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## Problem:

1. Individuals follow their doctor's recommendations to undergo different health check-ups, such as blood tests, MRI scans, X-rays, and receive complex medical reports. However, they often encounter difficulties in comprehending these reports. Understanding the significance of each term mentioned in their reports poses a challenge. For instance, blood tests may include various assessments like SGOT and SGPT, but individuals struggle to grasp the meaning and implications of these terms. They are provided with limited information regarding the test results and average counts, and consequently, they rely on medical consultants to interpret this data accurately.

OR

People on doctor's advice perform various health check ups like Bloodtests,MRI's ,X rays,Complex Medical Reports but have trouble interpreting them.It becomes hard for them to understand the meaning of each of the term present in their reports for eg. For blood tests,there may be various checkups for like SGOT,SGPT but they can't understand what the term means and what does it signify and is given a limited amount of information about their respective test's count and the average amount count and rather require a medical consultant's attention to interpret these informations.

2. In addition, the doctor prescribes several medications to the patient, but the patient lacks knowledge about them, including their potential side effects and alternative options that could be more affordable. Furthermore, the patient struggles to grasp the intended purpose of the prescribed medication.

OR

Alongwith it,a doctor prescribes various medications to the patient of which he is completely unaware of and its various side effects and different alternatives for it which may be quite cheaper for them along with it,he doesn't seem to understand the purpose of that prescribed medication.

## Categorizing the problem queries we will focus on:

### Category 1: General Information and Educational Queries

Provide general information about common medical topics, terminology, and procedures.  
Offer educational resources on health and wellness.

### Category 2: Report Interpretation Guidance

Assist users in understanding the general meaning of medical reports such as MRI, X-ray, or blood test results.

Explain common terms and provide a general interpretation of the findings.

Emphasize the need for professional medical evaluation for a conclusive diagnosis.

### Category 3: Potential Risk Assessment

Help users assess potential risks based on symptoms or reported conditions.

Offer general information on potential causes and next steps.

Encourage users to consult with a healthcare professional for a thorough evaluation.

### Category 4: Routine Test Result Explanation

Provide general explanations of routine test results (e.g., blood tests within normal ranges).

Offer basic interpretations based on standard reference ranges.  
Highlight the importance of professional medical consultation for comprehensive evaluation.

## Category 5: Symptom Checker and Red Flags

Help users evaluate their reported symptoms and identify potential red flags.  
Suggest possible causes or conditions related to the reported symptoms.  
Stress the significance of seeking medical advice for an accurate diagnosis and appropriate treatment.

## Category 6: Medicine Related Queries

Help users the medication they are prescribed, what may be the reason they are prescribed for, how will it affect their body, its potential side effects and if any alternatives are there present in the market.

## Category 7: Referral to Healthcare Professionals

Direct users to appropriate healthcare professionals for further evaluation and assistance.  
Provide information on how to find local doctors, clinics, or specialists.  
Reinforce the importance of consulting a qualified healthcare professional for personalized care.  
By categorizing the queries into these distinct areas, the AI platform can provide helpful information, initial interpretations, and guidance while making it clear that the ultimate decision and medical advice should come from a healthcare professional. This approach helps mitigate legal concerns while still assisting users in understanding their reports and encouraging appropriate medical consultation.

## Potential Target Audience:

### Patients with medical reports:

Targeting individuals who have received medical reports, such as MRI or X-ray results, and are looking for assistance in understanding the findings. These individuals may want to have a general interpretation of their reports before consulting with a healthcare professional.

### People with symptoms or concerns:

Targeting individuals who are experiencing symptoms or have specific health concerns. They may use your AI platform to evaluate their symptoms, understand potential causes, and determine whether further medical evaluation is necessary.

## Individuals with routine test results:

This audience comprises individuals who have received routine test results (e.g., blood tests) and are seeking explanations for their results. They may want to understand the significance of their test values within the standard reference ranges.

## Those interested in preventive healthcare:

Targeting individuals who are proactive about their health and interested in preventive measures. This audience may seek information about potential health risks, lifestyle modifications, and early detection strategies.

