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An Expert System Tool for Diagnosis of Fever

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Abstract: ***Now a day's many people are suffering from fever. It is not that easy to identify the type and symptoms of the fever. To know about the fever the patient as to undergo various lab test, using test report he doctor will give the treat***
The entire process of diagnosing the fever is maintained as document searching information about a particular patient as well as to find out the most common place where this disease is spreading and how many people are facing similar kind of fever is a difficult task.We are proposing an expert system tool which accepts the input given by the patient and based on the input the doctor (expert tool) suggest the lab test if necessary. Based on the input and necessary lab test report the system generates the treatment to the patient the system also records the information about the patient, the treatment given by the doctor in the database for future purpose The system also generates the report about number of patients suffering from the disease, disease from particular place etc.
Keywords: expert system, fever, symptoms.

I. INTRODUCTION

An expert system is a computer program designed to solve problems in a domain in which there is human expertise. The knowledge built into the system is usually obtained from experts in the field. Based on this knowledge, an expert system can replicate the thinking process of the human experts and make logical deductions accordingly. This paper focuses on the design and development of expert system for the diagnosis of fever.
By this expert system we can also retrieve graph and all the details of patients who have consulted the doctor.

II. LITERATURE REVIEW

An expert system simply replicates the heuristic knowledge of human experts. According to Hatzilygeroudis, Vassilakos and Tsakalidis (1994), Heuristic knowledge represents experience accumulated through years and concerns the way an expert uses the above knowledge to make diagnoses. A diagnosis basically consists in relating patient data with corresponding diseases. In order for the computer to be able to retrieve and use heuristic knowledge, expert systems are organized in three distinct levels. These are the knowledge base, the working memory and the inference engine. The knowledge base contains the domain knowledge of the system. It is typically represented as a collection of if/then rules. During the execution of an expert system, new facts are derived. These facts, together with the information entered by the user are stored in the working memory. The inference engine is the part of the expert system that performs the deduction of new facts from previously derived facts and rules in the knowledge base. The user interface is usually through the use of natural language.
According to Cuena, Fernandez, Lopez de Mantaras and Verdejo (1985), research into the use of artificial intelligence in medicine (AIM) started in the end of the 1960's and produced a number of experimental systems. These include:
DENDRAL (Stanford University, 1967) deduces the chemical molecular structure of an organic structure from its formula, spectrographical data and magnetic-nuclear resonances.
INTERNIST (Pittsburgh University, 1974) was a expert system for the diagnosis of complex problems in general internal medicine. This system covered 80% of the knowledge of internal medicine, but was criticized for the shallowness of their knowledge.
MYCIN (Stanford University, 1976) was a expert system to diagnose and recommend treatment for certain blood infections (antimicrobial selection for patients with bacteraemia or meningitis).
CASNET (Rutgers University, 1960) was an expert system for the diagnosis and treatment of glaucoma.
EXPERT (Rutgers University, 1979) was an extension generalized of the CASNET formalism which was used in creating consultation systems in rheumatology and endocrinology.
ONCOCIN (Stanford University, 1981) was a rule-based medical expert system for oncology protocol management. It was designed to assist physicians in treating cancer patients receiving chemotherapy
At present, many new expert systems have been designed in the medical field to take care of health related issues.

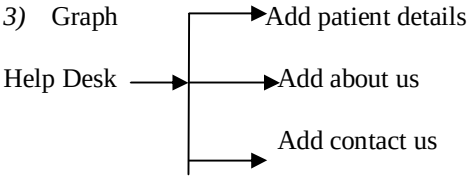
Fever (also known as pyrexia) is a frequent medical symptom that describes an increase in internal body temperature to levels that are above normal. According to Sarah (2005), fever patterns can be categorized into prolonged fever, fever of unknown origin, recurrent fever and periodic fever. Prolonged fever is a single illness in which duration of fever exceeds that expected for the clinical diagnosis or a single illness in which fever was an initial major symptom and subsequently is low grade or only a perceived problem. Fever of unknown origin is a single illness of at least 3 weeks' duration in which fever greater than 38.3oC is present on most days, and diagnosis is uncertain after 1 week of intense evaluation. Recurrent fever is a single illness in which fever and other signs and symptoms wane and wax (sometimes in relationship to discontinuation of antimicrobial therapy) or multiple illnesses occurring at irregular intervals, involving different organ systems in which fever is one, variable component. Periodic fever has to do with Recurring episodes of illness for which fever is the cardinal feature, and other associated symptoms are similar and predictable, and duration is days to weeks, with intervening intervals of weeks to months of complete well-being. Episodes can have either ''clockwork'' or irregular periodicity.

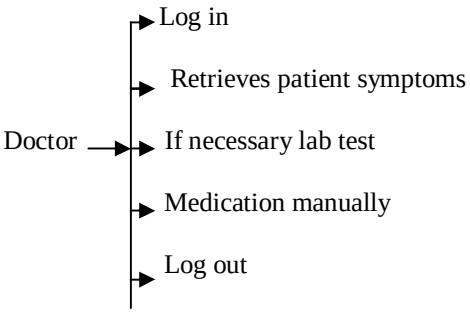
III. PROPOSED METHODOLOGY

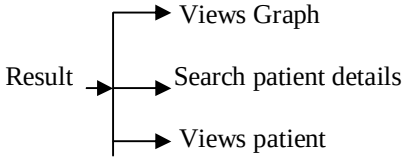
Here we aimed to design an expert system which maintains control over the information of the patient. All the details of the patient and the details of the disease and prescribed medicines are stored in the database which doesn't lead to data damage or data duplication. Doctor can directly store the information of the patient and analyze the disease within no time. Doctor can view the level of disease in various locations in the graph where he can get quick view of the disease and give suggestions to the patients. By this both the doctor's and patient's time can be saved.

