CS 6440 Project Final Submission

HIV Management Portal – Final Submission
Term: Spring 2023
Group 1 - HIV Management

Section I: Project Overview

Project Title: *Group 1 - HIV Management*
Team Members and Roles/Responsibilities (If Applicable)

- *Henna Mian - Front End Developer*
- *Shruthi Saravanan - Full Stack Developer*
- *Vedant Bhat - Back End Developer*
- *Nishant Thangada - Full Stack Developer*
- *Ritvik Bhagawatula - Full Stack Developer*

TA Mentor: *Aman Tahiliani*
External Mentor (If Applicable): *N/A*

Project Task Status

Week	Project Task	Needs	Risks
2/27 - 3/6	• Practicum Sprint #2	None	None
3/6 - 3/13	• Evaluating a cloud service to host the web application on • Determine what database/dataset to use • Pick which APIs and Libraries we will use	Access to a suitable dataset for implementing HIV management functionalities in the portal, such as patient data, lab results, medication information, etc. Can be handled with a sample dataset similar to one from the prior labs.	Inability to obtain industry standard software without funding Lack of knowledge pertaining to specifics of languages or softwares

		A robust architecture diagram with an industry-standard method to install and configure the necessary software and tools, such as Firebase, EJS, VScode	
3/13 - 3/20	• Practicum Sprint #3 • Develop landing page component • Add content to describe the application and information about HIV	Knowledge of and experience working with web framework, HTML, CSS, ExpressJs, and Firebase, Express-Sessions for information management	Unexpected complexities in integrating the different components of the project, such as the frontend, backend, and databases, could lead to errors or delays.
3/20 - 3/27	• Build component that allows users to register into our app • Build component that allows existing users to log into our app • Build component that displays profile information from the landing page	Figuring out a way to allow users to authenticate within our application and to provide them their proper healthcare data	Authentication is not secure or fails, allowing users to access others' information or not allowing users to access their own information
3/27 - 4/3	• Practicum Sprint #4 • Build component that allows users to create reminders consisting of date and time • Build component that alerts users after	Access to Firebase for appointment reminders. We want to ensure that each user has an associated uid for their own	Privacy and security leakages surrounding appointment information and personal data Improper setup that

	logging in about their reminders • We decided to switch from MongoDB and Flask to Firebase and JS.	respective information.	could cause users to not be reminded of appointments
4/3 - 4/10	• Build an exercise page component from the landing page called exercise with a list of basic exercises (walking, running, treadmill, elliptical, calisthenics, etc.) • Build components on each basic exercises page that lets user log the date and exercise length	Access to the necessary sources to implement interactive components for the front end of our application. Proper usage of the firebase database to distinguish user's diet, exercise, and appointment information.	Lack of experience with javascript, html, and utilizing cloudflare to construct interactive calendars
4/10 - 4/17	• Practicum Sprint #5 • Build a dropdown list component from the landing page called diet with breakfast, lunch, dinner, and snack listed • Build component that allows user to select date and food for a specific meal • Build component that populates calorie/nutrition intake • Build display component on landing page with user's relevant information	Knowledge of software testing and quality assurance techniques to ensure the application is reliable and bug-free; this can be done by consulting with our mentor.	Inadequate testing and quality assurance procedures could result in errors or bugs in the application, compromising patient data or causing other issues.

	• Build display component on diet page with calorie intake for a user-selected date		
4/17 - 4/24	• Practicum Sprint #6 • Review final project • Submit Final Project	None	Technical limitations of the hosting platform (Heroku), deployment issues, and interoperability issues between Heroku and FHIR could impact the performance or functionality of the application.

