Personalized Diet and Disease Guidelines Recommendation Bot for Women

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Abstract — Nowadays people are more and more interested about how to monitor their regular physical health to make the most obliging evidence for private health management. Womaniyaa is a place where women can identify a key to their countless problems. Here they will distinguish about the elaborated state of the health condition and can cooperate with a medical bot. This bot has services like offering a diet plan built on BMI and age and home remedies built on the indications.

Keywords — Women, Health, Fitness, Yoga, NLP, Diseases, Home Remedy, Diet, Natural Processing Language.

I. INTRODUCTION

In every society, the ladies community wasn't given due attention, particularly on the health aspect. In most associations, women are the most deprived segments of all the health facilities. They are the leading affected groups right from start to the peak of their lifetimes in terms of poor medical assistance during pregnancy, after delivery as a baby, as a young woman, and as a lady. They suffer from poor nourishment, medical assistance, education, and moral care. Health is interested with the qualitative improvement and it is not subject to the precise measurement. Women have more episodes of sickness than adult males and are less likely to obtain medical treatment before the illness is completely upgraded.
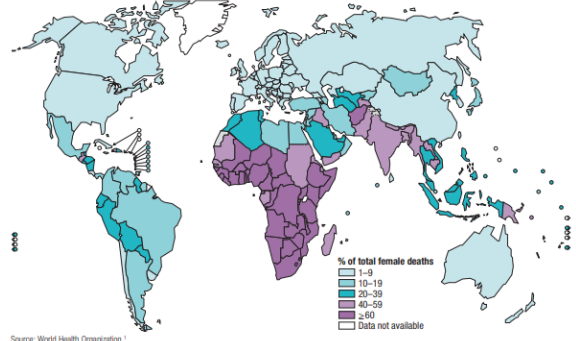
Table 1 Number and distribution of the world's women and girls by age group and country income group, 2007

Age group	Low-income countries		Middle-income countries		High-income countries		Global total
	000s	%	000s	%	000s	%	000s
0–9	300 768	50	241 317	40	57 456	10	599 541
10–19	267 935	45	263 464	44	61 577	10	592 975
20–59	580 014	34	875 052	51	276 140	16	1 731 206
60+	86 171	22	183 099	48	115 681	30	384 952
Total	1 234 888	37	1 562 932	47	510 854	15	3 308 673

Source: United Nations Population Division.[2]

From the above Table1, it is noted that most of the world's women live in low- or middle-income nations, about half of them in South-East Asia and Western specific regions. Just 15% of the world's 3.3 billion females board high-income nations.

Figure 5 Women's deaths from communicable, maternal, perinatal and nutritional conditions as a percentage of total women's deaths, 2004

Source: World Health Organization.[1]

The health transaction is least advanced in Africa and India, where patterns of mortality among young women and adult females are nonetheless characterized by a predominance of infectious diseases (communicable, maternal, perinatal, and nutritional conditions).

Ⅱ. REVIEW OF LITERATURE

A. The paper titled "An Integrated Approach of Diet and Exercise Recommendations for Diabetes Patients" stated that:

They have gone through an ontology-based integrated approach to unite knowledge from various areas to urge diet and practice suggestions for diabetes. The arrangement is created as a Semantic Healthcare Assistant for Diet and Exercise (SHADE). For every domain (person, diabetes, food, and exercise) they have represented separate ontology alongside rules then an integrated ontology connects these individual ontologies.

B. The paper named "An Interactive Healthcare System with Personalized Diet and Exercise Guideline Recommendation" expressed that:

This system analyzes the results of the traditional physical survey to live health risk and supply personalized health maintenance services for users in terms of diet and exercise guideline recommendations. They got some interactive ways for users to simply feedback their vital signs into the organization and quickly get suggestions for health management from the arrangement. Foremost, they practice the physical examination result because the data

to be examined. It's real convenient for users at a very low price. Second, the scheme design is extendable, so this is usually simply adjusted to compute for any chronic ailments, yet other kinds of diseases.

C. The report titled "PhytoCloud: A Gamified Mobile Web Application to Modulate Diet and Physical Activity of Women with Breast Cancer" stated that:

The story presents a user-centered approach of developing a Mobile Web App that focuses on breast cancer patients following their specific dietary, physical, and mental requirements counting on the phase of their medical treatment. The planning of PhytoCloud is being identified, a gamified Mobile Web App that lets users to record their dietary habits and physical action and motivate their consumption of food with estrogen-like properties (phytoestrogens) which are related to the prevention of reappearance of breast malignant neoplastic disease.

D. The report entitled "Healthcare for patients with interstitial cystitis/bladder pain syndrome based on internet health education" stated that:

The objective of this study is to utilize Internet interruption for caring for Interstitial Cystitis patients to ease their pain and annoying symptoms. Healthcare education was conducted through the network by asking the patients, separated into the discipline and control groups to work out contraindications, drug abuses, and behaviors weekly to remind and consolidate important rules for promoting quality of life. The E-health scheme was shown to be efficacious in improving the QOL of IC patients through the interposition of the Internet healthcare education for the consolidation of healthy dieting habits and lifestyle.

