



Agnel Charities'
Fr. C. Rodrigues Institute of Technology, Vashi

Department of Computer Engineering

CCL Mini Project

Subject	CSL605: Cloud Computing Lab	
Branch & Semester	COMP - VI	
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Title of the Project	COVID – 19 Website using Cloud	
Subject Incharge Signature with Date:	Prof. Bhakti Aher	

Introduction

A web application that works as an information platform to spread awareness about COVID-19

The users have access to a guide

Cloud Service Provided by Application

Platform as a Service

PaaS is a category of cloud computing that provides a platform and environment to allow developers to build applications and services over the internet.

PaaS services are hosted in the cloud and accessed by users simply via their web browser. A PaaS provider hosts the hardware and software on its own infrastructure. As a result, PaaS frees users from having to install in-house hardware and software to develop or run a new application. Thus, the development and deployment of the application take place independent of the hardware. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly configuration settings for the application-hosting environment. To make it simple, take the example of an annual day function, you will have two options either to create a venue or to rent a venue but the function is the same.

Advantages of PaaS:

Easy deployment: PaaS providers typically offer an easy-to-use interface that allows developers to deploy their applications quickly and easily. This reduces the time and effort required to set up and maintain the infrastructure, allowing developers to focus on building and improving their applications.

Scalability: PaaS providers typically offer automatic scaling, which allows applications to scale up or down based on demand. This means that developers do not need to worry about provisioning or managing resources to accommodate changes in traffic or usage.

Cost-effective: PaaS providers typically offer a pay-as-you-go pricing model, which means that developers only pay for the resources they use. This makes PaaS a cost-effective option for small to medium-sized businesses.

Focus on development: PaaS providers handle the infrastructure and other low-level details, allowing developers to focus on building their applications.

Infrastructure as a Service

Infrastructure as a service (IaaS) is a service model that delivers computer infrastructure on an outsourced basis to support various operations.

Typically, IaaS is a service where infrastructure is provided as outsourcing to enterprises such as networking equipment, devices, database, and web servers. It is also known as Hardware as a Service (HaaS). IaaS customers pay on a per-user basis, typically by the hour, week, or month. Some providers also charge customers based on the amount of virtual machine space they use. It simply provides the underlying operating systems, security, networking, and servers for developing such applications, and services, and deploying development tools, databases, etc.

Advantages of IaaS:

Full control: IaaS providers offer complete control over the infrastructure, allowing developers to configure and manage the infrastructure as they see fit.

Scalability: IaaS providers offer automatic scaling, which allows applications to scale up or down based on demand.

Flexibility: IaaS providers offer a wide range of services and tools that can be customized to meet specific requirements.

Security: IaaS providers offer a high level of security, including encryption, firewalls, and other security measures.

Disadvantages of IaaS:

Complexity: IaaS requires a high level of technical expertise to set up and manage the infrastructure.

Cost: IaaS can be more expensive than PaaS, as developers need to pay for the infrastructure and resources they use.

Time-consuming: Setting up and managing the infrastructure can be time-consuming, which can be a challenge for small to medium-sized businesses with limited resources

Cloud Platform Used/ Tools Used

Cloud Platform used here is Google Firebase.

Firestore is a cloud-based platform that provides a range of tools and services for building mobile and web applications. It offers cloud computing and storage services that allow developers to build and run their applications on Google's infrastructure. Firestore's cloud computing services include serverless computing through its Cloud Functions feature. Cloud Functions allow developers to run custom code in response to events triggered by their applications, such as user authentication or database changes. This allows developers to easily implement business logic, process payments, and handle other server-side tasks without worrying about server management.

Firestore provides a number of features for developing applications, including:

Real-time Database: Firestore provides a NoSQL database that allows developers to store and sync data in real-time. The database is designed to work with a wide range of devices and platforms, including iOS, Android, and the web.

Authentication: Firestore provides a robust authentication system that allows developers to easily manage user authentication and authorization. It supports a variety of authentication methods, including email and password, social media, and phone number verification.

Cloud Functions: Firestore provides a serverless backend that allows developers to run custom code in response to events triggered by their applications. This feature is particularly useful for implementing business logic, processing payments, and handling other server-side tasks.

Hosting: Firestore provides a fast and secure hosting solution for web applications. It supports static content hosting, dynamic content hosting, and custom domains.

Analytics: Firestore provides powerful analytics tools that allow developers to measure user engagement and behavior. It provides insights into user retention, demographics, and behavior, among other things.

Cloud Storage: Firestore provides a cloud-based storage solution that allows developers to store and serve user-generated content, such as images, audio, and video.

Performance Monitoring: Firestore provides a tool for monitoring application performance, including latency, app load time, and other metrics.

Crashlytics: Firestore provides a powerful crash reporting tool that allows developers to track and diagnose application crashes in real-time.

Firestore's cloud computing and storage services are highly scalable and flexible. Developers can easily scale their applications up or down based on demand, without having to worry about managing servers or infrastructure. Firestore also offers a pay-as-you-go pricing model, which means developers only pay for the resources they use.



Deployment on Firebase:

- Deployment Steps:

The screenshot shows a VS Code editor with a terminal window open. The terminal displays the output of the Firebase CLI commands. The user has initialized a new Firebase project, configured it as a single-page app, and deployed the static files to the 'covid-19-website-e759d' project. The file explorer on the left shows the project structure, including the 'public' directory with various image assets and the 'index.html' file.

```

CCL: MINI PROJECT
├── firebase
├── node_modules
├── public
│   ├── 404.html
│   ├── do-img.png
│   ├── dont-img.png
│   ├── fcritlogo.png
│   ├── handwash-1.png
│   ├── handwash-2.png
│   ├── handwash-3.png
│   ├── handwash-4.png
│   ├── handwash-5.png
│   ├── handwash-6.png
│   ├── home-img.png
│   ├── index.html
│   ├── map.png
│   ├── protect-1.png
│   ├── protect-2.png
│   ├── protect-3.png
│   ├── script.js
│   ├── scroll-img.png
│   ├── style.css
│   ├── symptoms-img.png
│   ├── firebase.json
│   ├── gitignore
│   ├── package-lock.json
│   └── package.json
└── OUTLINE
└── TIMELINE

Terminal
index.html - CCL: Mini Project Code
powershell
? Are you ready to proceed? Yes
? Which Firebase features do you want to set up for this directory? Press Space to select features, then Enter to confirm your choices. Hosting:
Configure files for Firebase Hosting and (optionally) set up GitHub Action deploys
but for now we'll just set up a default project.

1 Using project covid-19-website-e759d (covid-19 Website)

=== Hosting Setup

Your public directory is the folder (relative to your project directory) that
will contain Hosting assets to be uploaded with firebase deploy. If you
have a build process for your assets, use your build's output directory.

? What do you want to use as your public directory? public
? Configure as a single-page app (rewrite all urls to /index.html)? No
? Set up automatic builds and deploys with GitHub? No
? File public/404.html already exists. Overwrite? No
1 Skipping write of public/404.html
? File public/index.html already exists. Overwrite? No
1 Skipping write of public/index.html

1 Writing configuration info to firebase.json...
1 Writing project information to .firebaserc...

+ Firebase initialization complete!
PS D:\Agrima\Sem-6\CCL - Mini Project> firebase deploy

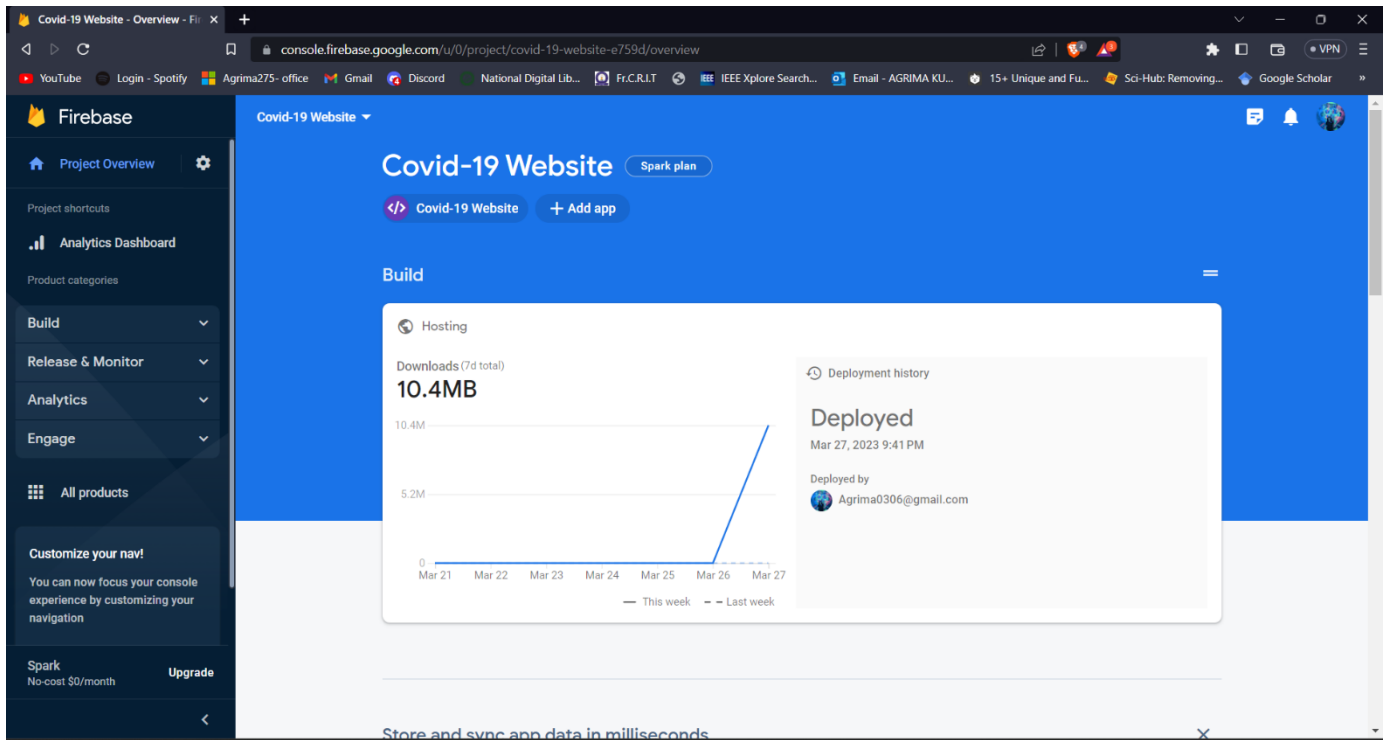
=== Deploying to 'covid-19-website-e759d'...

1 deploying hosting
1 hosting[covid-19-website-e759d]: beginning deploy...
1 hosting[covid-19-website-e759d]: found 20 files in public
+ hosting[covid-19-website-e759d]: file upload complete
1 hosting[covid-19-website-e759d]: finalizing version...
+ hosting[covid-19-website-e759d]: version finalized
1 hosting[covid-19-website-e759d]: releasing new version...
+ hosting[covid-19-website-e759d]: release complete

+ Deploy complete!

Project Console: https://console.firebase.google.com/project/covid-19-website-e759d/overview
Hosting URL: https://covid-19-website-e759d.web.app
PS D:\Agrima\Sem-6\CCL - Mini Project>
  
```

- Firebase Console:



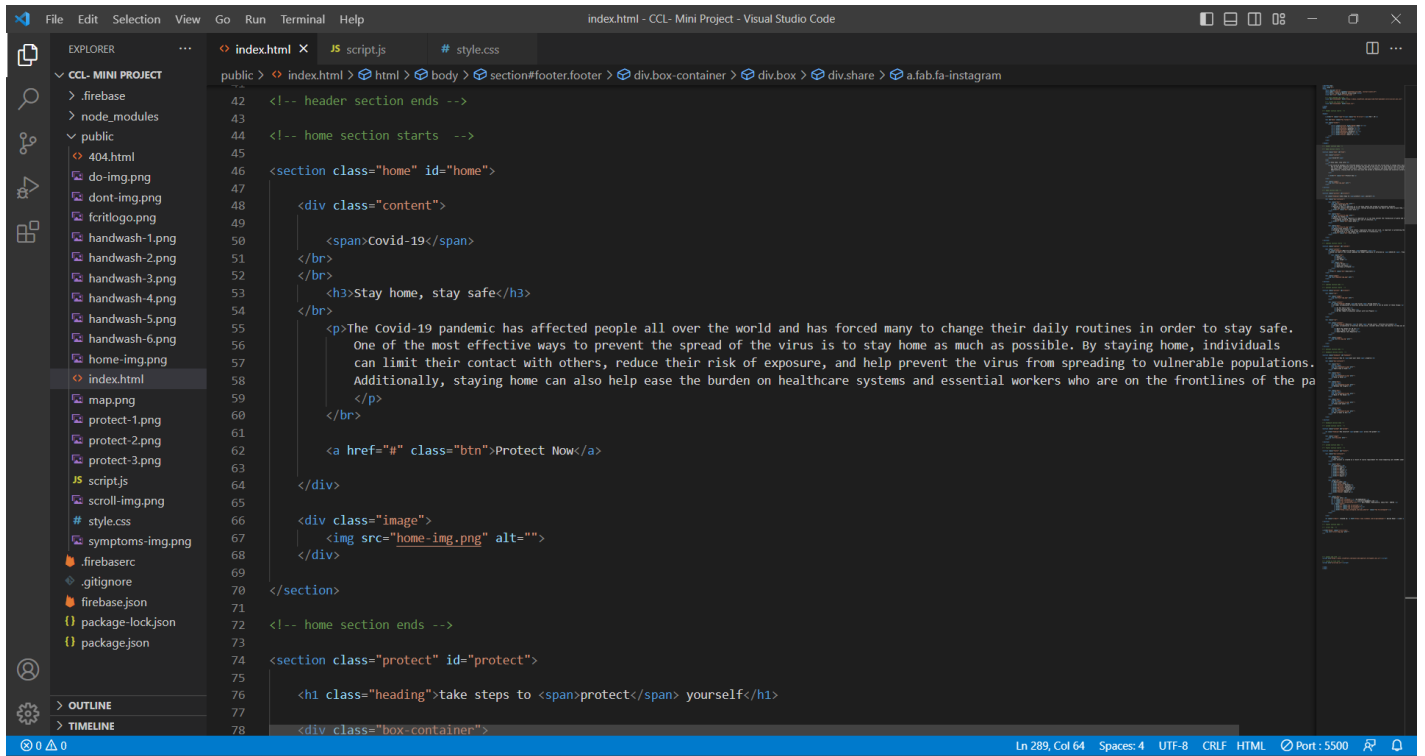
Website Link: <https://covid-19-website-e759d.web.app/>

Or simply scan the QR to visit the website!

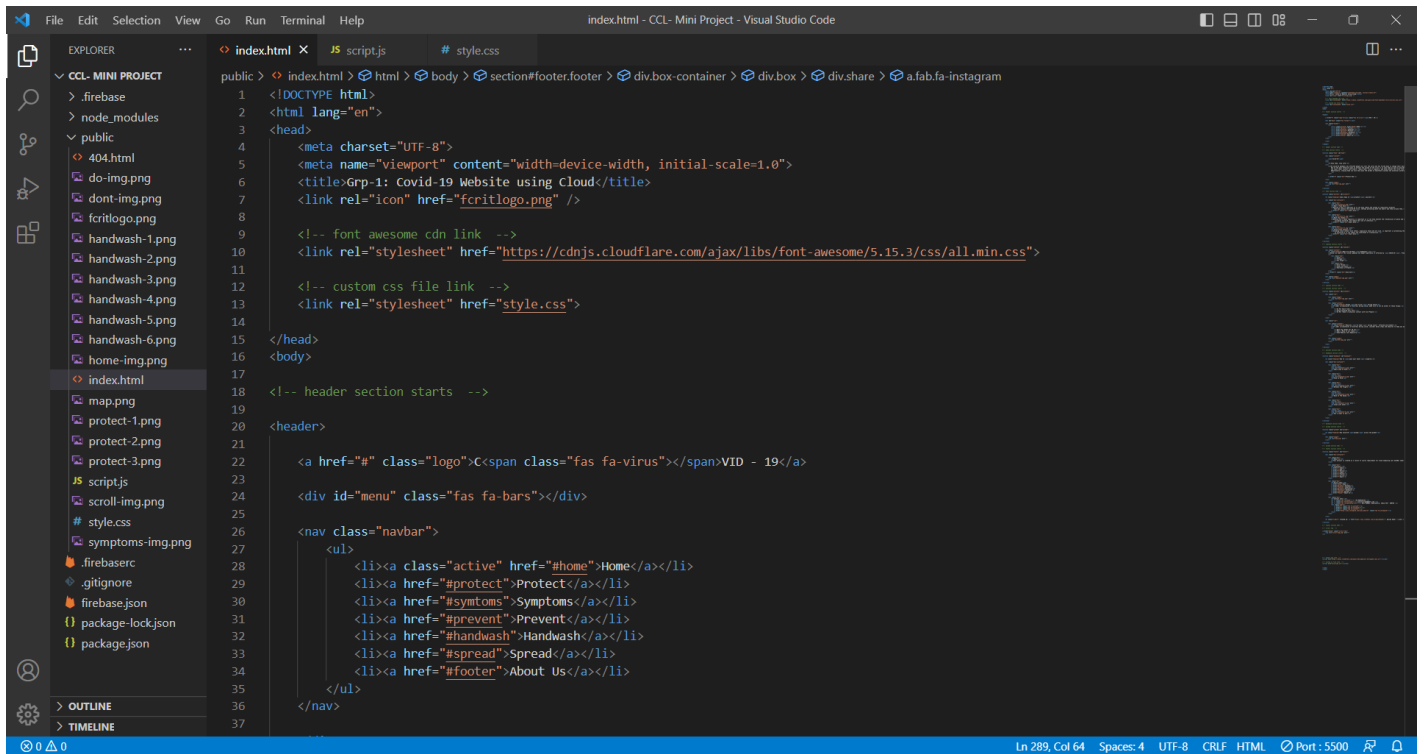


Code Snippets:

- Index.html

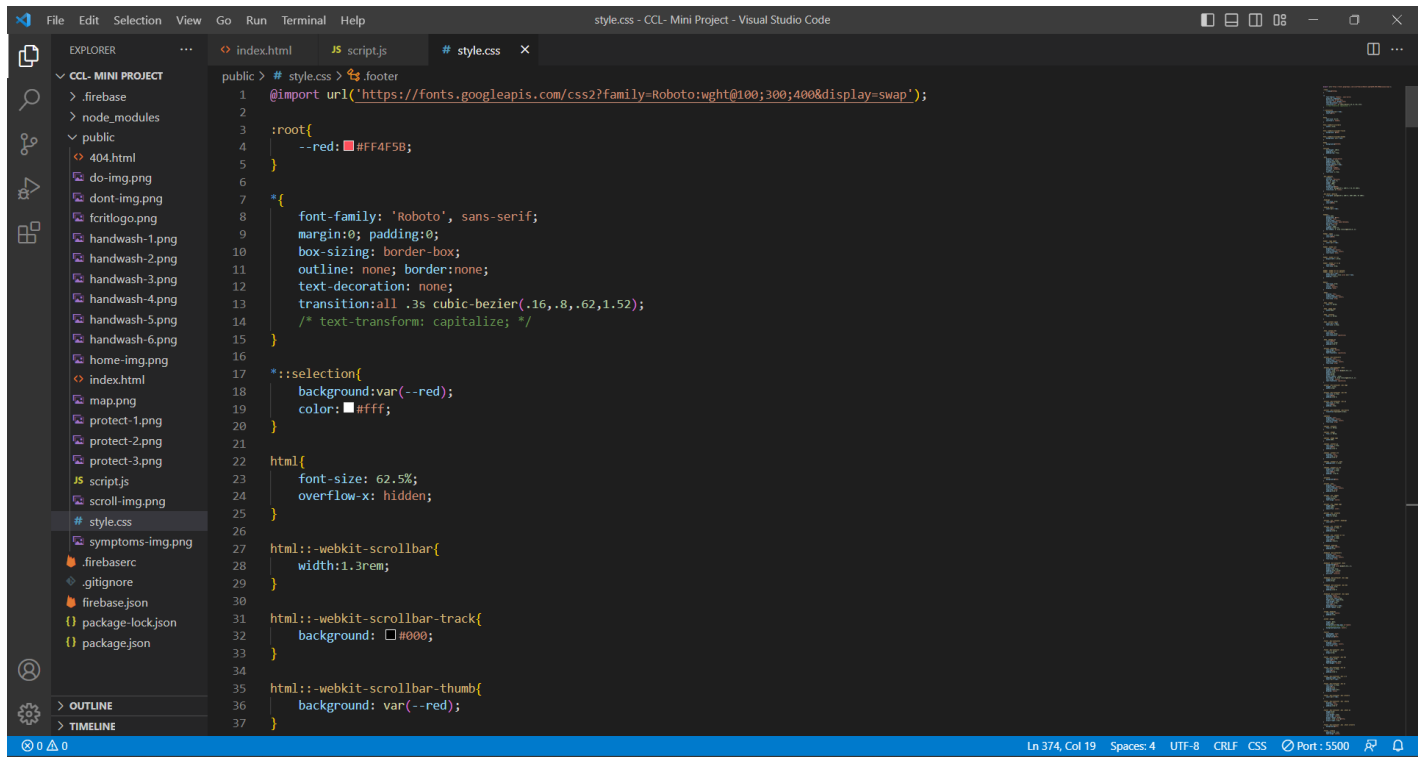


```
public > index.html > html > body > section#footer.footer > div.box-container > div.box > div.share > a.fab.fa-instagram
42 <!-- header section ends -->
43
44 <!-- home section starts -->
45
46 <section class="home" id="home">
47
48   <div class="content">
49
50     <span>Covid-19</span>
51   </div>
52
53   <h3>Stay home, stay safe</h3>
54
55   <p>The Covid-19 pandemic has affected people all over the world and has forced many to change their daily routines in order to stay safe.
56     One of the most effective ways to prevent the spread of the virus is to stay home as much as possible. By staying home, individuals
57     can limit their contact with others, reduce their risk of exposure, and help prevent the virus from spreading to vulnerable populations.
58     Additionally, staying home can also help ease the burden on healthcare systems and essential workers who are on the frontlines of the pa
59   </p>
60 </div>
61
62   <a href="#" class="btn">Protect Now</a>
63
64 </div>
65
66 <div class="image">
67   
68 </div>
69
70 </section>
71
72 <!-- home section ends -->
73
74 <section class="protect" id="protect">
75
76   <h1 class="heading">take steps to <span>protect</span> yourself</h1>
77
78   <div class="box-container">
```



```
public > index.html > html > body > section#footer.footer > div.box-container > div.box > div.share > a.fab.fa-instagram
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=1.0">
6   <title>Grp-1: Covid-19 Website using Cloud</title>
7   <link rel="icon" href="fcritlogo.png" />
8
9   <!-- font awesome cdn link -->
10  <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/font-awesome@5.15.3/css/all.min.css">
11
12  <!-- custom css file link -->
13  <link rel="stylesheet" href="style.css">
14
15 </head>
16 <body>
17
18 <!-- header section starts -->
19
20 <header>
21
22   <a href="#" class="logo"><span class="fas fa-virus"></span>VID - 19</a>
23
24   <div id="menu" class="fas fa-bars"></div>
25
26   <nav class="navbar">
27     <ul>
28       <li><a class="active" href="#home">Home</a></li>
29       <li><a href="#protect">Protect</a></li>
30       <li><a href="#symptoms">Symptoms</a></li>
31       <li><a href="#prevent">Prevent</a></li>
32       <li><a href="#handwash">Handwash</a></li>
33       <li><a href="#spread">Spread</a></li>
34       <li><a href="#footer">About Us</a></li>
35     </ul>
36   </nav>
37
```