Section II – Project Artifacts

Deployed Application URL: *https://hiv-management.herokuapp.com*
GitHub Repository Link: *https://github.gatech.edu/vbhat34/HIV-Management*
GitHub Branch or Commit to Grade (If Applicable): *main (most up to date commit)*

Section III – Project Presentation

Presentation Link: https://youtu.be/jFC3GPJ9rMs

Section IV – Project Documentation

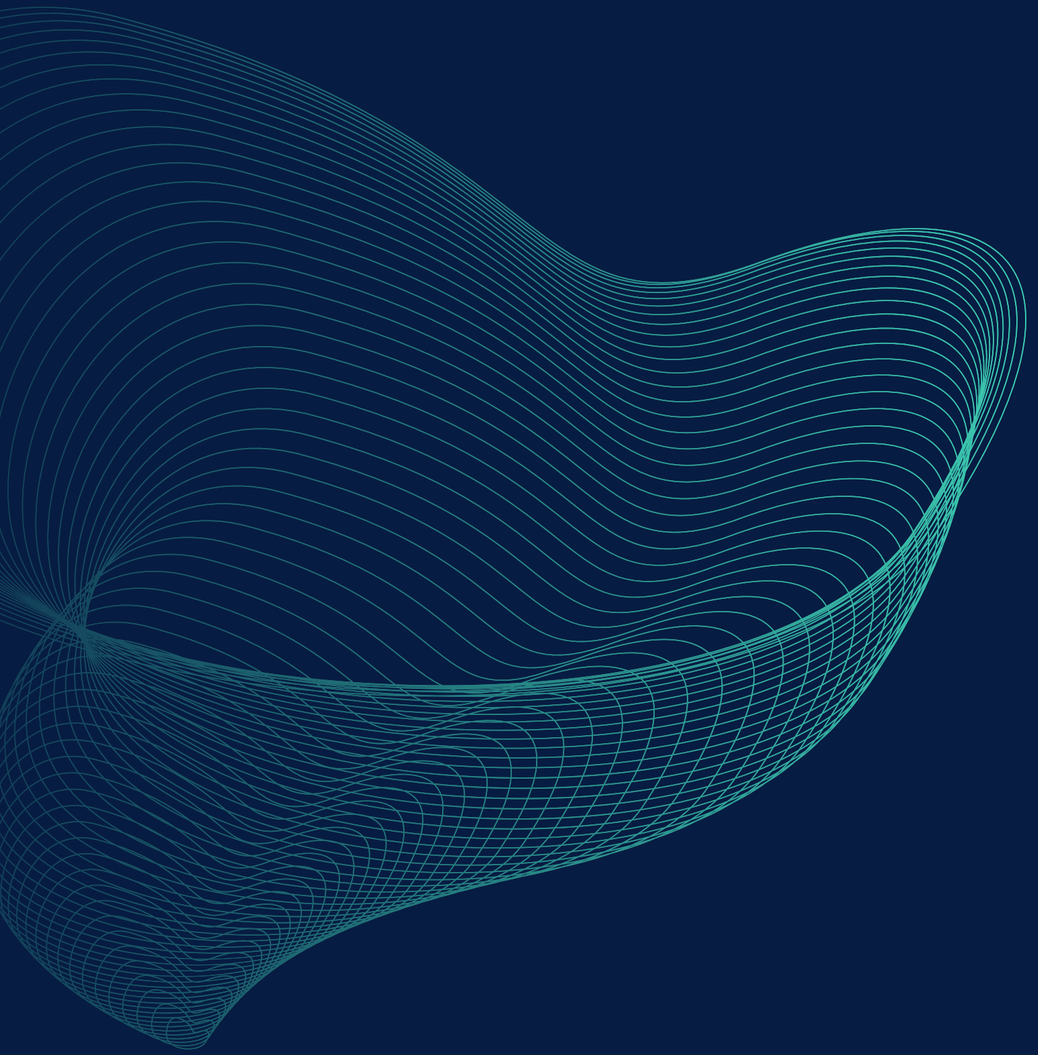
- Technical and/or User Manual: https://github.gatech.edu/vbhat34/HIV-Management/blob/main/documentation/technical-documentation.md
- Research: https://github.gatech.edu/vbhat34/HIV-Management/blob/main/documentation/research.md
- Architecture Diagram:
    - https://github.gatech.edu/vbhat34/HIV-Management/blob/main/documentation/design.md

    - https://github.gatech.edu/vbhat34/HIV-Management/blob/main/documentation/sprint-planning.md
- Startup and Configuration Files: https://github.gatech.edu/vbhat34/HIV-Management/blob/main/documentation/technical-documentation.md

HIV Helper

GROUP 1 HIV MANAGEMENT WEB APPLICATION

Vedant Bhat, Ritvik Bhagawatula, Henna Mian, Shruthi Saravanan, Nishant Thangada



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3. CURRENT IMPLEMENTATION STATUS
4. RESEARCH
5. PROJECT DEMO
6. FUTURE WORK

Introduction

HIV (human immunodeficiency virus) is a virus that attacks the body's immune system and is a chronic, life-threatening disease that affects **millions** of people worldwide. If HIV is not treated, it can lead to **AIDS (acquired immunodeficiency syndrome)**.

