

Medkwick - An E-commerce Mobile Application Based on Online Medicine Shopping

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Abstract - The proposed framework is an android application. This paper actualizes an android based versatile application for online medicine shopping. This framework incorporates user-friendly application interfaces, drug specialist interface, database through an Android smartphone. The proposed application is easy to understand by actualizing the Bot Builder Framework for online medication shopping. At the point when the drug is accessible in the database, the client is permitted to include the prescription in the shopping cart, if the medication isn't accessible in the database, the portable application will hold the procedure to post a recommendation and get affirmation for giving a proportionate brand of prescription. This portable application is created to encourage online medicine to buy and to give the essential online basic consultation with the assistance of chatbot.

Key Words: Android SDK, Chatbot concept, Web service, Online medicine shopping.

1. INTRODUCTION

This application will assist the client in taking legitimate meds in an appropriate amount at the best possible time by talking through CHATBOT. So it is important to take appropriate prescriptions in a legitimate amount at the best possible time. This Chatbot idea is consequently set by the application in the Android application. The fundamental objective is focusing on smooth inner correspondence and working for the client alongside other helpful data.

The majority of times patients may feel lazy to visit the restorative shop when medicines are required. Expected results are time and cost sparing to reach to individuals. In the framework, we present an Android-based application for the patients. This android Chatbot application will assist the client in interacting with the framework and to buy drugs. Efficient for people of remote spots for their drug search and furthermore gives the accommodation of seeking to medication anyplace anytime.

2. LITERATURE SURVEY

Paper[1] implements an android based mobile app for online medicine shopping. This mobile app is developed to facilitate online medicine purchase by verifying the prescription uploaded by the user and to confirm the order. This system includes mobile application interfaces, pharmacist interface, database, web service provider for intermediate process to provide service through android mobile phone. When the user wants to make purchase through mobile app, necessary to upload the authorized prescription from a doctor and the prescription will be stored in the database. Then the user precedes the process by giving medicine name in the mobile application Chatbot interface. When the medicine is available in the pharmacy, the user allowed to add the medicine in the cart list, if the medicine is not available in the pharmacy, the mobile app will hold the process for the pharmacist response to post a suggestion and get confirmation for providing equivalent brand of medicine. The prescription uploaded by the user is compared with the cart list and will be approved by the pharmacist before placing the order. The domain of this system is android application. The n-gram technique is used in this system to speed up the searching process by the user typing medicine name in the user application interface. The drawback of existing system is online shopping or android apps are not user friendly. The proposed mobile app is user friendly by implementing the Bot Builder Framework for online medicine shopping[1].

To lead a good life healthcare is very much important. But it is very difficult to obtain the consultation with the doctor in case of any health issues. The proposed idea is to create a medical chatbot using Artificial Intelligence that can diagnose the disease and provide basic details about the disease before consulting a doctor. To reduce the healthcare costs and improve accessibility to medical knowledge the medical chatbot is built. Certain chatbots acts as a medical reference books, which helps the patient know more about their disease and helps to improve their health. The user can achieve the real benefit of a chatbot only when it can diagnose all kind of disease and provide necessary

information. A text-to-text diagnosis bot engages patients in conversation about their medical issues and provides a personalized diagnosis based on their symptoms. Hence, people will have an idea about their health and have the right protection[5].

In Paper [5], study is proposed for Artificial Intelligence based chatbot technology that makes interaction between man and machine possible by using natural language. In this paper, we proposed an architectural design of a chatbot that will function as virtual diabetes physician/doctor. This chatbot will allow diabetic patients to have a diabetes control/management advice without the need to go to the hospital. A general history of a chatbot, a brief description of each chatbots is discussed. We proposed the design of a new technique that will be implemented in this chatbot as the key component to function as diabetes physician. Using this design, chatbot will remember the conversation path through parameter called Vpath. Vpath will allow chatbot to give a response that is mostly suitable for the whole conversation as it specifically designed to be a virtual diabetes physician[6].

