique is one of the method in which various patterns are matched from database based on users input and provide the predicted result. It is a new powerful technology which is of high interest in computer world. Pattern Recognition plays an important role for uncovering new trends in healthcare organization which in turn helpful for all the parties associated with this field.

As an example In this paper use the pattern recognition technique and regular expression to match the various symptoms of patient and provide the predicted disease

**Keywords-** Regular Expression, Pattern Recognition

## I. INTRODUCTION

pattern recognition technique is one of the method in which various patterns are matched from database based on users input and provide the predicted result. Pattern recognition is concerned with the development of systems that learn to solve a given problem using a set of example instances and set of Pattern. Areas to which these disciplines have been applied include business (e.g., character recognition), medicine (diagnosis, abnormality detection), automation (robot vision), military intelligence, communications (data compression, speech recognition), and many others.

Regular Expression is a part of finite automata which is help to create DFA that is used to predict the disease according to symptoms given to each state.

Pattern Recognition is one of the most vital and motivating area of research with the objective of finding meaningful information from huge data sets. In present era, Pattern Recognition is becoming popular and helpful in healthcare field because there is a need of efficient analytical methodology for detecting unknown and valuable information in health data .It is benefits to healthcare organization for grouping the patients having similar type of diseases or health issues so that healthcare organization provides them effective Prediction. Pattern Recognition techniques to guess the most

accurate illness that could be associated with patients symptoms. So Doctor ,Any user can use this site for easily prediction of disease and also it save the time of Person.

## II. RELATED WORK

Arnold Polanski published paper "Pattern Matching in Multidimensional Time Series". They uses Pattern Description language(PDL) approach

Based on the algorithm for pattern matching in a character string, a pattern description language (PDL) is developed. The compilation of a regular expression, that conforms to the PDL, creates a nondeterministic pattern matching machine (PMM) that can be used as a searching device for detecting sequential patterns or functional (statistical) relationships in multidimensional data. They used the Pattern Matching Machine(PMM) for matching of states or transitions in DFA.

Asiri Rathnayake and Hayo Thielecke published the paper "Regular Expression Matching and Operational Semantics". They uses KLeene Star and Operational Symantics approach in which rather than first translating a regular expression into a deterministic finite automaton, such implementations typically match the regular expression on the y .Next, they represent the expression as a data structure using pointers, which enables redundant searches to be eliminated via testing for pointer equality.

Yang et. al. [6] did some research in the field of predicting disease risk. A method for same uses a feature selection. Random SVM and forest methodologies have employed by them. The multiple UCI datasets have been used.

## III. PROBLEM DEFINITION

The data generated by the health organizations is very vast and complex due to which it is difficult to analyze the data in order to make important decision regarding patient health. This data contains details regarding various symptoms of patient and diseases. So, there is a need to generate a powerful tool for analyzing and extracting important information from this complex data .So, to avoid this problem

and for analyzing the data we use the regular expression for pattern recognition for make easy to predict diseases of patient.

Pattern recognition technique and regular expression match the various symptoms of patient and provide the predicted disease. The system is fed with various symptoms and the disease/illness associated with those systems. The system allows user to share their symptoms and issues. It then processes user’s symptoms to check for various illnesses that could be associated with it. Here use some Regular Expression and Pattern Recognition techniques to guess the most accurate illness that could be associated with patients symptoms. So Doctor Any user can use this site for easily prediction of disease and also it save the time of person.

Regular expression syntax is used on large number of patterns. That provided, it needs to be compiles into new data structure. It needs to be done to effectively increase the efficiency in the runtime operations. An input string has to be matched with the pattern from large number of patterns runtime with maximum efficiency. Every input string is matched with some pattern. That is the property of that set consisting of patterns. Sometimes there may be several patterns getting matched with the string.

**A. The objectives of the proposed system**

- To reduce time and space requirements required using regular expressions
- The objective of the project is to make an application to easy prediction of disease In order.
- to build such an application complete web support need to be provide.
- To resolve errors in efficiently classifying symptom strings into set of patterns

**4. Proposed Work**

This system will have facility to post their queries by just one click on symptoms using web based interface. Web based interface will further be available to the clinic, Doctors, laboratory. Firstly user have to login on this site and then select the various symptoms then at the server site this symptoms take as a input and performing pattern matching on this symptoms using regular expression as a background process and at last provide the predicted result.

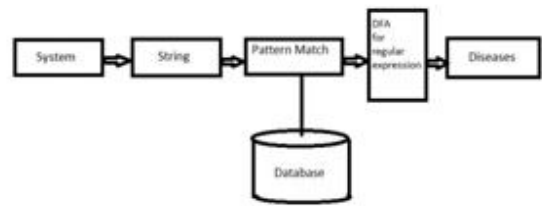


Figure 4.1: System Architecture of Pattern Recognition

The above figure shows the Architecture of system in which system take a input as a string and then match it from the Database using regular expression and generate the predicted disease.

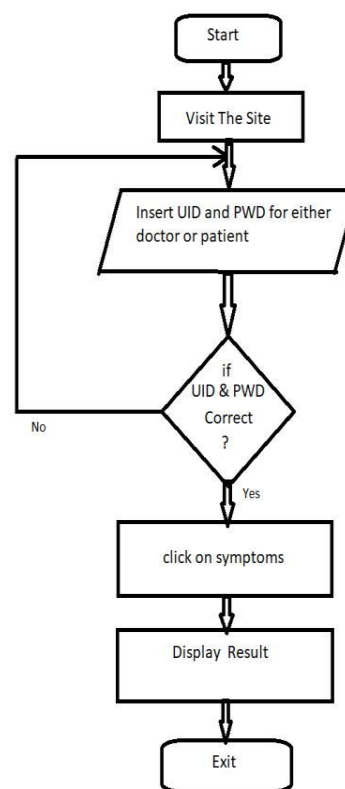


Figure 4.2: Dataflow diagram

The steps involved in flow of the proposed system are given below:

1. Firstly, user has to Registration onto system.
2. User selects the symptoms by clicking on symptoms list.
3. Then Algorithm match for the input from database using regular expression.
4. Then Algorithm predicts a disease and show result.

5. At last, system show the report based on Analysis of Disease of related user.

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#### IV. ALGORITHM

Input - Give the symptoms as a token. Output- Display predicted disease as a result of pattern recognition.

Method -Use of regular expression for pattern recognition.

Step 1-Start

Step 2- User will register his details into system.

Step 3- Choose the symptoms and submit it.

Step 4-The symptoms will be accepted by system as a pattern for recognition.

step5-Then symptoms will be match with database and using regular expression system will predict the disease according to pattern.

Step 6- After that system display the predicted disease as a result.

Step 7- Repeat step 3 to 6 till user satisfaction. Step 8-At last system generate the patient report according to his symptoms.

Step 8- Stop.

#### V. CONCLUSION

The Pattern Recognition using Regular Expression is the one of the most powerful and efficient approach to predict the disease result .This Approach of prediction saves the time means that less time taken as well as space for execution. The regular expressions maintaining a continuation to keeping track of what for do next.

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