How do we combat it?

The management of HIV goes beyond controlling the condition with drugs and medical appointments - a healthy lifestyle is also crucial for people living with HIV.

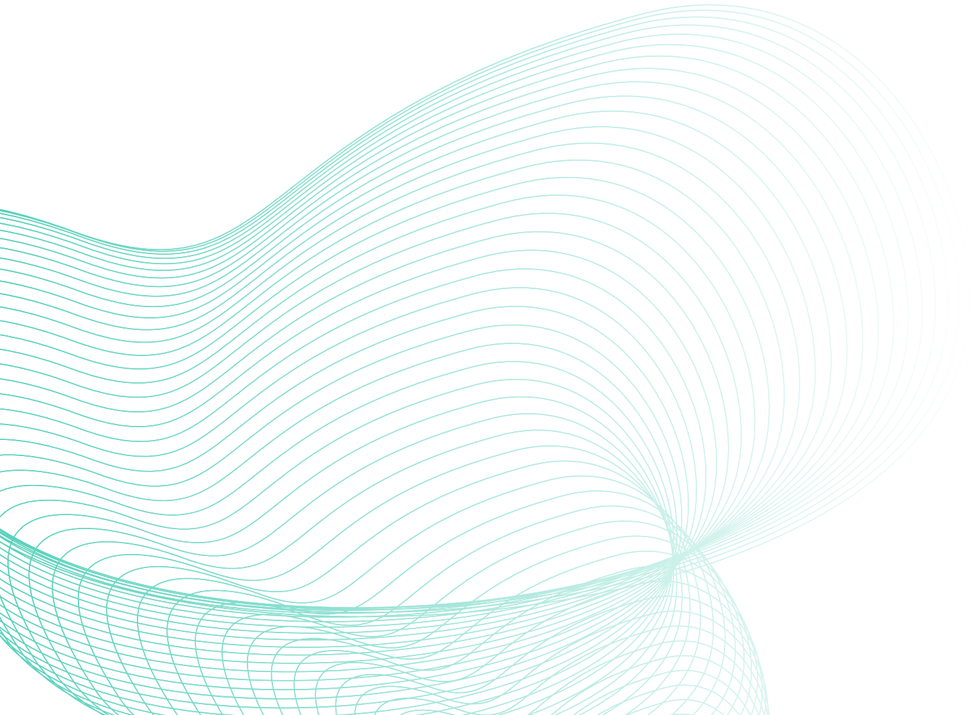
Exercise

Diet

Staying Informed

HIV Helper Portal Features

Our application is user-friendly and provides individualized advice based on preferences and health objectives