## Solution:

An AI based chatbot platform where a user uploads an image of the:

1. Reports and he gets a detailed explanation about what every term signifies i.e. if it's SGOT is elevated, he must know what does SGOT i.e. Its significance, why was he given the test, its purpose, how it will affect them and what he must do to decrease it (non medical, mostly lifestyle and diet changes as medication suggestions can result in legal jurisdiction).
2. A complete interpretation of the blood test report compiling all the terms and to what direction it focuses on i.e. his which body part is currently most probable to be affected and suggest to them some professional consultants if they need currently on integrating with Practo like services.
3. MRI, X Ray report interpretation about what it means and what all complex terms mean and a visualization about which part of the body is currently affected according to the reports, what they can do/must do to take care of these suggest to them some professional consultants if they need currently on integrating with Practo like services.
4. Provide general information about common medical topics, terminology, and procedures. And Offer educational resources on health and wellness by suggesting them some videos/content.
5. When the user adds a photo of his prescription about the medicines or the particular medicine he will get to know what is the purpose of the particular medicine, how will it affect their body, its potential side effects and if any alternatives are present in the market.
6. Cater user queries for any medical consultants/labs/specialists currently present near them.

## Revenue Model:

### 1. Targeted Advertising(Not Priority):

Incorporate targeted advertising within your chatbot platform. Collaborate with relevant healthcare brands or advertisers to display ads that align with user interests and needs. Implement non-intrusive and relevant advertising strategies to maintain a positive user experience.

### 2. Sponsorships and Content Partnerships:

Offer sponsored content, educational materials, or exclusive access to premium resources. Generate revenue through sponsored content, brand collaborations, or sponsored events for the users seeking lifestyle related changes.

### 3. Affiliate Marketing:

Partner with healthcare product or service providers as affiliates. Recommend their products or services within the chatbot platform and earn a commission for each referral or successful conversion.

### 4. Telemedicine Services Integration:

Integrate telemedicine services into the chatbot platform, allowing users to schedule virtual consultations or access remote healthcare services. Earn revenue through referral fees or revenue-sharing agreements with the telemedicine providers like Practo.

### 5. Data Analytics and Insights Reports:

Offer premium data analytics and insights reports to healthcare organizations, pharmaceutical companies, or insurance providers. Leverage the aggregated and anonymized user data to provide valuable market trends, consumer behavior insights, or patient population statistics.

## Features to Consider

### Enhanced Report Interpretation:

- a. **Advanced Terminology Explanation:** Improve the chatbot's ability to explain complex medical terms and jargon found in reports, providing users with a clear understanding of their implications.
- b. **Visualizations:** Generate visual representations of medical reports (e.g., charts, diagrams) to help users comprehend the affected areas or anomalies.

- c. Comparative Analysis: Provide users with comparisons of their current reports to previous ones, highlighting changes and trends for better understanding.
- d. Integration with Healthcare Providers: Facilitate seamless integration with local healthcare providers, enabling users to schedule appointments or consultations directly from the chatbot platform.

Feature: Enhanced Report Interpretation

UX Feature	Description
Terminology Pop-ups	Provide tooltips or pop-ups that display explanations for complex medical terms when hovered over.
Highlighted Keywords	Automatically identify and highlight important keywords in the reports to draw users' attention to them.
Interactive Reports	Allow users to interact with the report by zooming in/out, scrolling, and clicking on specific sections.

Expanded Educational Resources:

- a. Video Tutorials: Integrate a library of video tutorials on various medical topics, procedures, and health and wellness practices to offer comprehensive educational resources.
- b. Interactive Modules: Develop interactive modules or quizzes that allow users to test their knowledge and learn more about specific medical concepts.
- c. Expert Articles and Blogs: Curate articles and blog posts from medical professionals to offer insightful content and keep users informed about the latest developments.