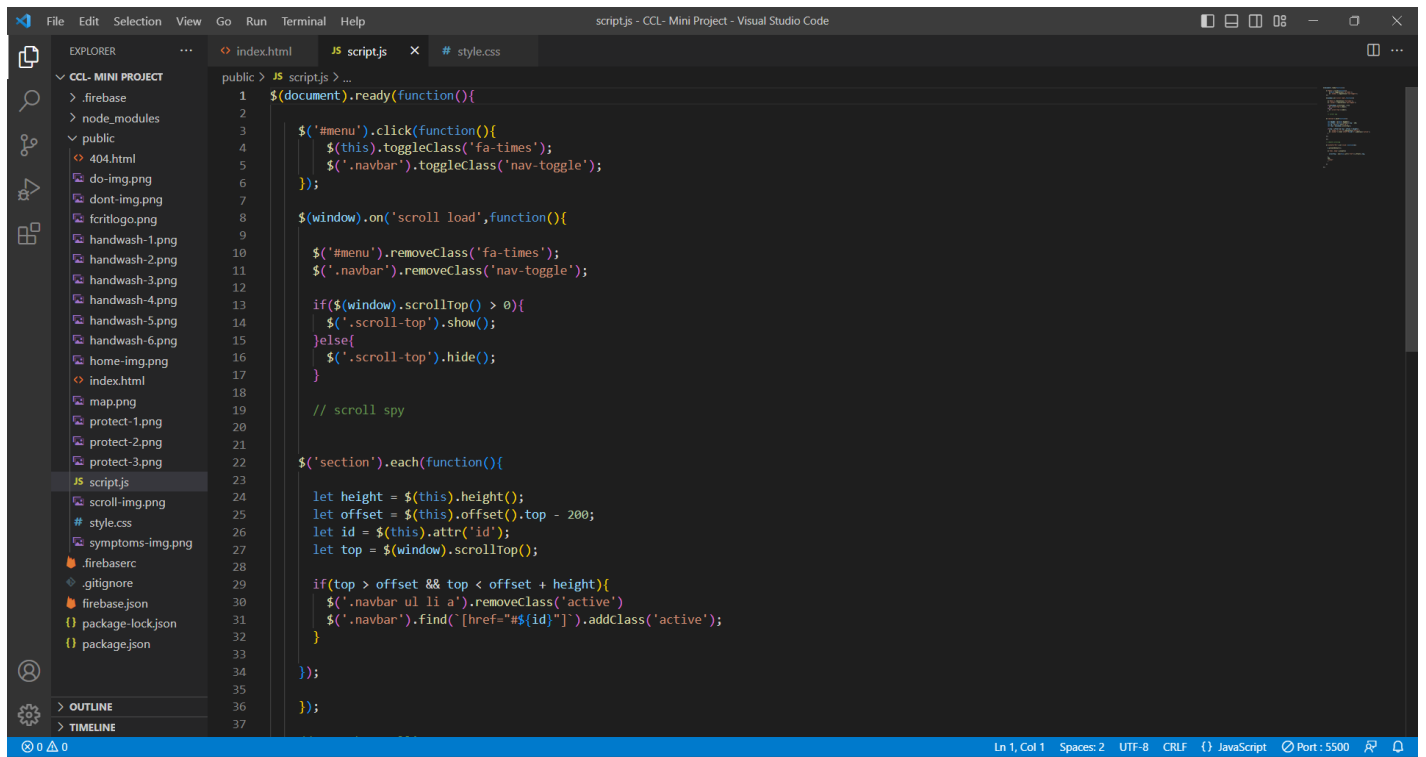
- Style.css



The screenshot shows the Visual Studio Code editor with the 'style.css' file open. The Explorer sidebar on the left shows the project structure, including files like '404.html', 'do-img.png', 'dont-img.png', 'fritlogo.png', 'handwash-1.png', 'handwash-2.png', 'handwash-3.png', 'handwash-4.png', 'handwash-5.png', 'handwash-6.png', 'home-img.png', 'index.html', 'map.png', 'protect-1.png', 'protect-2.png', 'protect-3.png', 'script.js', 'scroll-img.png', 'style.css', 'symptoms-img.png', 'firebase.json', 'package-lock.json', and 'package.json'. The main editor area displays the CSS code for 'style.css'.

```
public > # style.css > .footer
1  @import url('https://fonts.googleapis.com/css2?family=Roboto:wght@100;300;400&display=swap');
2
3  :root{
4    --red: #FF4F5B;
5  }
6
7  *{
8    font-family: 'Roboto', sans-serif;
9    margin:0; padding:0;
10   box-sizing: border-box;
11   outline: none; border:none;
12   text-decoration: none;
13   transition:all .3s cubic-bezier(.16,.8,.62,1.52);
14   /* text-transform: capitalize; */
15 }
16
17 *::selection{
18   background:var(--red);
19   color: #fff;
20 }
21
22 html{
23   font-size: 62.5%;
24   overflow-x: hidden;
25 }
26
27 html::-webkit-scrollbar{
28   width:1.3rem;
29 }
30
31 html::-webkit-scrollbar-track{
32   background: #000;
33 }
34
35 html::-webkit-scrollbar-thumb{
36   background: var(--red);
37 }
```