Feature 1

diet planning

Feature 2

activity tracking

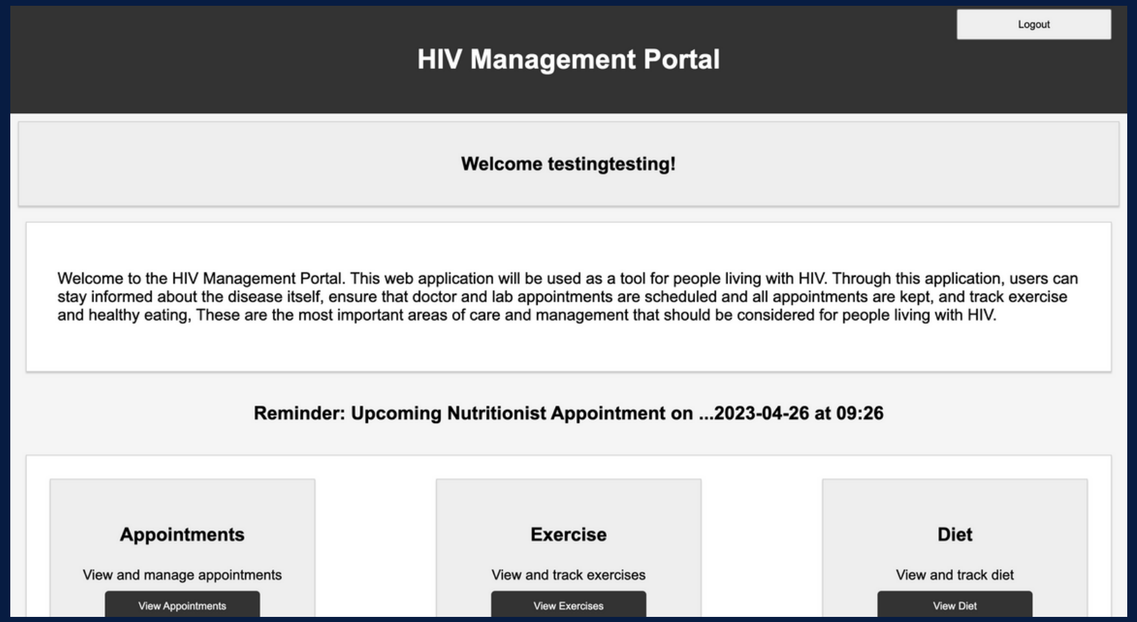
Feature 3

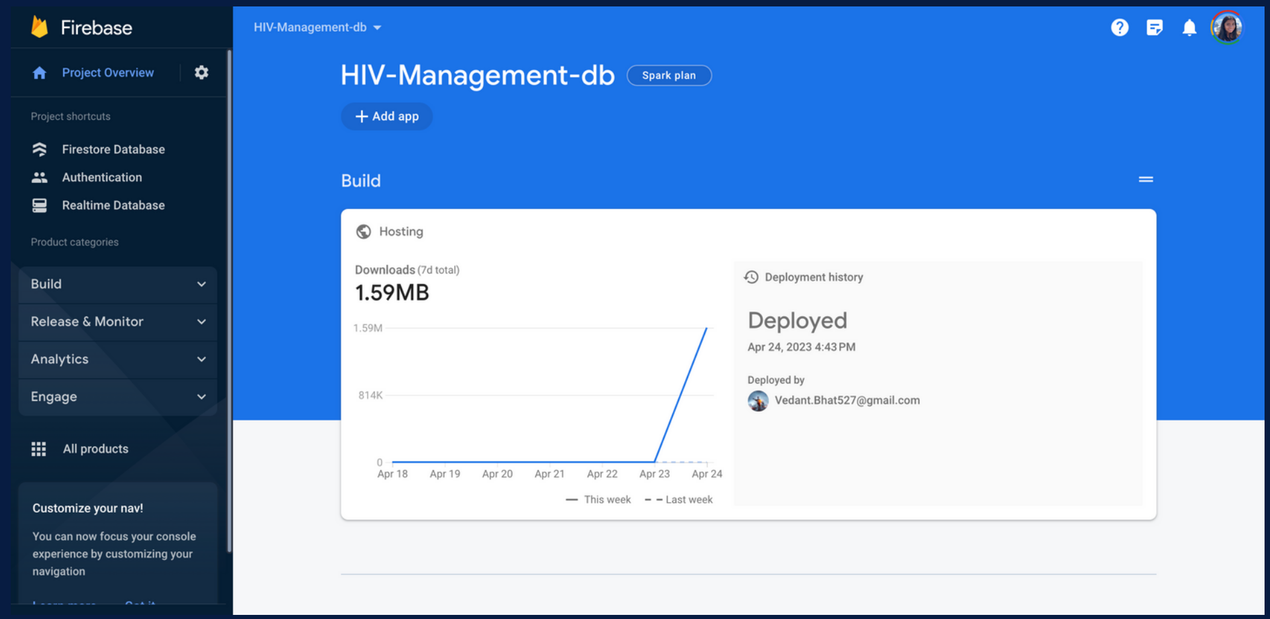
appointment scheduling

Feature 4

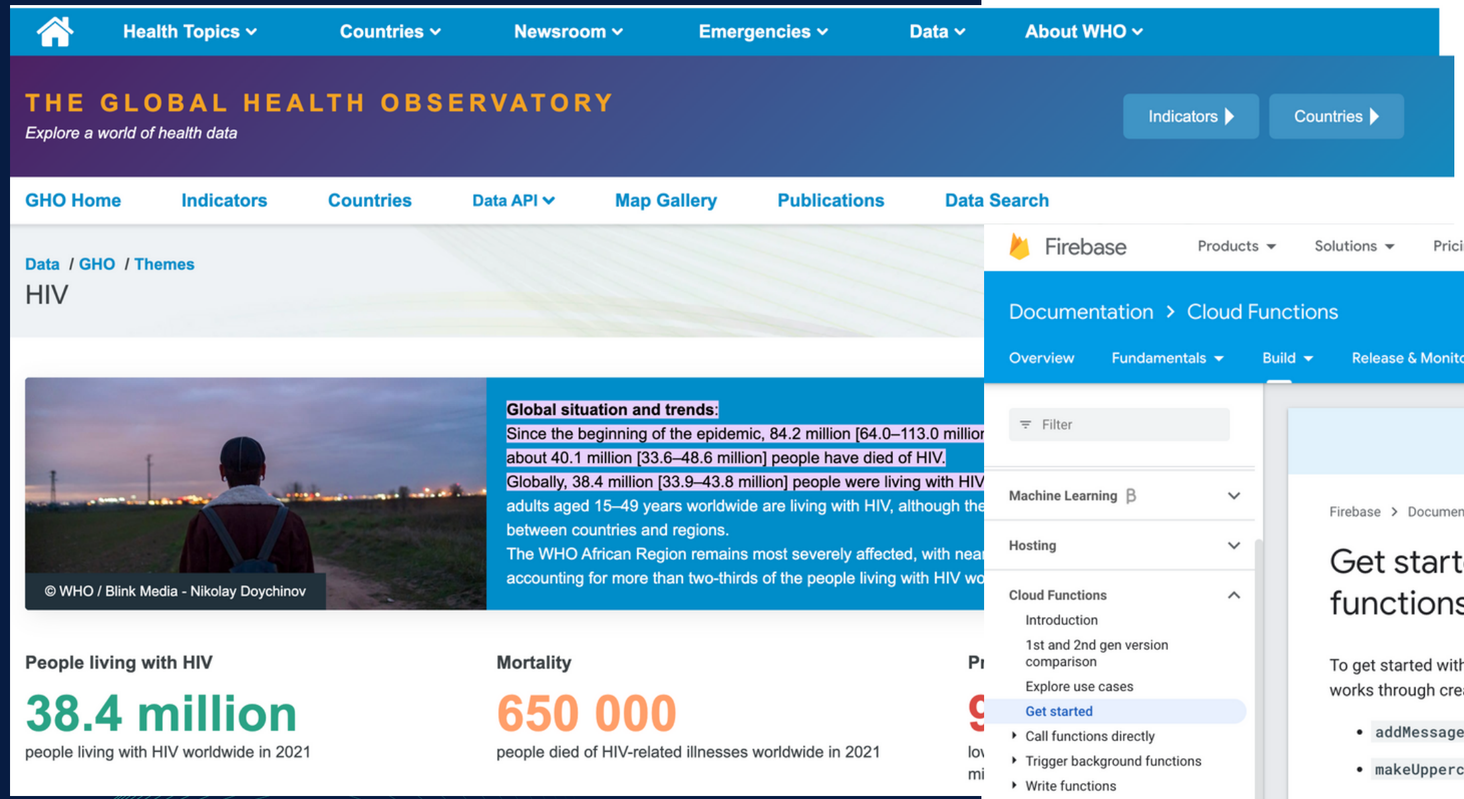
disease information

node application using Heroku and Firebase hosting services





Research


Health Topics
Countries
Newsroom
Emergencies
Data
About WHO
THE GLOBAL HEALTH OBSERVATORY
Explore a world of health data