A. The Proposed System Consists of Three Modules

1) Help Desk.
2) Doctor.
3) Graph







IV. RESULT

Fig1: Views graph for a particular Place where a particular Decease is spreading.

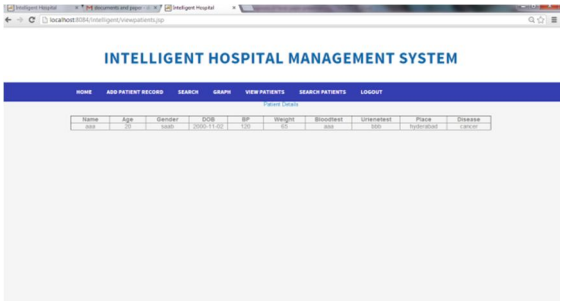


Fig2: search patient details

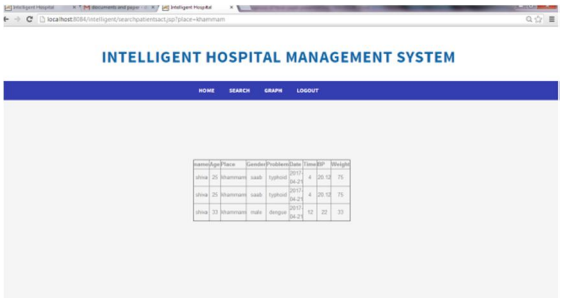


Fig3: views patients

V. CONCLUSION

Our expert system maintains all the patient's information and the disease details securely. Using expert system patient details can be retrieved easily. This expert system guarantees the accurate maintenance of the patient details and gives the cure to the symptoms of the patient in very less time. Doctor can find the treatment to the symptoms of the patient by clicking on the search button which saves lot of time. This application also provides graph for various diseases in various locations.

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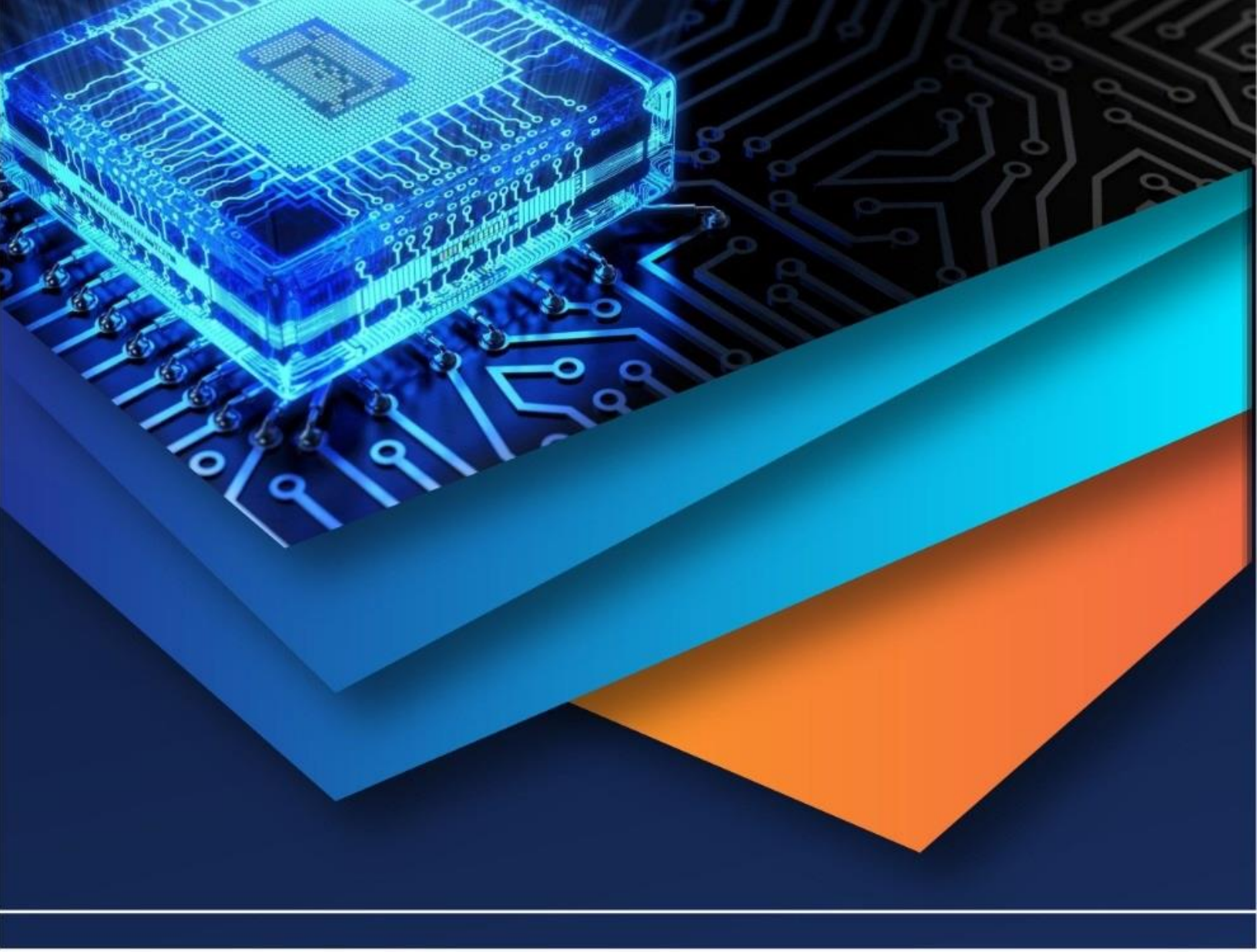

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