**Seamless Care**

**Author(s):**

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**Dates of documentation:**

**25/06/2021: Draft created**

**25/06/2021: DevPost project skeleton created**

**28/06/2021: DevPost project skeleton created**

**Hackathon:** [COVID-19 Healthcare App Challenge](https://healthcareappchallenge.devpost.com/)

**Problem statement:**

Economic and social circumstances, access to testing and treatment, and underlying health conditions are just a few of the hurdles many underserved communities face. **What if you could build an app that made a difference? Changed lives? Developers can play a key role in fighting COVID-19.**

IQVIA's HealthCare Locator Software Developer Kit (SDK) provides pre-integration with one of the world's most extensive and accurate healthcare provider databases — with access to 21.5 million healthcare providers, 2.5 million healthcare organizations, updated daily (trial version provides limited data set). The SDK provides pre-built search & map display screens, and can be integrated in as little as two hours.

Our challenge to you: build an app using the HealthCare Locator SDK that facilitates better access to care for all, particularly those in underserved communities who were impacted by COVID-19. Some thought starters: vaccine locators, enabling telehealth communities, accessing remote mental health specialists, reviewing top-ranked health care providers for better care...the list goes on and on. We look forward to seeing your ideas.

**Aim: Verisafe and seamless access to healthcare services**

**Scope: Seamless access to a Healthcare** Practitioner / Healthcare Provider

**Vision: Verisafe Healthcare**

**URL:** [**http://www.venkataoec.wixsite.com/verisafenhealth**](http://www.venkataoec.wixsite.com/verisafenhealth)

**This website does not yet have a registered domain and is not currently referable without the complete URL**

**Description:**

The term **Verisafe stands for Veritable and Safe**

NOTE: Though India does not have this SDK support as yet, we thought it important to join in and describe the role of Seamless Care.

**Devpost URL:**

[**https://devpost.com/software/seamless-care-m3urbo**](https://devpost.com/software/seamless-care-m3urbo)

**YouTube Video URL:**

**Value for intent: Helping out for seamless healthcare**

**The proposed solution**

The solution proposes to help implement

* A Seamless bridge or connect to Healthcare Providers / Practitioners (with the help of the HealthCare Locator SDK)
* An Enabler for Patient Care (with the help of a Companion Card)
* An Enabler for Health & Medical History Information (with the help of a Companion Card)

**How can the solution help?**

We intend to design a Seamless Care framework and Companion Card to help people seamlessly connect to healthcare providers / healthcare practitioners.

As this competition is about using the Healthcare Locator SDK from a website, the intent will be to demonstrate a lookup for the healthcare services available, the specialty offered, the timings for services, the rates, the refunds.

We have explained our approach in the code fragment attached with the solution.

**As potential services in future versions of the SDK or via the insightful Seamless Care framework**

We would like to additionally design a lookup for

(a) For safe, veritable and immediate evaluation, or diagnosis, or care or operative procedures available at the sites reported

(b) Different diagnostic services available at the sites reported

(c) Emergency help assistance available at the sites reported

(d) Need based referrals facilitated by the sites reported

As we have yet to effectively use the SDK specific lookup, the above data is expected to be important but is still not available.

It can be included in future development and deployment.

**The scenarios of importance**

Scenario 1: On locating a healthcare provider / healthcare practitioner, the patient or person will be asked to register if possible.

The registration will involve the completing of a Companion Card sheet, where some details may be easy to fill in but some others will not be possible without earlier review and some planning for the recording / reporting of medical history details.

Scenario 2: A patient or person who does not register will be asked to do so with assistance at the Healthcare provider/clinic.

Scenario 3: A patient or person who does register but cannot fill in other details will be assisted to do so at the Healthcare provider/clinic.

Scenario 4: A patient or person who does register and complete the Companion Card sheet, will be requested to confirm or update any information as relevant at the Healthcare provider /clinic.