Ⅲ. PROPOSED SYSTEM

The web application tells us all about common diseases, feminine diseases, recipes as home remedies, and some practice sessions and yoga asanas. It additionally comprises of an intuitive medical services bot that gives a customized diet plan and furthermore analyze infections from the manifestations given by users.

A. Facilities by Womaniyaa

For a better lifestyle and wellness, women need to overcome diseases occurring and need to eat healthy food and practice regular exercises and yogas. Womaniyaa provides good homemade recipes for common diseases and diseases which are especially experienced in adult females. In that location is detailed info about every disease with its definition, symptoms, causal factors, home remedies, and bars. It additionally gives activities and

yogas which should be possible at home with no mentor. An interactive healthcare bot helps the users by giving them a diet plan and it likewise aids in naming the user by the symptoms collected by user inputs.

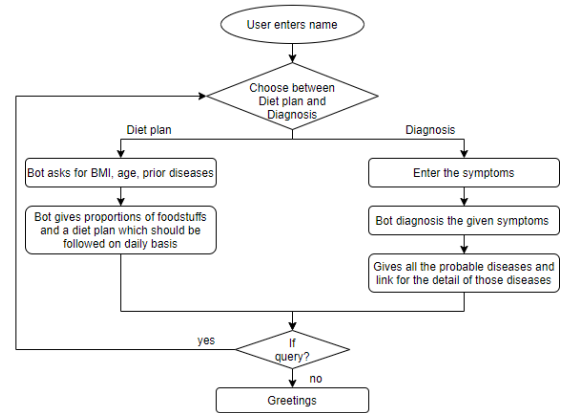### B. Working of Womaniyaa Bot

Fig 1: Flowchart diagram of our healthcare bot

The procedure of controlling the bot is explained as follows:

The user is required to introduce his/her type of help from the bot, i.e.,t, i.e., for a diet plan or to diagnose the user. If the diet plan is selected, the user asks for the user's BMI, age, and preceding diseases. Established on the age and BMI the bot provides a diet plan, including proportions of food products to be ingested by the user everyday. If the diagnosis function is selected, the user asks for symptoms. After every symptom, it asks for more symptoms (if any) and then checks for the symptoms in the database and registers a list of probable diseases. For details, it gives a link to the webpage having detailed data about that peculiar disease.

C. Dialogflow

Dialogflow might be a tongue understanding stage that makes it simple to style and coordinate a conversational interface into your portable application, network application, gadget, bot, interactive voice response system, and then on. Dialogflow have intents, entities, fulfillment, Dialogflow Messenger.

a. Intents

An intent classifies an end user's intention for one conversation turn. For each specialist, you characterize numerous aims, where your joined goals can deal with a whole discussion. At the point when an end-client composes or says something, referenced as an end-client articulation, Dialogflow matches the end-client articulation

to the main aim in your specialist. Matching an intent is additionally named to as intent classification.

b. Events

Entities which dictate exactly how data from an end-user expression is drawn out.

c. Contexts

Dialogflow *contexts* are similar to natural language context. Using contexts, you can command the flow of a conversation. You can configure contexts for intent by defining input and output contexts, which are named by string names. At the point when a purpose is coordinated, any arranged yield settings for that aim become dynamic. While any contexts are dynamic, Dialogflow is bound to coordinate purposes that are arranged with input contexts that relate to the as of now dynamic contexts.
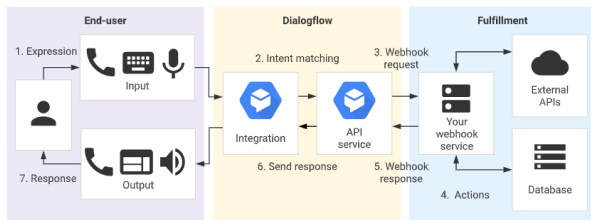

Fig 2: Flow for Fulfillment

From End-user to Fulfillment via Dialogflow:

1. The end-user types or speaks an expression.

2. Dialogflow coordinates the end-user expression to an intent and extracts parameters.

3. Dialogflow conveys a webhook request message to your webhook service. This message carries information about the matched intent, the action, the parameters, and thus the response defined for the intent.

4. Your service performs the actions as required, like database queries or external API calls.

5. Your service exports a webhook response message to Dialogflow. This message checks the response that ought to be shipped to the end-user.

6. Dialogflow sends the response to the end-user.

7. The end-user sees or hears the answer.

In short, we are carrying data from the user via Dialogflow passing the parameters to the online server running a query on the database.

