# Problem–Solution Fit – HealthAI

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Project Name: HealthAI

Maximum Marks: 5

## CUSTOMER SEGMENT(S)

* Adults aged 25–60 who are tech-savvy and comfortable with digital solutions.
* Urban professionals with demanding schedules who find it challenging to book and attend regular doctor appointments for minor concerns.
* Individuals managing chronic conditions (e.g., pre-diabetes, mild hypertension) who require consistent monitoring and personalized guidance.
* People actively seeking quick, reliable, AI-based symptom checks or initial treatment advice without immediate clinical visits.
* Users who prioritize data privacy and clear, understandable health information.

## JOBS-TO-BE-DONE / PROBLEMS

* Get reliable, personalized medical information quickly without requiring a physical clinic visit for every minor ailment.
* Understand complex symptoms and receive initial, trustworthy guidance on potential conditions and their severity.
* Track and visualize personal health-related metrics (e.g., heart rate, blood pressure, blood glucose, symptom frequency) over time.
* Obtain a personalized, actionable plan for managing minor illnesses or supporting chronic condition management.
* Reduce anxiety and confusion caused by conflicting or overwhelming online health searches.

## TRIGGERS

* Feeling unwell with mild but concerning symptoms (e.g., persistent cough, unusual fatigue, minor pain).
* Experiencing recurring symptoms for which past casual internet searches provided no clear answers or caused alarm.
* Having no immediate or easy access to a trusted medical professional or health assistant.
* Wanting a convenient way to keep personal health logs and monitor trends for self-management or future doctor consultations.
* Desire for proactive health management and preventative insights.

## EMOTIONS (BEFORE / AFTER)

* Before: Anxious, uncertain, overwhelmed, frustrated by conflicting internet search results, dismissive of minor symptoms due to inconvenience, concerned about data privacy with general health apps.
* After: Reassured, informed, empowered with actionable next steps, in control of health decisions, confident in understanding health trends, appreciative of data privacy.

## AVAILABLE SOLUTIONS

* Googling symptoms:  
  Pros: Easy access, immediate results.  
  Cons: Often confusing/misleading information, overwhelming volume, lack of personalization, no actionable plan, not conversational, can cause anxiety.
* Generic Health apps (e.g., WebMD, general symptom checkers):  
  Pros: Organized information, some symptom-checking tools.  
  Cons: Lack of deep personalization, generic responses, not conversational, limited accuracy for complex cases, often booking-focused, may not visualize personal data.
* Consulting friends/family:  
  Pros: Familiarity, emotional support.  
  Cons: Unreliable, non-personalized, based on anecdotal evidence, not medical advice.
* Traditional AI bots:  
  Pros: Conversational.  
  Cons: Limited accuracy or functionality for complex medical queries, not specialized, often lack data visualization.

## CUSTOMER CONSTRAINTS

* Lack of medical knowledge: Difficulty interpreting complex medical terms or understanding symptom significance.
* Time constraints for appointments: Busy schedules make regular doctor visits impractical for minor issues.
* Limited trust in free online sources: Skepticism about the reliability and accuracy of general internet health advice.
* Budget limitations for private consultation: Cost can be a barrier for frequent, minor health checks.
* Privacy concerns: Hesitancy to share sensitive health data with unverified or non-secure platforms.

## BEHAVIOUR

* Searching symptoms on Google or health blogs immediately when a new symptom appears.
* Asking friends or family for advice on home remedies or experiences.
* Using existing health apps primarily for appointment booking or prescription reminders.
* Manually tracking vitals (BP, sugar) in notebooks or basic spreadsheets.
* Delaying seeking professional medical advice until symptoms become severe due to inconvenience.

## CHANNELS of BEHAVIOUR

* ONLINE:  
  - Searching symptoms on web search engines (Google, Bing).  
  - Reading health articles and blogs.  
  - Using health apps (e.g., WebMD, generic symptom checkers).  
  - Watching health-related videos on YouTube.  
  - Posting health queries in online forums or Reddit.
* OFFLINE:  
  - Visiting general physicians (when time permits or symptoms are severe).  
  - Discussing symptoms informally with colleagues or family.  
  - Using paper logs for blood pressure/sugar tracking.  
  - Visiting pharmacies for over-the-counter advice.

## PROBLEM ROOT CAUSE

* Healthcare systems are often reactive rather than proactively empowering individuals with accessible, personalized health management tools.
* People delay seeking appropriate treatment due to a lack of immediate, trustworthy insight into symptom severity or effective self-care options.
* Most digital health platforms provide either generic advice, focus on booking, or lack true conversational AI capabilities for medical context.
* There is no simple, intelligent, and integrated tool that combines accurate disease awareness, personalized treatment guidance, and interactive health trend tracking, all while prioritizing user data privacy.

## YOUR SOLUTION: HealthAI

* HealthAI directly bridges the gap between patient curiosity and clinical accuracy through its integrated approach:
* - A real-time conversational AI chatbot: Provides instant, context-aware responses to health queries (currently simulated with Google Gemini API, targeting IBM Granite).
* - AI-powered disease prediction and personalized treatment planning: Offers informed insights into potential conditions and generates tailored, actionable plans based on user input and patient profile (currently simulated with Google Gemini API, targeting IBM Granite).
* - Interactive health analytics dashboard: Visualizes personal health data trends (e.g., heart rate, BP, glucose, symptom frequency) using Plotly, complemented by AI-generated insights for proactive health management.
* - A modular, privacy-respecting application: Built using Streamlit for a user-friendly interface, designed with a focus on data security (session-based currently, future database integration will prioritize encryption and access control).
* - Foundation for downloadable reports: (Future enhancement) To aid in future reference or doctor consultations.
* HealthAI is cost-effective (free to use as a basic AI assistant, scalable for premium features), designed for seamless local deployment and cloud-deployable, and uniquely tuned for users who need intelligent, empathetic guidance without necessarily an immediate hospital visit—delivering empowerment and peace of mind.