**Our Seamless Care and Companion Card details:**

**Name(\*):**

**Sex(\*): Age(\*): Blood Group(\*):**

**Medical history with record of immunization:**

**Medical history Details:**

**Immunization Details:**

**Whether on prescription medicines? Yes/No**

**Details:**

**Whether under treatment? Yes/No**

**Details:**

**Any adverse drug reactions:**

**Serum protein recording (for COVID-19 interpretations):**

**[ ] Normal [ ] Evaluation needed [ ] Unknown**

**Any life changing condition (if relevant):**

**Any sensitivity to priority infections or pathogens:**

**Any Anti-microbial resistance incidences (if relevant):**

**COVID 19 (status \*):**

**[ ] Normal [ ] Family incidence [ ] Quarantined**

**[ ] Treated and Recovered [ ] Recovering**

**[ ] Not tested appropriately**

**Last COVID/respiratory illness incidence:**

**Last major complaint:**

**Last bacterium complaint:**

**First-aid or Emergency services (medication, medical equipment, registration for emergency admission & need for treatment details, whom to contact numbers):**

**Linked AADHAAR/ Social Security No/Seamless Care No (\*):**

**Linked with Healthcare (Claim \*): Yes/No**

**Policy No:**

**Assistance needed in paying for services (\*): Yes/No**

**Need for assistance:**

In this sheet the fields marked by \* are mandatory and need to be filled almost always.

**Participation and silent observation**

The expectation for a poor person to use a SMART phone or the Internet may not be an always possible (as people go through different levels of financial stability).

In this case, the Healthcare services must be accessed via the Companion Card that could be a step towards seamless support for people who are poor, but have an Aadhaar Number or Social Security Number or have just a Seamless Care Number. The interest is to provide a Seamless Care number to people who need it at first and then incorporate more support.

The Companion Card could have a triggered sensor tracking function that reports the location of a person needing “emergency help, outbreak related help or serious implication specific healthcare” to a Seamless Care network that responds to provide healthcare services to the patient/person in appropriate manners.

This solution will need the Companion Card to be more advanced than today’s cards, where so many exist today. The insight is to develop a Seamless Care network to step into this nature of need and have innovations support the solutions possible.

**There can be 2 versions**

(1) **A regular Companion Card** where the sensor function is not enabled

(2) An **activated Companion Card** where the sensor function is enabled and expects to be a simple or more futuristic adaptation for Seamless Care

**Do it yourself options**

There are many commercial GPS trackers available, but the costs may be higher than what a facilitator can afford to spend on Companion Cards.

One Do-it-yourself option on the Internet is as follows:

1. Use a plastic box to house an Ultimate GPS breakout Arduino compatible chip/controller, a Particle Electron microcontroller with a 3G cellular modem, an Adafruit GPS chip, a Lithium ion Battery, a Breadboard, an LED, an USB board and an antenna connector. Sensor control could enable or disable the GPS tracking.

2. Place within the plastic box, the Companion Card with the required details facing outwards. For this, the plastic box will need to be transparent and this can help see the Companion Card details.

3. Building this Activated Companion Card can help serve more purposes than what we expect today

4. The ability to manufacture a cheap phone or Seamless Care device are steps that can be decided as fit.

5. As the world is moving towards 5G, we need to develop a Seamless Care network that either integrates into the wireless networking possible, or the 5G compatibility expected or the GPS solutions planned.

6. The current GPS trackers that are available commercially can be the option for this problem solving for Seamless Care. The extensive need may help the manufacturers reduce costs and breakeven.

7. There are options of GPS data loggers that do not need cellular SIM cards.

**When it comes to the solution**

As guided by the Healthcare Locator SDK, **we do expect to use the Locator software and support reporting of details such as**

**Dated:**

**Locator Reference:**

**Search results for (Select as applicable):**

**[ ] Required Healthcare services**

[ ] Healthcare provider / Practitioner names

[ ] Location proximity

[ ] Seamless Care support / integration **(future scope)**

[ ] Related Use of Machine Learning Algorithm for “Seamless Care” Clinical data **(future scope)**

**For implementing the future scope solution, we would need to revisit the following real-world issues:**

People are not expected to plan or recall details when looking up healthcare providers / practitioners at the time of need or crisis.

Lookup(s) are important as access, availability and machine learning algorithms can drive the results of searches. The lookup need not just mean reporting from a database.

The lookup need not simply mean reflecting status of healthcare facilities but could also start a seamless effort to avail healthcare at the provider/clinic or secure further assistance in-time.

The lookup can also help prioritize the healthcare services required or coordinate for any other resolution.

The lookup can also return search results based on parameters such as

(a) Time estimated for in-time services

(b) Time expected in connected clusters of healthcare providers (based on a similarity algorithm)

(c) Categorization of procedures or steps to follow

(d) Related assistance for being COVID-19 infection prone or for concern in being a suspected COVID-19 patient / infectious person.