3. RELATED WORK

The client can enroll the user details, which will be stored in the database. This application is produced for smartphone clients, as we probably are aware of how the smartphone usage has advanced in a previous couple of years, there are many working frameworks(operating systems) available for smartphones yet we select the Android OS for building up this application since it has an exceptionally decent client crowd around the world. This app is good with various forms of Android, for example, beginning from the base SDK rendition of Android 3.0 (Honeycomb) to ongoing refresh Android 9.0 (Oreo). The paper depicts that individuals can enlist their details through the android application. The proposed application helps clients to buy medicine and other health related services through Chatbot idea and intended to give basic online Consultation and to buy the meds which are required for the patient. The task gives various things of medicinal services and online enrollment of drug details.

4. MODULES OF WORK

Database:

Stores the important data about any drug like name, item id, made date, expiry date, amount, measurements, MRP and so on.

Administrator:

View all bunch details of any prescription like MRP, deal rate, Purchase rate, stock and so on.

Client:

The primary point of this task is to create 24*7 medicinal administration for clients through the online application. Purchase the prescription through on the web and payments installment detail moreover. The Special thing about this task is it gives alternative sorts of drugs to buy. It can be used for various kinds of prescription like child care, personal care, and home needs items.

This Application also facilitates the setting the reminder for Medicine consumption and also users can set alarm for post-lab tests and doctor Appointments. Database Keeps track of the medication which gets Transacted every single time by the client. Gives the admin to refresh the rundown of medications on the web. Gives the facilities to make payment through Debit Card, Credit Cards, etc. It monitors the information, data, and payments. Expected Results Time and cost sparing to reach to users. The fundamental objective is focusing on smooth inner communication with clients and providing useful information for users in Health articles.

1) ITEM:

Drug rundown to be kept up is to show the details of the items to the clients.

2) USERS:

This framework will have data about the Users who are registered. They can view and buy prescriptions.

3) ADMIN:

Admin will have the privilege to add, delete, and change items and he can see the request subtleties, Sales Reports too.

4) ORDER:

Order will have the prescription picked by the clients.

5) CART:

Shopping cart contains the things that a client has chosen for purchasing. The shopping cart page of the application will show a rundown of items chosen by the client. The client can add things to their list of things.

Modules of the Work are given in the Fig.1,

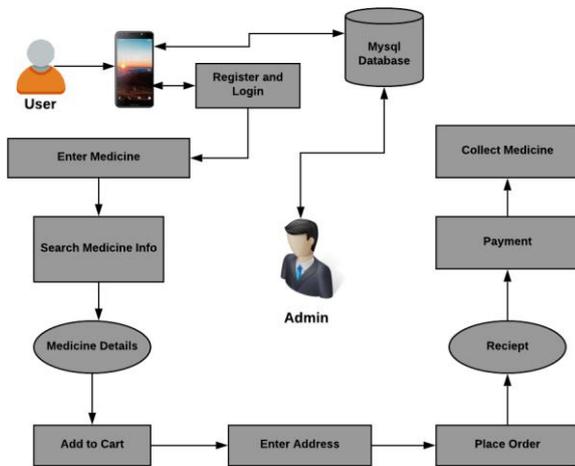


Fig. 1. System Architecture.

5. TOOLS

The world is contracting with the development of the smartphone's innovation. As the number of users is increasing day by day, facilities are also increasing. After the first release, there have been various updates in the first form of Android. Android is a product bundle involving the working framework as well as middleware and key applications. A standout amongst the most broadly utilized portable OS nowadays is ANDROID. A working framework has built up a ton over the most recent 15 years. Android is a product pack involving the working framework as well as middleware and key applications. A standout amongst the most generally utilized versatile OS nowadays is ANDROID. was gained by Google in 2005. Android, Eclipse is the essential apparatus used to build up the application. What's more, with the new innovations, new programming and working frameworks are required.