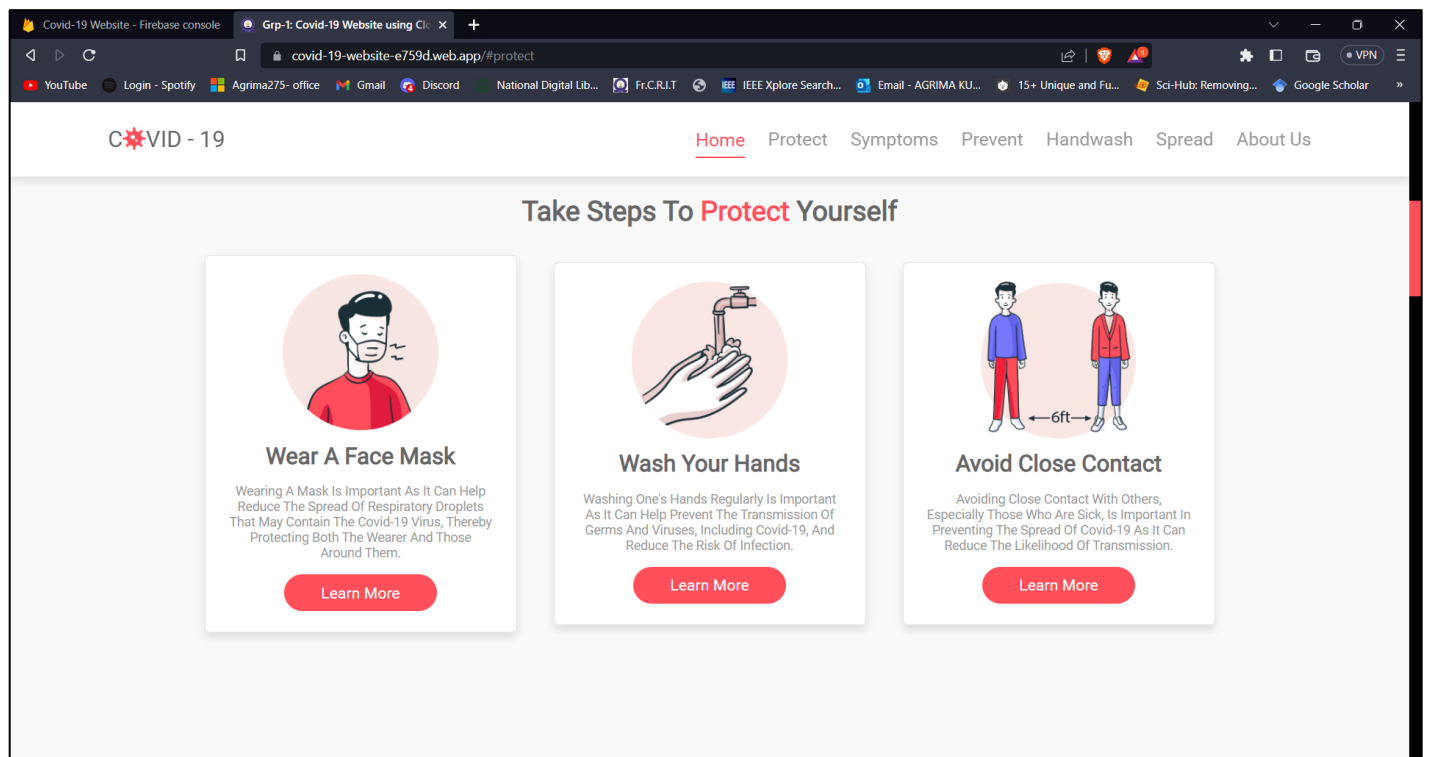
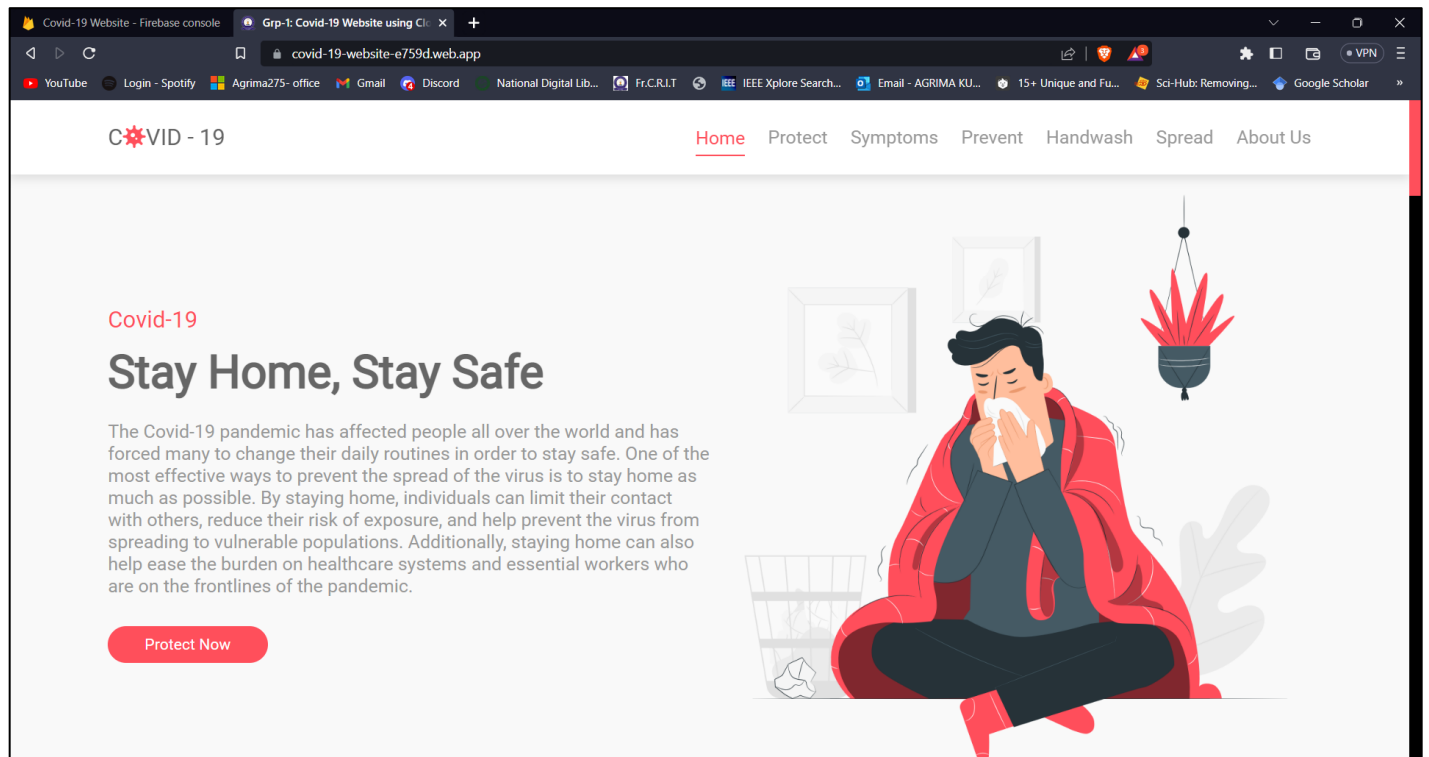
- Script.js



The screenshot shows the Visual Studio Code editor with the 'script.js' file open. The Explorer sidebar on the left shows the project structure, including files like '404.html', 'do-img.png', 'dont-img.png', 'fritlogo.png', 'handwash-1.png', 'handwash-2.png', 'handwash-3.png', 'handwash-4.png', 'handwash-5.png', 'handwash-6.png', 'home-img.png', 'index.html', 'map.png', 'protect-1.png', 'protect-2.png', 'protect-3.png', 'script.js', 'scroll-img.png', 'style.css', 'symptoms-img.png', 'firebase.json', 'package-lock.json', and 'package.json'. The main editor area displays the JavaScript code for 'script.js'.

```
public > JS script.js > ...
1  $(document).ready(function(){
2
3    $('#menu').click(function(){
4      $(this).toggleClass('fa-times');
5      $('.navbar').toggleClass('nav-toggle');
6    });
7
8    $(window).on('scroll load',function(){
9
10     $('#menu').removeClass('fa-times');
11     $('.navbar').removeClass('nav-toggle');
12
13     if($(window).scrollTop() > 0){
14       $('.scroll-top').show();
15     }else{
16       $('.scroll-top').hide();
17     }
18
19     // scroll spy
20
21     $('section').each(function(){
22
23       let height = $(this).height();
24       let offset = $(this).offset().top - 200;
25       let id = $(this).attr('id');
26       let top = $(window).scrollTop();
27
28       if(top > offset && top < offset + height){
29         $('.navbar ul li a').removeClass('active')
30         $('.navbar').find("[href='#"+id+"']").addClass('active');
31       }
32     });
33
34   });
35
36 });
37
```


Implementation:



Covid-19 Website - Firebase console Grp-1: Covid-19 Website using C... x +

covid-19-website-e759d.web.app/#symptoms

YouTube Login - Spotify Agrima275- office Gmail Discord National Digital Lib... Fr.C.R.I.T IEEE Xplore Search... Email - AGRIMA KU... 15+ Unique and Fu... Sci-Hub: Removing... Google Scholar

C^oVID - 19

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What Are The Main Symptoms?