The potential machine learning algorithms can help instruct the person / people around on what best is to be done when there is a serious concern.

**## How we built it**

We have tried to integrate the Healthcare Locator SDK into our website created using the Wix platform. The integration is work in progress as we have a proposal that looks further at the services expected.

For our concern about the response of the locator from our country (India), the team from HealthCare Locator did reply that this should not be a problem.

We have tried to document our approach in the code fragment attached with the solution.

**## Challenges we ran into**

We are concerned with being in a remote country like India where we are expecting to access HCP details in USA. The need for HCP detail is not only related to the countries supported by the Healthcare Locator SDK but is imperative for many more countries like India

**Our concern:** If the locator SDK did return results, we would still not be able to demonstrate in-time services as the names or results would be related to HCP(s) not known in this country.

**## Accomplishments that we're proud of**

We are proud to be working on problem solving to help seamless healthcare for COVID-19 suspected or prone incidences.

**## What we learned**

(Be it as an extreme case, that is, different country wise or be it as a more possible case, that is same country/state/region wise)

Seamless access to healthcare services is important and is not always proximity based, data about a HCP in a remote site can help other requirements.

If the search could report connected clusters of healthcare providers and/or the Categorization of procedures or steps to follow (based on a similarity algorithm), this could help start crisis mitigation or assistance for sensitized decision making.

**Being Seamless** in this case would only mean being sensitized to what can be done in **life changing conditions**. It could also receive details or report to a Vital monitor incorporated across HCP(s) globally, where tracing the potential carrier or crisis inducers may help.

**## What's next for Seamless Care**

Development and deployment of the solution in the website

**## Built with**

**Wix**

**## Try it out links**

**http://**[www.venkataoec.wixsite.com/vitalmonitor](http://www.venkataoec.wixsite.com/vitalmonitor)

(for details on a future internet and vital monitor facilitation)

http://[www.venkataoec.wixsite.com/helpintegrateafrica](http://www.venkataoec.wixsite.com/helpintegrateafrica)

(for details on a responsive healthcare facilitation)

http://[www.venkataoec.wixsite.com/rplus-analytics](http://www.venkataoec.wixsite.com/rplus-analytics)

(for details on a analytics we think important for the current health crisis and post pandemic too)

**Programming details:**

**Our registration**

|  |  |
| --- | --- |
| Dear VENKATRAM K S, |  |
|  |  |
|  | **Thank you for subscribing to our Free Trial!**  With your free trial, you will have access to a dataset of Healthcare Professionals in United States.  You can now start using the SDK on [www.venkataoec.wixsite.com/verisafenhealth](http://www.venkataoec.wixsite.com/verisafenhealth). Please find your API key below: |
|  |  |
|  | |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  | |  | iOS: | 100147e9f04ca23c |  | |  |  |  |  | |  |  |  |  | |  | Android: | 200147b9a750e72e |  | |  |  |  |  | |  |  |  |  | |  | Javascript: | 3001474552433639 |  | |  |  |  |  | |