6. CHATBOT ARCHITECTURE

The Implementation Plan of the entire system is divided into 3 tiers, which are to be done sequentially. The architecture of the system is as shown in the figure.

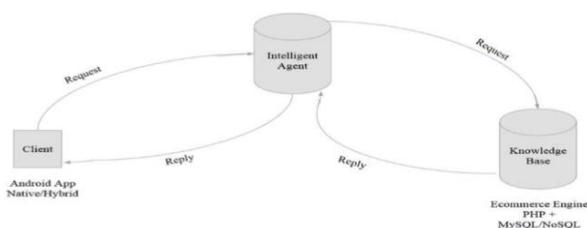


Fig. (2). Three-Tier Architecture System for Chatbot.

The 3 tiers are explained as follows:

(1). Android Skin: All user interface elements in an Android app are built using View and View Group objects. A View is an object that draws something on the screen that the user can interact with. A View Group is an object that holds other View (and View Group) objects in order to define the layout of the interface. Android provides a collection of both View and View Group subclasses that offer you common input controls (such as buttons and text fields) and various layout models (such as a linear or relative layout). The user interface for each component of the app is defined using a hierarchy of View and View Group objects, as shown in figure 3. Each view group is an invisible container that organizes child views, while the child views may be input controls or other widgets that draw some part of the UI. This hierarchy tree can be as simple or complex as you need it to be but simplicity is best for performance.

(2). Intelligent Agent: An agent will gather information and perform the necessary services without your immediate presence and on some regular schedule. Typically, the agent program will use the parameters you have provided, will search all or some part of the engine, gather information you're interested in, and present it to you when you ask for it. A simplified architecture and working of the agent that will be used is as shown in figure 2.

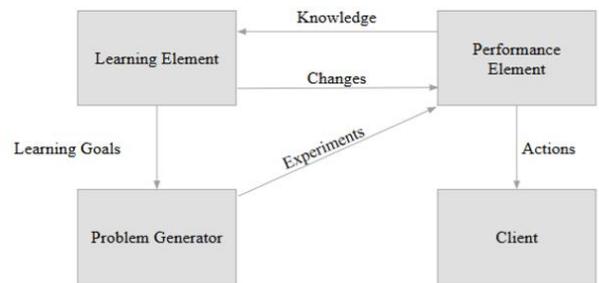


Fig. (3). Architecture of the Intelligent Agent.

Problem generator part of the agent will process the user input to generate a problem statement. This will be parsed internally and results are sorted. Performance element will be responsible for performing all external actions. Learning element of the agent will take the feedback from the critics about the agent and decide on how performance element will have to be modified when it will be used in the future.

(3). Ecommerce Engine Modules: Catalogue and Product Management Order Management Checkout, Payment & Processing Recommendation system.

Naive Bayes algorithm

Naive Bayes model assumes that all variables contribute toward classification and that they are mutually independent. In other words, it assumes that variables are not correlated. This is unrealistic assumption for most of the datasets; however, it leads to a simple prediction framework that gives surprisingly good result in many practical cases.

For example, below a training data set of weather and corresponding target variable 'Play' which suggests the possibilities of playing. Classify whether players will play or not based on weather condition. Following steps we have to follow:

	Predictors				Response
	Outlook	Temperature	Humidity	Wind	Class Play=Yes Play=No
Day1	Sunny	Hot	High	Weak	No
Day2	Sunny	Hot	High	Strong	No
Day3	Overcast	Hot	High	Weak	Yes
Day4	Rain	Mild	High	Weak	Yes
Day5	Rain	Cool	Normal	Weak	Yes
Day6	Rain	Cool	Normal	Strong	No
Day7	Overcast	Cool	Normal	Strong	Yes
Day8	Sunny	Mild	High	Weak	No
Day9	Sunny	Cool	Normal	Weak	Yes
Day10	Rain	Mild	Normal	Weak	Yes
Day11	Sunny	Mild	Normal	Strong	Yes
Day12	Overcast	Mild	High	Strong	Yes
Day13	Overcast	Hot	Normal	Weak	Yes
Day14	Rain	Mild	High	Strong	No

Figure (4): Example of Naive Byes Algorithm

Step 1: The data set is converted into a frequency table.