IV. RESULT

We have got an Interactive Healthcare Bot in a network application that gives a diet program and analyzes user's symptoms to predict diseases and provide home remedies for it.
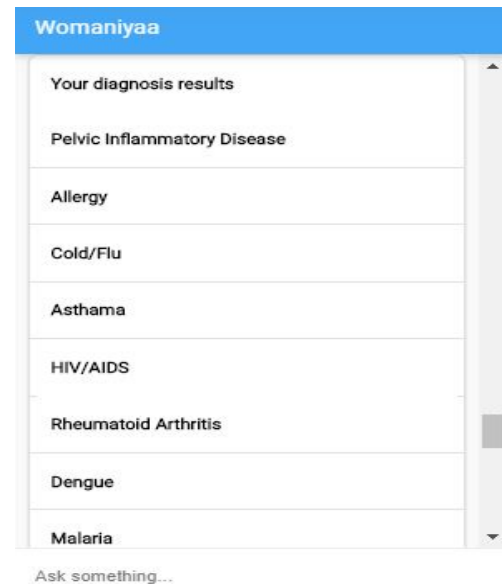

Fig 3: Result for diet plan

Fig 4: Result for disease diagnosis.

V. CONCLUSION

Chatbots in the medical services space are youthful and the degree for advancement is expansive. We have made the bot in small parts to traverse a very tiny set of diagnosing diseases for women founded on their symptoms and offering home remedies and providing a diet program. Using this estimate, there is a great deal of scope to improve Womaniyaa and take it to the following stage. One of the 13 challenges concerning the health care domain, in general, is that the data are sparse. Even if large datasets are available, it is difficult to run them to the bot as the answers from patients are unpredictable. Only a decade ago, chatbots and virtual assistants were just used. At once everyone takes in an assistant built into their phone which causes our lives more comfortable. We surely believe that chatbots have a flock of potential and the research trends and creativity, particularly in healthcare, is dying to be a game-changer.

VI. ACKNOWLEDGEMENT

VII. REFERENCES

[1] I. Faiz, H. Mukhtar and S. Khan, "An integrated approach of diet and exercise recommendations for diabetes patients," 2014 IEEE 16th International Conference on e-Health Networking, Applications and Services (Healthcom), Natal, 2014, pp. 537-542, doi: 10.1109/HealthCom.2014.7001899.

[2] J. C. C. Tseng et al., "An interactive healthcare system with personalized diet and exercise guideline recommendation," 2015 Conference on Technologies and Applications of Artificial Intelligence (TAAI), Tainan, 2015, pp. 525-532, doi: 10.1109/TAAI.2015.7407106.

[3] D. Economou et al., "PhytoCloud: A Gamified Mobile Web Application to Modulate Diet and Physical Activity of Women with Breast Cancer," 2017 IEEE 30th International Symposium on Computer-Based Medical Systems (CBMS), Thessaloniki, 2017, pp. 684-689, doi: 10.1109/CBMS.2017.164.

[4] M. Lee, H. Wu, J. Lin, Y. Chen, J. Y. Chiang and T. Tan, "Healthcare for patients with interstitial cystitis/bladder pain syndrome based on internet health education," 2012 International Conference on Computerized Healthcare (ICCH), Hong Kong, 2012, pp. 17-22, doi: 10.1109/ICCH.2012.6724464.

[5] https://cloud.google.com/dialogflow/docs/basics

[6] N. Nirwal, N. Sardana and A. J. Bhatt, "Hopeful hearts: A mobile health care application," 2014 Seventh International Conference on Contemporary Computing (IC3), Noida, 2014, pp. 351-356, doi: 10.1109/IC3.2014.6897199.

[7] C. Huang, M. Yang, C. Huang, P. Chiu, Z. Liu and R. Chang, "Design and implementation of a dynamic healthcare system for weight management and health promotion," 2017 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), Singapore, 2017, pp. 2386-2390, doi: 10.1109/IEEM.2017.8290319.

[8] N. Archer and R. Aria, "Reducing Risk from Chronic Illness with Life Style Changes Supported by Online Health Self-Management," 2019 IEEE/ACM 1st International Workshop on Software Engineering for Healthcare (SEH), Montreal, QC, Canada, 2019, pp. 73-76, doi: 10.1109/SEH.2019.00020.

[9] M. A. Subhi, S. H. Ali and M. A. Mohammed, "Vision-Based Approaches for Automatic Food Recognition and Dietary Assessment: A Survey," in IEEE Access, vol. 7, pp. 35370-35381, 2019, doi: 10.1109/ACCESS.2019.2904519.

[10] D. Jang, J. Kim, S. Sohn and K. Han, "Development of a mobile e-Health care system for rapid detection of emergent situations," The 5th International Conference on New Trends in Information Science and Service Science, Macao, 2011, pp. 93-96.

[11] B. M. Silva, I. M. Lopes, J. J. P. C. Rodrigues and P. Ray, "SapoFitness: A mobile health application for dietary evaluation," 2011 IEEE 13th International Conference on e-Health Networking, Applications and Services, Columbia, MO, 2011, pp. 375-380, doi: 10.1109/HEALTH.2011.6026782.