**We have tried to include the demonstration code fragments in our website.**

**The inclusion is as follows:**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1.0" />**

**<title>HealthCare Locator SDK Sample</title>**

**<link rel="stylesheet" href="main.css" />**

**</head>**

**<body>**

**<section class="sidebar">**

**<header>**

**<div class="burger"></div>**

**<h1>Seamless Care Demo</h1>**

**</header>**

**<ul class="menu">**

**<li class="menu-item">**

**<a href="text/javascript" onclick="https://static.healthcarelocator.com/v1/hcl-sdk-api/hcl-sdk-api.js">Home</a>**

**<script>**

**// Initialize HCL SDK API**

**const hclAPI = new HclAPI({**

**apiKey: '3001474552433639',**

**icons: {**

**search: `<svg>...</svg>`,**

**},**

**showSuggestModification: false,**

**entry: {**

**screenName: "Home";**

**}**

**});**

**</script>**

**</li>**

**<li class="menu-item">**

**<a href="">Search for Seamless Care services (Future scope)</a>**

**</li>**

**<li class="menu-item">**

**<a href="">Find a practitioner near me (Future scope)</a>**

**</li>**

**<li class="menu-item">**

**<a href="">Find a diagnostic centre near me (Future scope)</a>**

**</li>**

**</ul>**

**<div class="sidenav-settings">**

**<settings-panel></settings-panel>**

**</div>**

**</section>**

**<section class="content-wrapper">**

**<div class="home-content">**

**<img src=""/>**

**<section class="home-text">**

**<p>This sample app is a demo of the integration of HealthCare Locator SDK UI inside a web site/application,</p>**

**</body>**

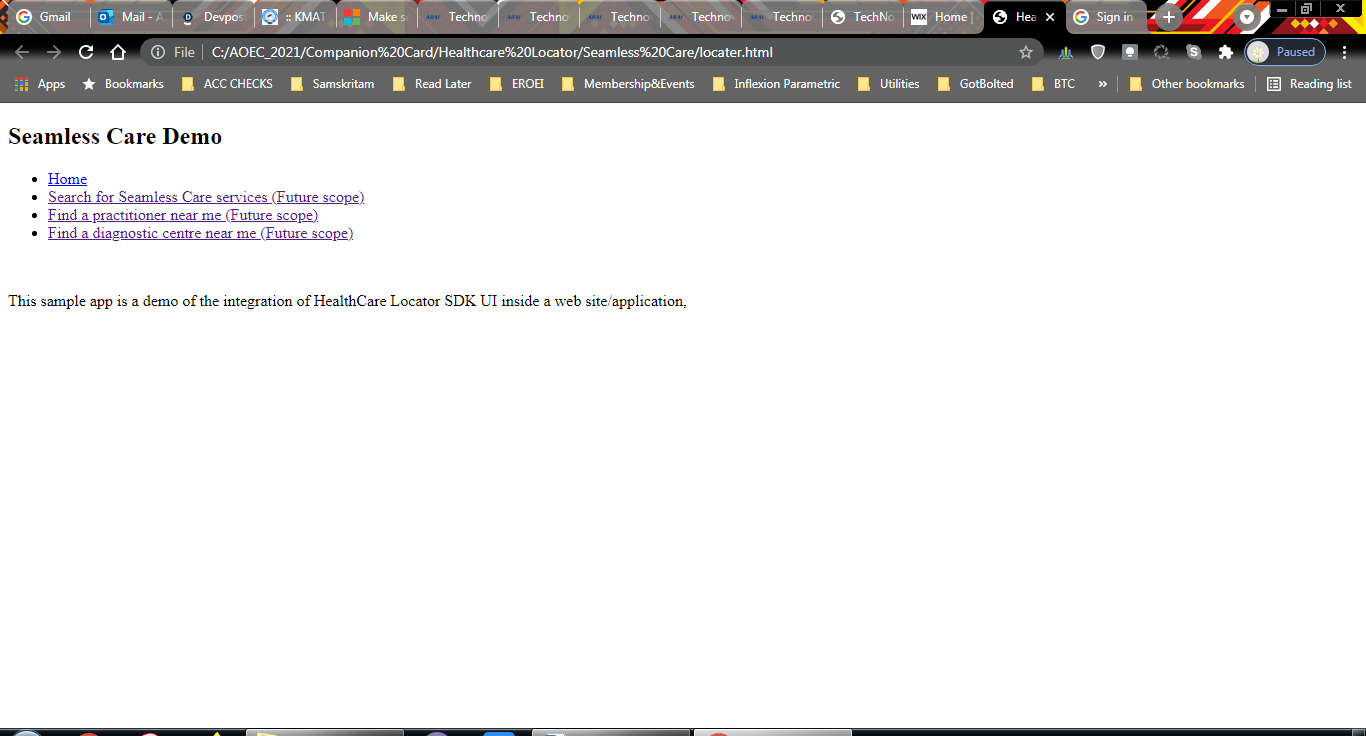
**</html>**

**Outputs given our efforts to fast track a solution:**

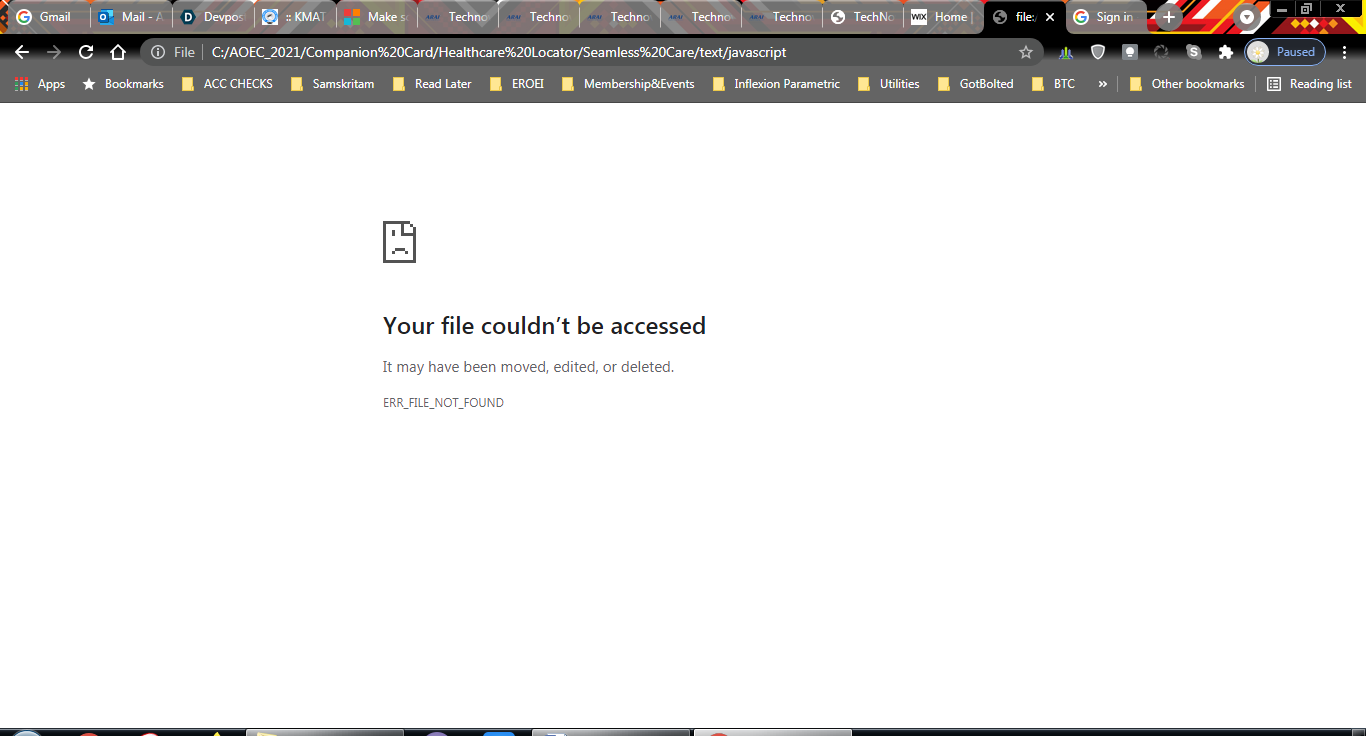
The code suggested by the HealthCare Locator SDK was put into a separate HTML and also into the website we expect to develop and deploy.