Feature: Expanded Educational Resources

UX Feature	Description
Video Library	Create a visually appealing video library with categorized topics, search functionality, and progress tracking for each tutorial.
Interactive Quizzes	Design interactive quizzes that provide immediate feedback and allow users to test their knowledge.
Expert Content	Display expert articles and blog posts with a clean and readable layout, accompanied by related articles and user comments.



Symptom Assessment and Triage:

- a. Symptom Checker: Enable users to input their symptoms and receive preliminary information on potential causes and suggested next steps.
- b. Triage Recommendations: Provide users with guidance on the severity of their symptoms and when it may be necessary to seek immediate medical attention and what all lifestyle,non medical changes[Legal Jurisdiction] do they need to get themselves improved.
- c. Integration with Healthcare Providers: Facilitate seamless integration with local healthcare providers, enabling users to schedule appointments or consultations directly from the chatbot platform.

Feature: Symptom Assessment and Triage

UX Feature	Description
User-Friendly Input	Design an intuitive interface for users to input their symptoms, including dropdowns, checkboxes, or text fields.
Visualized Results	Present symptom assessment results using clear visual indicators, such as color-coded severity levels or graphs.
Call to Action	Provide clear and actionable recommendations based on symptom severity, such as "Seek immediate medical attention."

Medication Insights:

- a. Detailed Medication Information: Offer comprehensive details about prescribed medications, including their purpose, dosage instructions, potential side effects, and interactions with other drugs.
- b. Alternative Medications: Suggest alternative medications that may be more affordable or have fewer side effects, promoting informed decision-making.

- c. Medication Reminders: Introduce a feature that allows users to set reminders for taking medications, ensuring adherence to prescribed treatments.

Feature: Medication Insights

UX Feature	Description
Clear Medication Info	Display medication details in a concise and easy-to-read format, including purpose, dosage, side effects, and warnings.
Alternative Suggestions	Offer alternative medication options with a brief comparison of benefits, side effects, and cost considerations.
Customizable Reminders	Allow users to set personalized reminders for medication schedules, including frequency and notification preferences.

Referral and Consultation Services:

- a. Provider Directory: Develop a comprehensive directory of healthcare professionals, clinics, and specialists, along with user reviews and ratings for easy reference.
- b. Telemedicine Integration: Partner with telemedicine service providers to facilitate virtual consultations and seamless access to healthcare professionals.
- c. Appointment Scheduling: Enable users to schedule appointments with healthcare providers directly through the chatbot platform, offering convenience and reducing administrative burdens.

Feature: Referral and Consultation Services

UX Feature	Description
Comprehensive Search	Enable users to search for healthcare providers using filters like location, specialty, ratings, and patient reviews.
Seamless Integration	Integrate a smooth and straightforward process for scheduling appointments or virtual consultations with providers.
Appointment Reminders	Send timely reminders to users about upcoming appointments, including details like date, time, and preparation steps.

Personalized Health Recommendations:

- a. Health Risk Assessment: Provide personalized health risk assessments based on user input, lifestyle factors, and medical history, along with recommendations for preventive measures.
- b. Wellness Plans: Offer personalized wellness plans that include diet, exercise, and lifestyle recommendations to promote overall health and well-being.
- c. Integration with Wearables and Health Trackers: Integrate with wearable devices and health trackers to collect and analyze user health data, providing personalized insights and recommendations.

Feature: Personalized Health Recommendations

UX Feature	Description
Personalized Surveys	Create interactive surveys or questionnaires to gather user information and customize recommendations.
Tailored Wellness Plans	Generate personalized wellness plans with specific recommendations for diet, exercise, and lifestyle changes.
Wearable Integration	Integrate with popular wearable devices to sync health data and provide real-time feedback and insights.

d.

Data Analytics and Insights:

- a. User Behavior Analytics: Gather and analyze user interaction data to gain insights into user preferences, patterns, and needs, aiding in continuous improvement of the platform.
- b. Integration with Electronic Health Records (EHR): Explore the possibility of integrating with electronic health record systems to securely access and analyze relevant user health data. This integration can provide a more comprehensive view of the user's medical history(ABHA Card), enable better personalized recommendations, and facilitate seamless collaboration between the chatbot platform and healthcare providers.
- c. Reporting and Insights: Generate reports and analytics for healthcare organizations, pharmaceutical companies, or insurance providers, providing valuable market trends and consumer behavior insights.Provide users with their yearly based medical reports.