Below are some of the listed symptoms one might experience if affected by COVID-19. Please note that some might appear asymptomatic and of varying degrees of the symptoms below

- Fever
- Sore Throat
- Fatigue
- Aches and Pains
- Dry Cough
- Shortness of Breath

[know more](#)

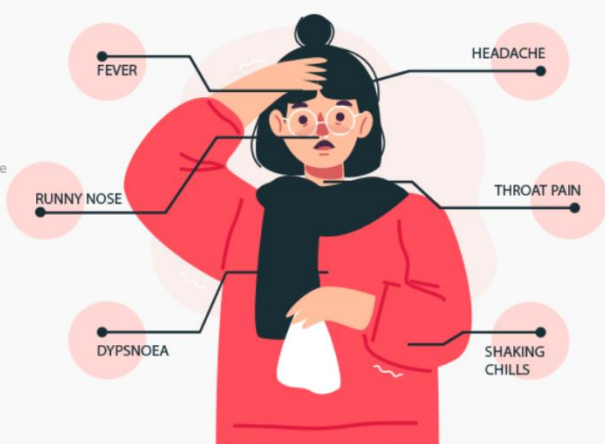


Diagram illustrating symptoms of COVID-19: FEVER, HEADACHE, THROAT PAIN, SHAKING CHILLS, DYSPNOEA, and RUNNY NOSE.

https://covid-19-website-e759d.web.app/#symptoms

Search

ENG IN 18:50 28-03-2023


Covid-19 Website - Firebase console Grp-1: Covid-19 Website using C... x +

covid-19-website-e759d.web.app/#prevent

YouTube Login - Spotify Agrima275- office Gmail Discord National Digital Lib... Fr.C.R.I.T IEEE Xplore Search... Email - AGRIMA KU... 15+ Unique and Fu... Sci-Hub: Removing... Google Scholar

C^oVID - 19

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Things not to do during Covid

If under circumstances of distress during covid, make sure to not do either of these things:

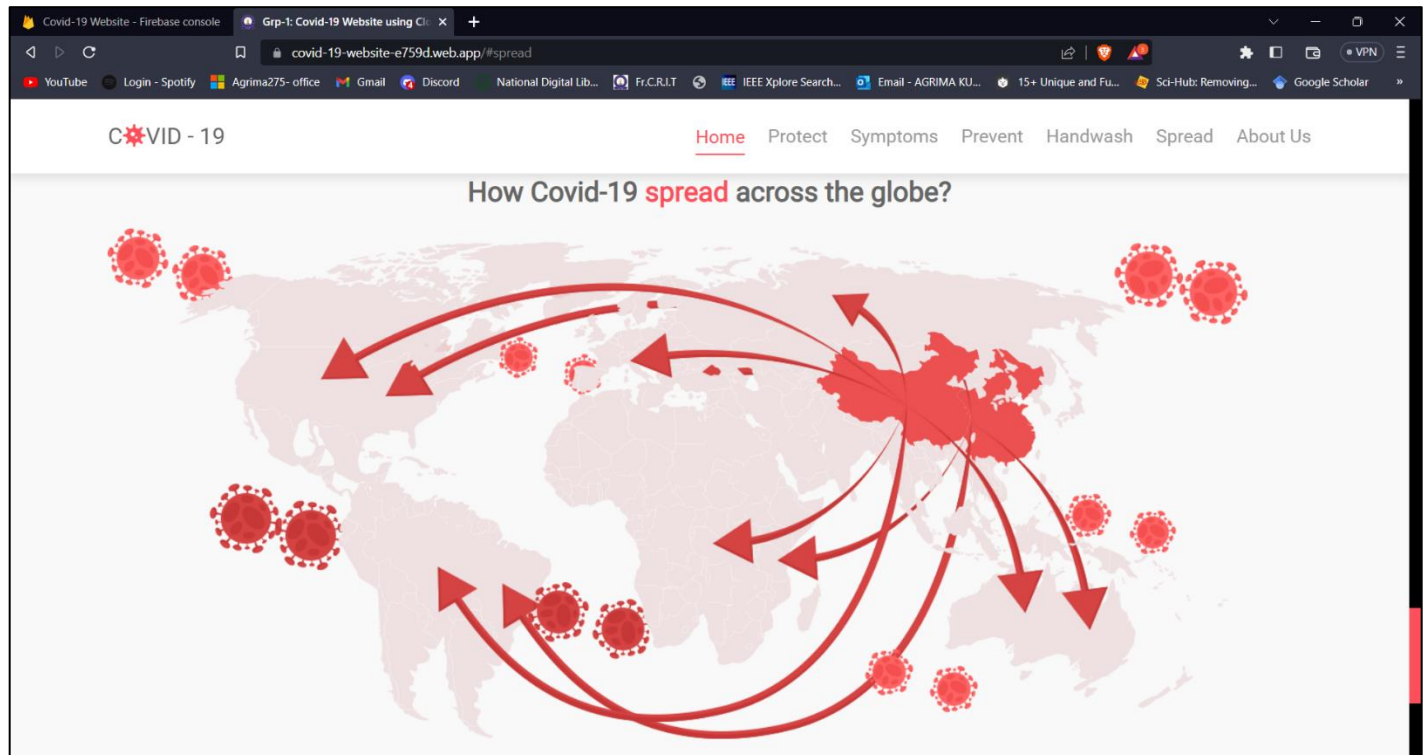
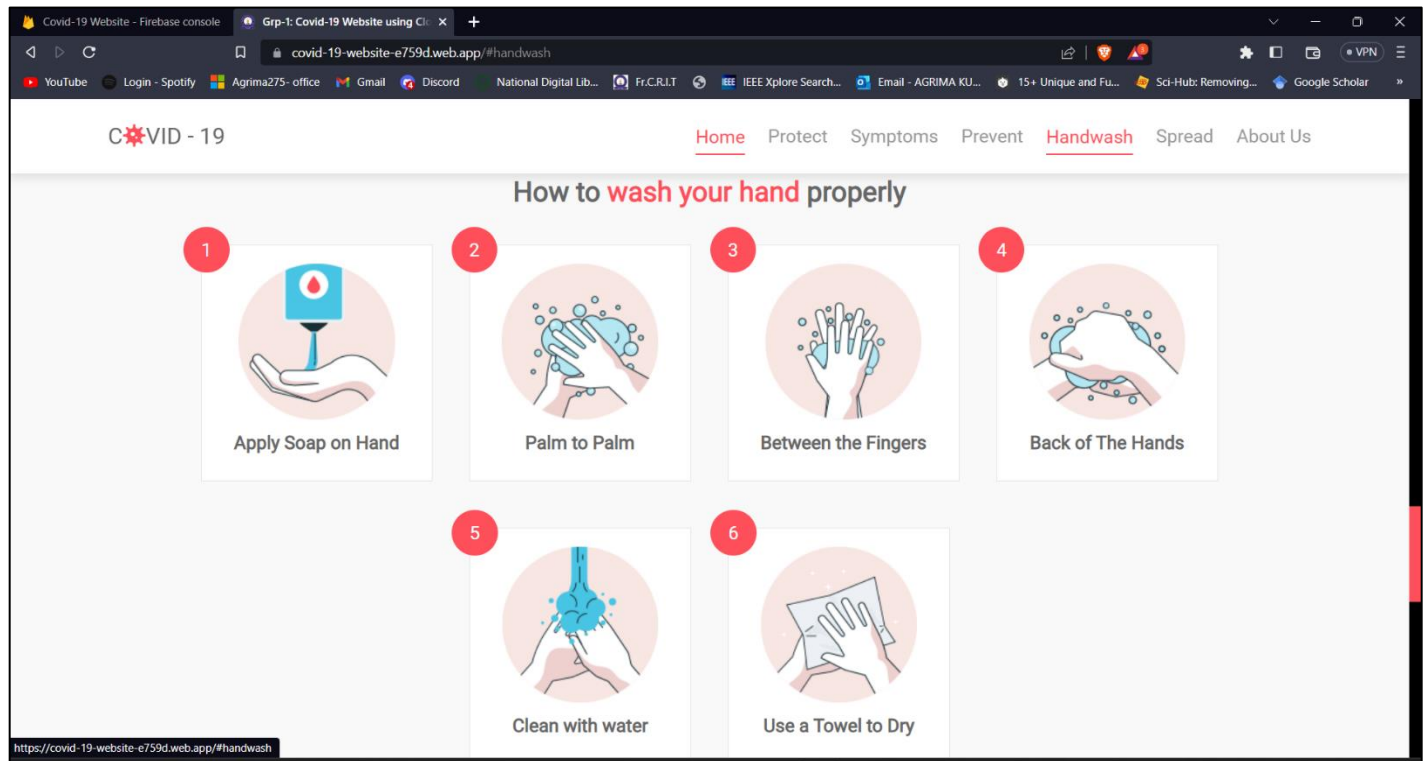
- Do Not Share food
- Avoid touching your face
- Do Not remain in physical contact with Sick People