**Running the locator HTML**

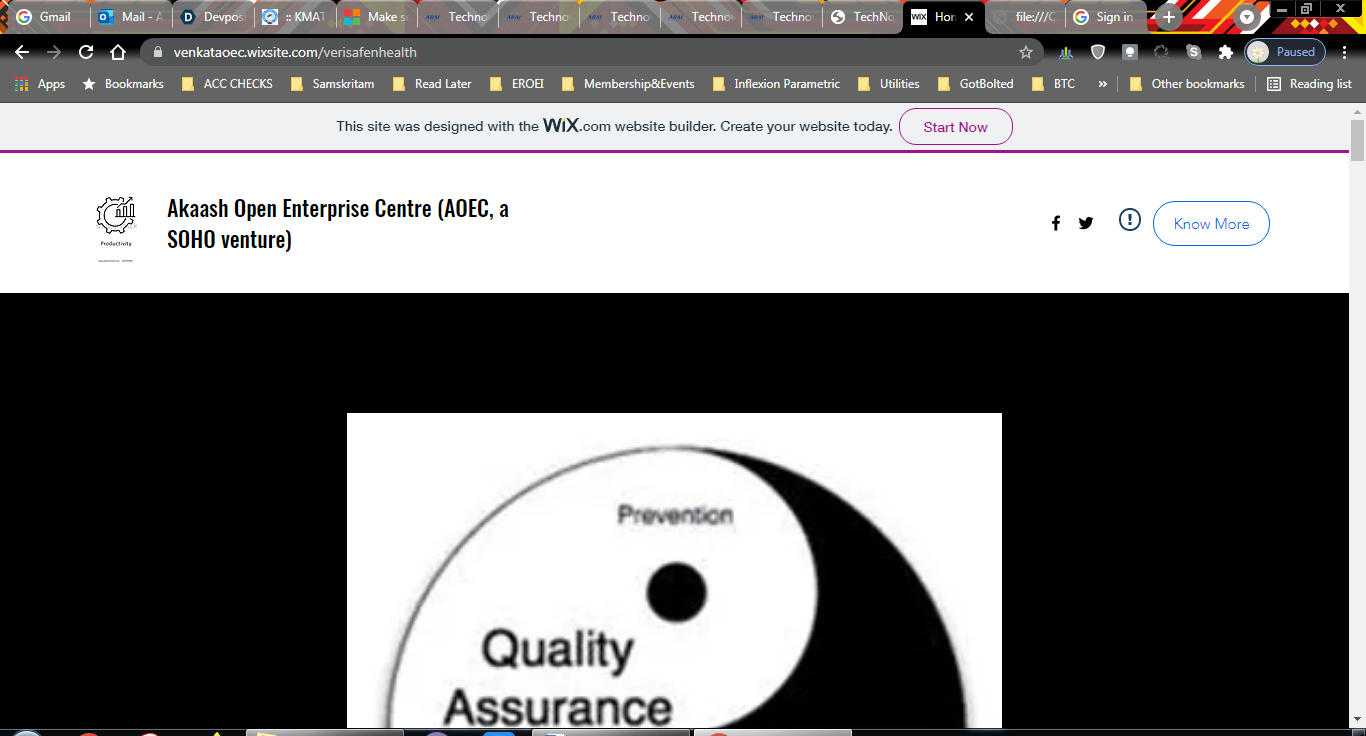
The locator HTML when run independently gives the following results:



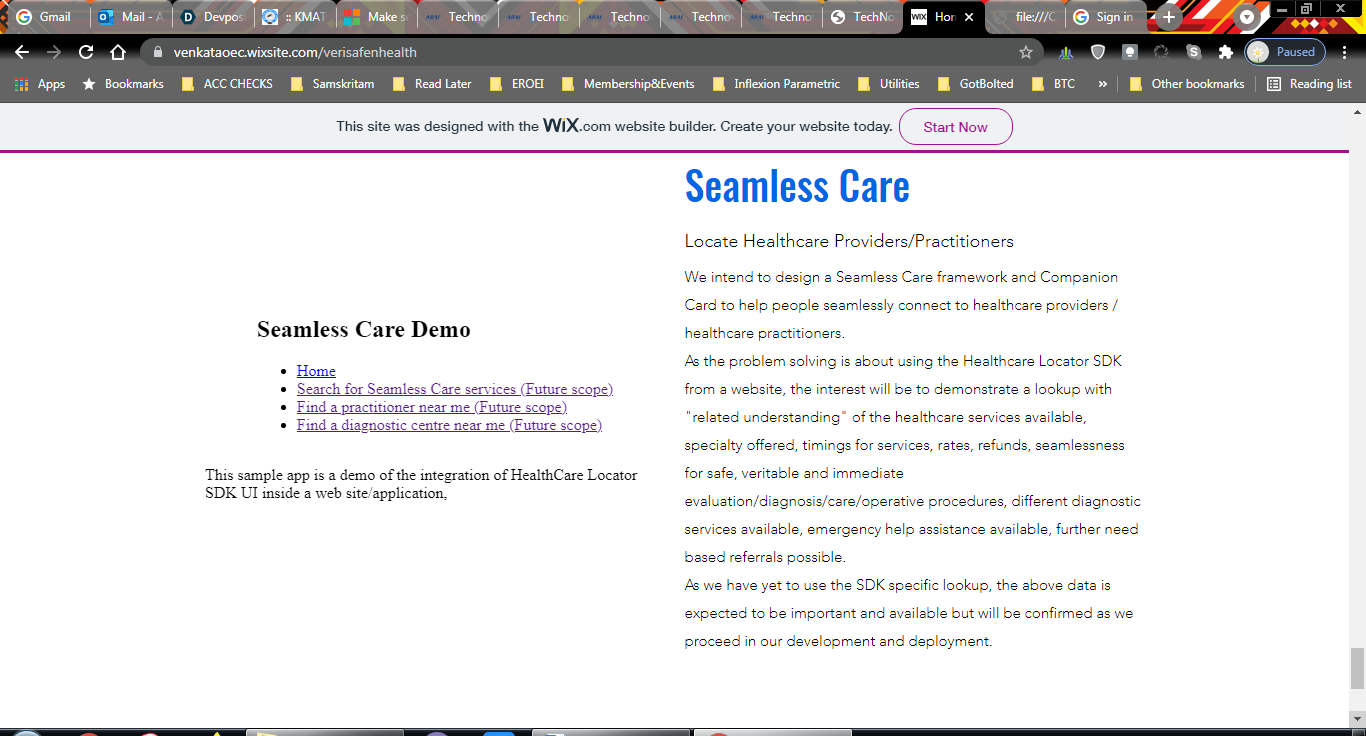
Clicking on the Home menu item

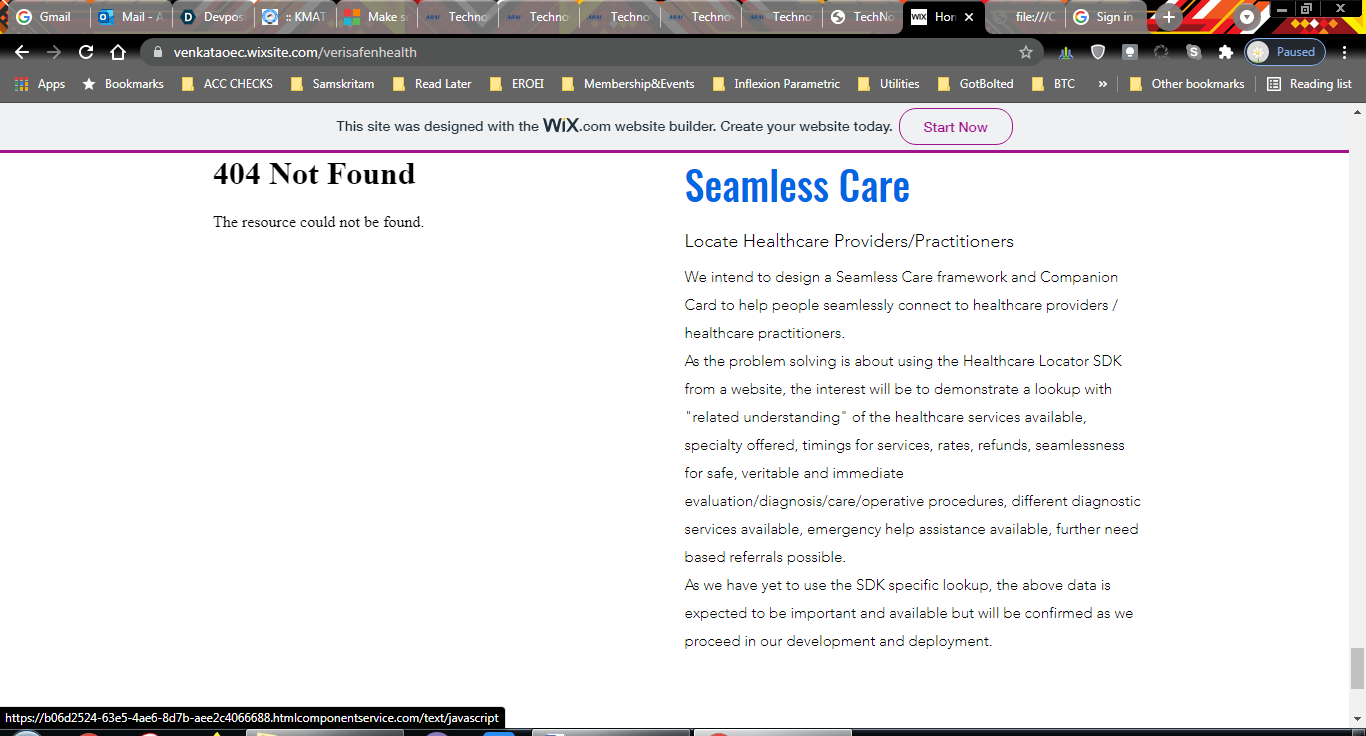


Expecting that we would get different results when run from the website, we encountered this issue that we did not debug further….









We find that the website inclusion for Seamless Care could be very useful, so will try to work on this when time permits with help from your developer team.