### Feature: Data Analytics and Insights

UX Feature	Description
User Insights	Provide users with personalized insights based on their interactions and preferences within the chatbot.
Visualized Analytics	Present data analytics and trends in visually appealing charts or graphs to aid in understanding and analysis.
Customizable Reports	Allow users to customize and generate reports based on specific parameters, such as date range or data filters.

## KPI's (Key Performance Indicator)

Here are suggested Key Performance Indicators (KPIs) for each of the features mentioned:

### Enhanced Report Interpretation:

- Terminology Explanation Accuracy: Measure the accuracy of the chatbot in explaining complex medical terms and jargon by comparing its explanations with expert opinions or reference sources.
- User Understanding: Conduct user surveys or collect feedback to assess users' understanding of medical reports after using the chatbot's enhanced interpretation features.
- Integration Adoption Rate: Track the number of users who schedule appointments or consultations directly from the chatbot platform, indicating successful integration with healthcare providers.

### Expanded Educational Resources:

- User Engagement: Measure the number of users accessing and interacting with the video tutorials, interactive modules, and expert articles.
- Knowledge Gain: Conduct user assessments to evaluate the increase in users' medical knowledge and understanding after utilizing the educational resources.
- Content Effectiveness: Gather user feedback and ratings to assess the quality and usefulness of the video tutorials, interactive modules, and expert articles.

### Symptom Assessment and Triage:

- Symptom Checker Usage: Measure the frequency of users utilizing the symptom checker feature to assess potential causes of their symptoms.

- **Triage Accuracy:** Assess the accuracy of the chatbot's recommendations for the severity of symptoms and when to seek immediate medical attention by comparing them with professional medical guidelines.
- **Integration Adoption Rate:** Track the number of users who schedule appointments or consultations directly from the chatbot platform, indicating successful integration with healthcare providers.

#### Medication Insights:

- **Medication Information Retrieval:** Measure the frequency of users accessing detailed information about prescribed medications through the chatbot.
- **Alternative Medication Adoption Rate:** Track the percentage of users who consider and switch to alternative medications based on the chatbot's suggestions.
- **Medication Adherence:** Monitor user feedback and self-reported medication adherence rates after utilizing the medication reminders feature.

#### Referral and Consultation Services:

- **Provider Directory Usage:** Measure the number of users accessing and utilizing the comprehensive directory of healthcare professionals and specialists.
- **Telemedicine Adoption Rate:** Track the number of users who schedule virtual consultations with healthcare providers through the chatbot platform.
- **Appointment Scheduling Efficiency:** Measure the time taken and user satisfaction when scheduling appointments with healthcare providers through the chatbot.

#### Personalized Health Recommendations:

- **Health Risk Assessment Completion Rate:** Measure the percentage of users who complete the personalized health risk assessment based on user input and medical history.
- **Wellness Plan Engagement:** Assess user engagement with the personalized wellness plans, including the frequency of accessing recommendations and feedback on their effectiveness.
- **Wearable Device Integration:** Track the number of users who connect their wearable devices and health trackers to the chatbot platform for data collection and analysis.

#### Data Analytics and Insights:

- **User Behavior Analysis:** Analyze user interaction data to identify patterns, preferences, and needs, and use these insights to improve the platform and personalize user experiences.
- **EHR Integration Adoption Rate:** Track the number of users who grant secure access to their electronic health records (EHR) for a comprehensive view of their medical history and improved personalized recommendations.
- **Reporting and Insights Revenue:** Measure revenue generated from providing reports and analytics to healthcare organizations, pharmaceutical companies, or insurance providers.

These KPIs can be adjusted and customized based on your specific project goals and requirements.