Indicators
Countries
GHO Home
Indicators
Countries
Data API
Map Gallery
Publications
Data Search
Data / GHO / Themes
HIV
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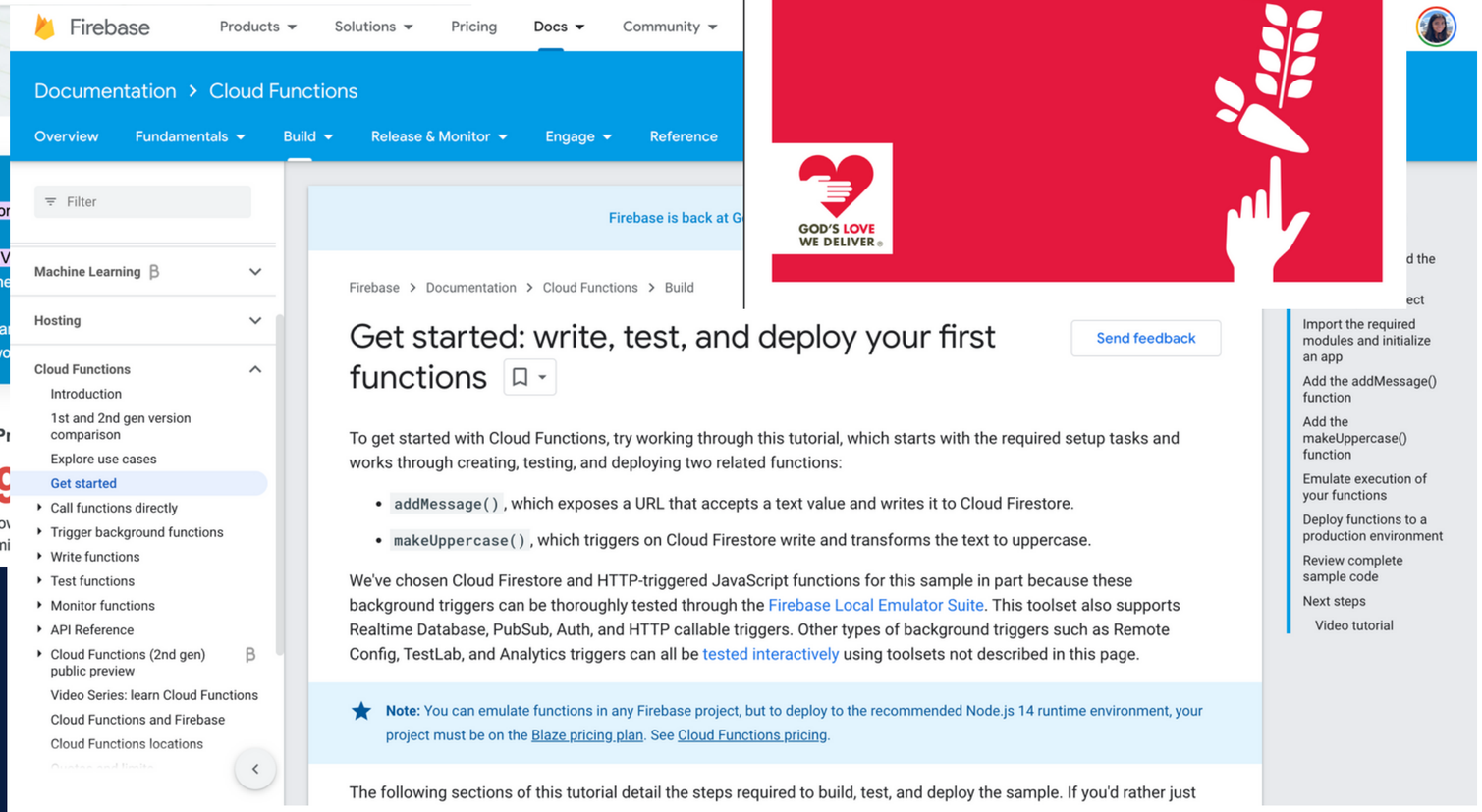
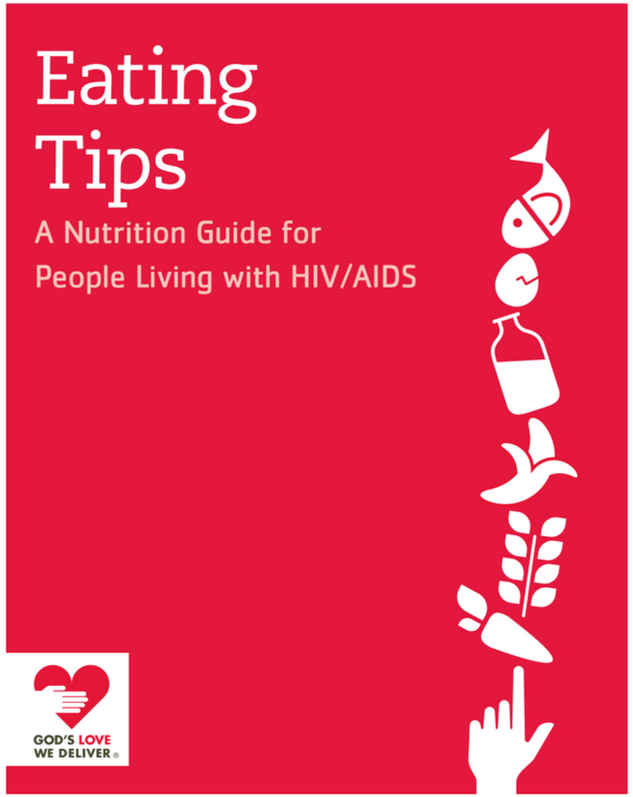
Global situation and trends:
Since the beginning of the epidemic, 84.2 million [64.0–113.0 millio
about 40.1 million [33.6–48.6 million] people have died of HIV.
Globally, 38.4 million [33.9–43.8 million] people were living with HIV
adults aged 15–49 years worldwide are living with HIV, although the
between countries and regions.
The WHO African Region remains most severely affected, with nea
accounting for more than two-thirds of the people living with HIV wo
People living with HIV
38.4 million
people living with HIV worldwide in 2021
Mortality
650 000
people died of HIV-related illnesses worldwide in 2021