Step 2: Create Likelihood table by finding the probabilities like Overcast probability = 0.29 and probability of playing is 0.64.

Step 3: Using Naive Bayesian equation for each class to calculate the posterior probability. The class with the highest posterior probability is the result of prediction.

Weather	Play
Sunny	No
Overcast	Yes
Rainy	Yes
Sunny	Yes
Sunny	Yes
Overcast	Yes
Rainy	No
Rainy	No
Sunny	Yes
Rainy	Yes
Sunny	No
Overcast	Yes
Overcast	Yes
Rainy	No

Frequency Table		
Weather	No	Yes
Overcast		4
Rainy	3	2
Sunny	2	3
Grand Total	5	9

Likelihood table		
Weather	No	Yes
Overcast	4	=4/14 0.29
Rainy	3	2 =5/14 0.36
Sunny	2	3 =5/14 0.36
All	5	9
	=5/14	=9/14
	0.36	0.64

Figure (5): Naive Bayes Algorithm

Problem: If weather is sunny, then players will play. Check whether statement is correct or not?

By solving it,

$$P(\text{Yes} | \text{Sunny}) = P(\text{Sunny} | \text{Yes}) * P(\text{Yes}) / P(\text{Sunny})$$

Here $P(\text{Sunny} | \text{Yes}) = 3/9 = 0.33$, $P(\text{Sunny}) = 5/14 = 0.36$, $P(\text{Yes}) = 9/14 = 0.64$

Now, $P(\text{Yes} | \text{Sunny}) = 0.33 * 0.64 / 0.36 = 0.60$, which has higher probability.

Based on various attributes, Naive Bayes uses a similar method to predict the probability of different class. This algorithm is mostly used in text classification as well as in problems having multiple classes.

We compared ID3 algorithm with Naive Bayes Algorithm and found that Naive Bayes Algorithm takes minimum time to generate the results/output and it produces more accurate result. Hence, for our system we chose Naive Bayes Algorithm.

In our system, we use naive bayes analysis, we provide 30 questions from 6 different branches i.e.

Computer, Information Technology, Electronics, Electronics and Telecommunication, Mechanical, Civil.

For example,

Branches	CIVIL		IT		COMPS		EXTC		MECH		ELEX	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Student	2	3	3	2	5	0	0	5	2	3	2	3

Table (1): Naive Bayes Example

Here, in this example the user gives all right answers for computer branch which is having highest probability. So, our system will predict Computer branch as the most suitable branch for him or her.

7. FUTURE SCOPE

The Chatbot will have predefined set of standards that change the input sentence into a desired outcome. However, the future of Chatbot can be based on using neural networks. The neural network model gives input and output sentences by learning associations between the word sequences. It will be an attempt of implementing Sequence to Sequence Learning with neural networks and reproducing results in conversational model. It will sometimes act differently, but the user can surely have great time shopping!

8. CONCLUSION

A pharmacy software offers operational efficiency and customer retention advantages such as: saves time and cost, user-friendly application interfaces, drug specialist interface, database through an Android smartphone. Chatbot will have the ability to respond like human being hence it will ease the efforts that are required to be done by human. Thus, in this paper, we have planned to implement an Ecommerce engine based Chatbot which will attempt to improve the interaction of the user with E-Commerce engine. The Chatbot will use artificial intelligence and hence will learn the responses of the users resulting in increasing efficiency. Chatbot will store a set of responses, but also will take dynamic user input into account and thus tend to provide basic online consultation and alternative medicine suggestions.

9. REFERENCES

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