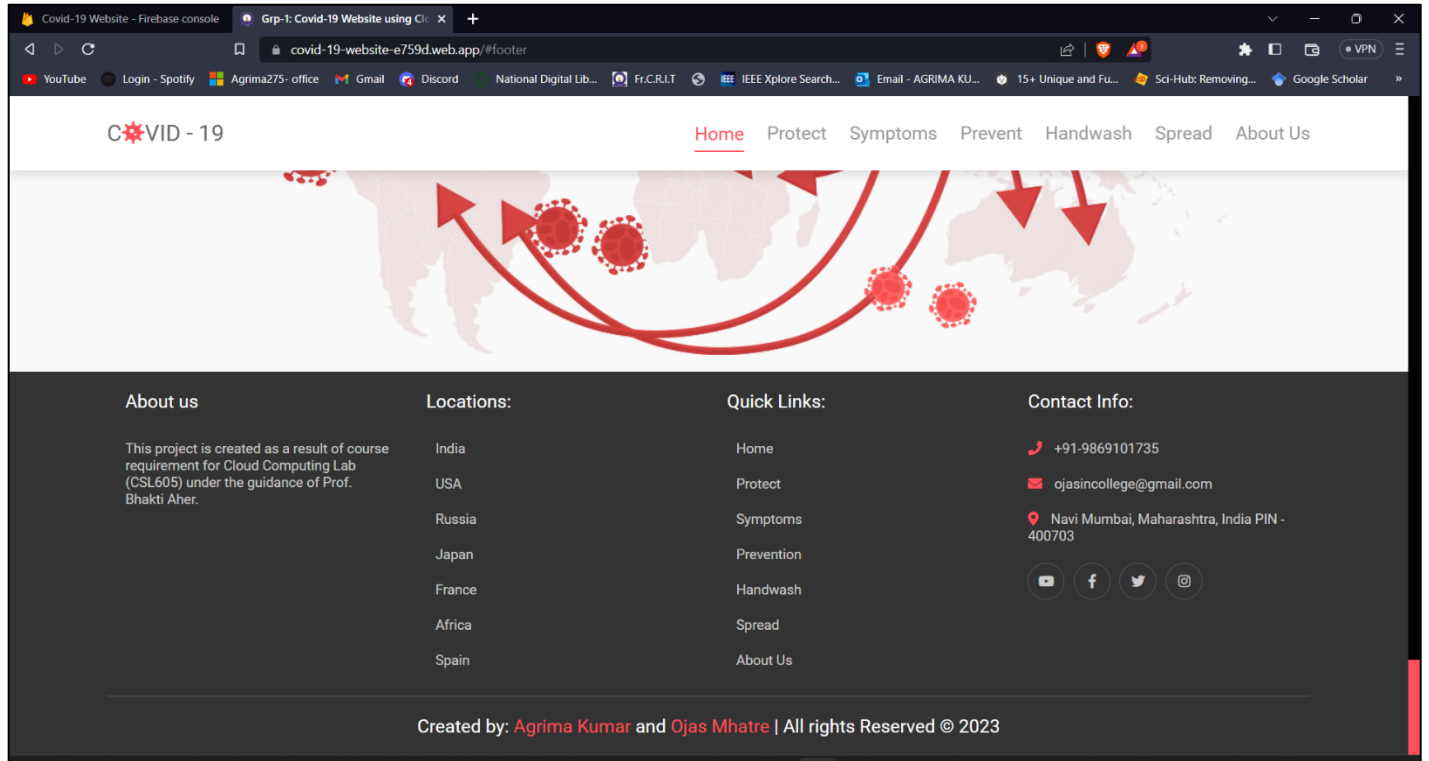
Measures to take during covid - affected environment

If under circumstances of distress during covid, consider below steps and measures to keep you and others at safety:



https://covid-19-website-e759d.web.app/#prevent 10 sec





Results and Conclusion

A COVID-19 website was successfully created and deployed on Firebase using cloud features and was configured via:

Configure files for hosting and (optionally) setup Github action deploys