Firebase
Products
Solutions
Pricing
Docs
Community
Documentation > Cloud Functions
Overview
Fundamentals
Build
Release & Monitor
Engage
Reference
Filter
Machine Learning
Hosting
Cloud Functions
Introduction
1st and 2nd gen version comparison
Explore use cases
Get started
Call functions directly
Trigger background functions
Write functions
Test functions
Monitor functions
API Reference
Cloud Functions (2nd gen) public preview
Video Series: learn Cloud Functions
Cloud Functions and Firebase
Cloud Functions locations
Firebase is back at G
Firebase > Documentation > Cloud Functions > Build
Get started: write, test, and deploy your first functions
Send feedback
To get started with Cloud Functions, try working through this tutorial, which starts with the required setup tasks and works through creating, testing, and deploying two related functions:
addMessage(), which exposes a URL that accepts a text value and writes it to Cloud Firestore.
makeUppercase(), which triggers on Cloud Firestore write and transforms the text to uppercase.
We've chosen Cloud Firestore and HTTP-triggered JavaScript functions for this sample in part because these background triggers can be thoroughly tested through the Firebase Local Emulator Suite. This toolset also supports Realtime Database, PubSub, Auth, and HTTP callable triggers. Other types of background triggers such as Remote Config, TestLab, and Analytics triggers can all be tested interactively using toolsets not described in this page.
Note: You can emulate functions in any Firebase project, but to deploy to the recommended Node.js 14 runtime environment, your project must be on the Blaze pricing plan. See Cloud Functions pricing.
The following sections of this tutorial detail the steps required to build, test, and deploy the sample. If you'd rather just
Import the required modules and initialize an app
Add the addMessage() function
Add the makeUppercase() function
Emulate execution of your functions
Deploy functions to a production environment
Review complete sample code
Next steps
Video tutorial


Eating Tips
A Nutrition Guide for People Living with HIV/AIDS
GOD'S LOVE WE DELIVER

Future Work

Overall, this project has yielded a working hosted web application that serves to assist people with HIV by giving them the know-how to navigate their condition.