When evaluating the performance and success of your chatbot platform, here are some key performance indicators (KPIs) to consider:

### 1. User Engagement:

- **Active Users:** Measure the number of active users interacting with your chatbot platform over a specific period.
- **Session Duration:** Track the average duration of user sessions to gauge engagement and the value users derive from the platform.
- **Interactions per Session:** Monitor the number of interactions or queries made by users during each session to assess the level of user engagement and utilization.

### 2. User Satisfaction:

- **Customer Satisfaction (CSAT) Score:** Conduct user surveys or collect feedback to gauge user satisfaction with the platform and its services.
- **Net Promoter Score (NPS):** Measure the likelihood of users recommending your platform to others, indicating overall satisfaction and loyalty.

### 3. Conversion and Revenue:

- **Conversion Rate:** Track the percentage of users who convert to buy the particular alternative suggested medicines or perform a consultation with the Doctors.
- **Revenue Generation:** Measure the revenue generated from partnerships, data licensing, or other revenue streams such as immediate consultation with a doctor through integration with certain doctors on Practo.

### 4. Accuracy and Quality:

- **Accuracy of Interpretation:** Assess the accuracy of medical report interpretations provided by the chatbot by comparing them with expert opinions or ground truth data.
- **Error Rate:** Monitor and minimize any errors or misinterpretations made by the chatbot, ensuring the quality of information and guidance provided.

### 5. Retention and Churn:

- **User Retention Rate:** Measure the percentage of users who continue using the platform over a specific period.
- **Churn Rate:** Track the rate at which users discontinue using the platform or cancel their consultations. We need to aim to minimize churn through continuous improvement and addressing user concerns.

### 6. Referrals and Partnerships:

- **Referral Rate:** Monitor the number of users referred to healthcare professionals or services through your platform.
- **Partnerships:** Assess the number and quality of partnerships established with healthcare providers, clinics, or telemedicine services.

### 7. Operational Efficiency:

- **Response Time:** Measure the average time taken by the chatbot to respond to user queries or requests.

- Uptime and Performance: Track the availability and responsiveness of the chatbot platform to ensure optimal user experience.

## User Journey for a user

User Journey: John - Seeking Medical Report Interpretation

1. John, a 45-year-old individual, receives his medical reports, including MRI and blood test results.
2. John is unfamiliar with medical terminology and wants to gain a better understanding of his reports before consulting with a healthcare professional.
3. John searches online for a solution and comes across an AI-powered chatbot platform that offers enhanced report interpretation.
4. Intrigued by the platform's capabilities, John visits the website and learns about its features, such as advanced terminology explanation, visualizations, and comparative analysis.
5. John decides to give it a try and signs up for an account on the chatbot platform.
6. After logging in, John navigates to the "Report Interpretation" section of the chatbot platform.
7. John uploads his medical reports, including the MRI and blood test results, using the platform's user-friendly interface.
8. The chatbot platform begins analyzing the reports and extracting relevant information.
9. Within moments, the chatbot presents John with a detailed explanation of the complex terms and jargon found in his reports, helping him comprehend their implications.
10. To further aid John's understanding, the chatbot generates visualizations such as charts and diagrams that highlight the affected areas or anomalies.
11. The chatbot also provides a comparative analysis, showing John how his current reports compare to previous ones, identifying any significant changes or trends.
12. Impressed with the insights gained from the chatbot, John decides to schedule a consultation with a healthcare professional to discuss his reports in detail.
13. The chatbot platform seamlessly integrates with local healthcare providers, allowing John to schedule an appointment directly from the platform.
14. John selects a convenient time slot and confirms the appointment, receiving a confirmation notification.
15. Before ending his session on the chatbot platform, John explores other features such as the expanded educational resources, where he finds video tutorials and expert articles on various medical topics.
16. John leaves the chatbot platform feeling more informed and confident about his medical reports, ready to engage in a productive discussion with his healthcare professional.
17. In the future, John continues to rely on the chatbot platform for report interpretation and other healthcare-related queries, appreciating the convenience and valuable insights it provides.

Product UI