

Introduction to Artificial Intelligence

Project Proposal

|  |  |  |
| --- | --- | --- |
| **Project Title:** | **Sunway Technical Medical Centre** | **Intake: APD1F2011CS(IS)/** **APU1F2011CS** |
|  | **Name** | **Designation/Role** |
| **G. Leader** | **Eslam Magdy Rezk Ebrahim Hassanin** | **Project Leader** |
| **Member** | **Ali Abdulameer Abdali Abdulla Alsheala** | **Knowledge Engineer** |
| **Member** | **Nurfarah Hafina binti Mohamad Nizam** | **Knowledge Engineer** |
| **Member** | **Adryana Marzookhy Binti Azhar** | **Knowledge Engineer** |

**Sunway Technical Medical Centre**

**Implementation of the Project:**

This project is implemented for Sunway medical centre, so The students came up with some ideas for designing a chat bot for Sunway Medical Center and they may start solving four problems in the hospital and then in the near future the idea will be circulated at all departments at the hospital to helps patients to access information and learn about the disease, such as depression patients (Mental illness depression problem), The purpose of this problem is to reduce depression in society through the health instructions that it provides to the user, such as how the eating regime is and how it is going on today in a healthy way, and if the user has symptoms of the disease and what medications are used under the doctor’s instructions, as well as giving some advice to try to get out of the psychological state of the patient during the illness. The expert system is concerned with what the user requests and the psychological problems and disorders that hinder him, by clarifying the psychological state and mood, and then showing the instructions for this case, On the other side of the expert system, there is a database for users who fear depression, and then the expert system responds with instructions and medical advice, the second problem is (Pregnancy), so The purpose of this problem that the pregnant women can help ease their burden in so many ways. This will be very helpful for them and can be used in a long run because pregnant women will go through hormone and emotional changes, and they will be concern about their fetus during their prenatal and the chatbot will be a very helpful platform for them to use in order for them to get sufficient and correct information. Besides, pregnant women will also receive advises and recommendations to improve their health and the health of the fetus. Today, they are no chatbots created for pregnant women, but the existence of support group assisted them and help them along the way. The expert system will also recommend what medication to take and will give a list of symptoms if there are any new reactions under the doctor’s prescription, third problem is (Bipolar disorder), so Bipolar disorder is a common and serious medical illness that negatively affects how the person feels and function in his daily life which can lead to a variety of emotional shifts through the day and can decrease his ability to function at work and at home. That’s why in this project we hope to bring some improvement and awareness to our mental health and provide treatment as soon as possible to anyone suffering from this disorder, the fourth problem is (The Coronary Artery Disease), so the coronary arteries are the veins that convey blood to your heart. It is the straiten or obstruction of the coronary arteries. The most common cause is typically atherosclerosis. Inside the body, plagues are cholesterol and fatty deposits that have built up inside the arteries. These maladies can obstruct the courses or harm the conduits, which cutoff points or stops blood stream to the heart muscle. IN the event that the heart does not get sufficient blood, it cannot get the oxygen and supplements it needs to work appropriately. This can cause chest torment or a cardiovascular failure, and One of the issues is that doctors in hospitals or any other medical setting that treats coronary artery disease or other comparable disorders are unable to adequately diagnose patients because they do not have all of the necessary information at the time of diagnosis. Aside from that, it takes a lot of time and effort for doctors to continue to apply procedures like Interviews, questionnaires, and other methods are used.

|  |
| --- |
|  |
|  |
| Expert Suitability: |
| The expert system will be very suitable for Sunway medical centre to solve many problems and provide full information to users to reassure them and solve all problems, and examples of these problems are:  Mental illness depression:  This expert system will help the user to help diagnose depression and give the user the necessary advice to pass this disease or how to protect himself from the dangers and things that lead to the disease through some instructions and daily foods. There are many types of depression in medicine, and this expert system will be able to identify which type of these diseases the user has suffered through the side effects of the disease, If this will facilitate the process of reaching the medical solution, or at least knowing the existing medical problem, and that this will also help the user not to be lazy, because most patients are lazy to go to the doctor, except for the difficult or crucial time, so this expert system will give them a lot of information about that disease Without the need to leave the house or need a lot of effort.    Pregnancy:  Yes, an expert system will be suitable for this problem area because in this area, only factual information is needed to give advice to the patients and to suggest suggestions to patients. Furthermore, an expert system is needed because some patients are working and have no time to consult to the doctors often and by having an expert system, patients get to get answers to their doubts will less amount of time taken. So, this will clarify any doubts or concerns that the patients have.  Bipolar disorder:  Although bipolar disorder is in many cases got neglected by many people due to the lack of mental health awareness which can affect the person in his daily life and bring difficulties and unrest to him. Therefore, a well-built expert system would help many in diagnosing the symptoms as soon as possible by providing them with a chatbot that helps them in recognizing which symptoms they are having and provide a simple and quick method to bring the information that the patient needs.  The Coronary Artery Disease:  Instead of using traditional procedures like interviews and questionnaires, the expert system will be able to transfer the knowledge of human experts to the expert system's knowledge base. Because of the speed with which the expert system can find knowledge in such a short amount of time, time, money, and resources will be saved.  Overall, the expert system is suitable for the medical field as well as for patients or who felt afraid of illness and helps many people because they have to move a lot when they are sick, once to the doctor, and this does not make us deny the role of the doctor in society, but it will have a great role in giving great medical information to the user.  Need for Expert System:  The expert system that was made specifically for the Sunway medical centre has solved four problems, so to clarify an explanation of the features and benefits:  Mental illness depression problem:  The medical field needs a system that helps depressed patients to follow an integrated medical system that helps them get out of depression, and the most important of these features is that it guides and directs them in a correct manner through information obtained from doctors, as well as the way of eating and sleeping, which improves and helps the patient in his condition while following the instructions of his doctor and explains to him all the medical reasons that Prove that he is depressed or not.    Pregnancy:  Yes, a system is needed for the pregnant women to solve their problem regarding pregnancy. With the help of a system, pregnant women are able to gain more information about their condition and what treatment and medication should be taken in order for both pregnant and fetus are healthy. Next, with the use of the system, pregnant women are able to get one-to-one conversation and get answers immediately. Without the system, it will take time for the patient to get a one-to-one consultation so, with help of a system, pregnant women will be able to clarify their doubts and concerns instantly. Besides that, with the help of the system, it will enable the chatbot to provide more relevant and specific information to their patients. In today’s world, more people are using smartphones and we get to gain feedback from the patients in order for us to improve the performance of the system so that it will be convenient for the future patients to use and make full use of the system. Last but not least, the system will be able to monitor their health performance and the system will give advice in terms of food and medicine consumption.  Bipolar disorder:  The bipolar disorder is caused by two main risk factors which is either from the brain structure or the genetic factors. However, with an early examination through a knowledgeable expert system it can prevent many undesired outcomes such as suicide in extreme cases and help the medical care in providing support easily to the patients that need it as soon as possible.  The Coronary Artery Disease:  The work would be a waste of time and energy if there was no expert system to aid the patients or users with their needs. The expert system's impact on these issues would be extremely beneficial. Aside from that, there are certain advantages to the expert system, such as doctors spending less time directly attending to these problems and helping someone who truly needs it. |

This is a system for novice level users:

This is because a novice user will have a lot of questions and an expert system will be able to answer them. It will also be a great opportunity for novice and intermediate users, especially novice users, to learn and use an expert system since they do not have much experience with one.

Agreement/Approval

This will be approved in class – please attached with final documentation as reference upon submission on moodle