1st party alerts on iOS and Android

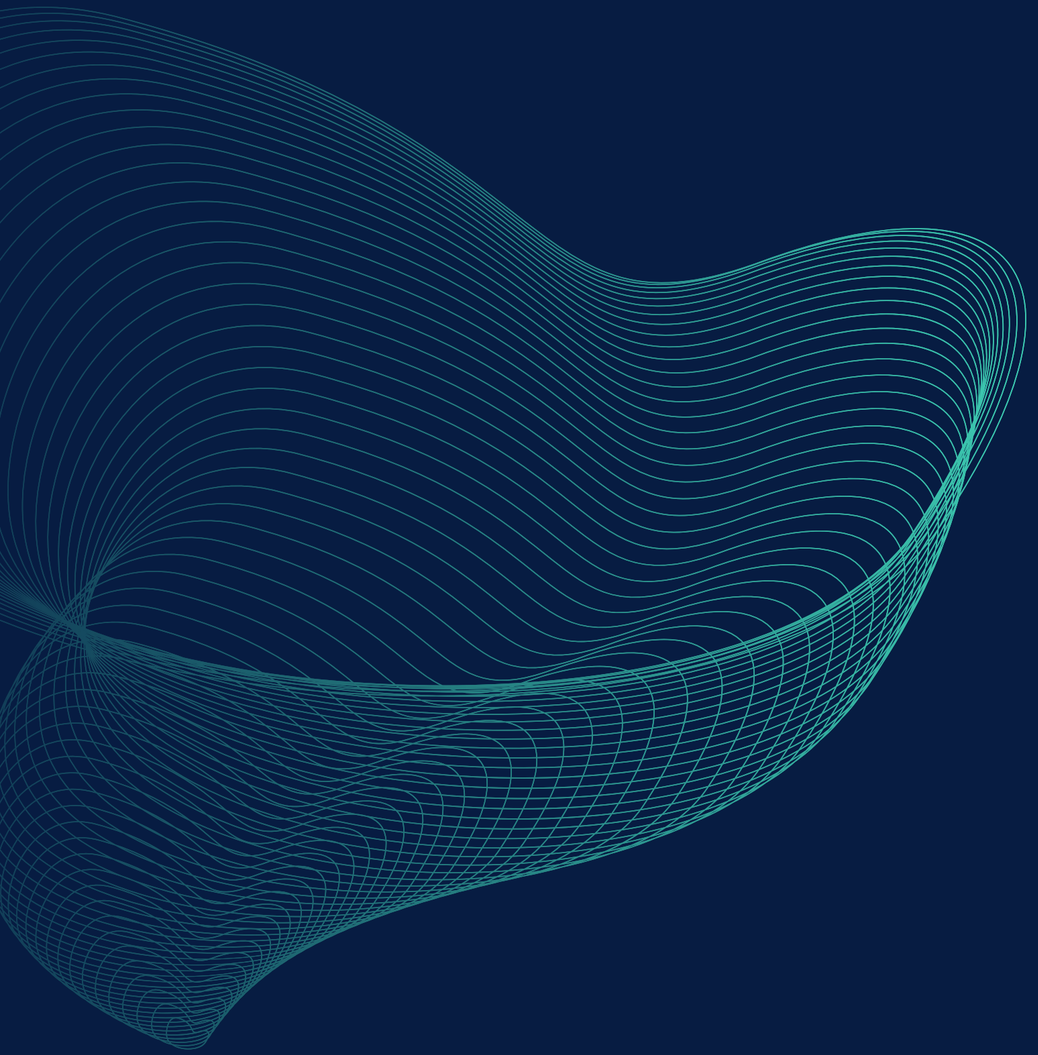
This would serve a greater user base since most individuals refer to their phones for any sort of reminders or quick utilization.

Implement TTS (Text to Speech) and other accessibility features

Allow individuals with disabilities the option to utilize the application as well.

Scaling to serve other healthcare domains

By expanding the scope of the application, it can cater to a broader audience and help individuals manage their health and well-being holistically.



Thank you!