

PRACTICAL 7

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Aim: To write meta data of your Ecommerce PWA in a Web app manifest file to enable "add to homescreen feature".

Theory:

Regular Web App

A regular web app is a website that is designed to be accessible on all mobile devices such that the content gets fit as per the device screen. It is designed using a web technology stack (HTML, CSS, JavaScript, Ruby, etc.) and operates via a browser. They offer various native-device features and functionalities. However, it entirely depends on the browser the user is using. In other words, it might be possible that you can access a native-device feature on Chrome but not on Safari or Mozilla Firefox because the browsers are incompatible with that feature.

Progressive Web App

Progressive Web App (PWA) is a regular web app, but some extras enable it to deliver an excellent user experience. It is a perfect blend of desktop and mobile application experience to give both platforms to the end-users.

Difference between PWAs vs. Regular Web Apps:

A Progressive Web is different and better than a Regular Web app with features like:

1. Native Experience

Though a PWA runs on web technologies (HTML, CSS, JavaScript) like a Regular web app, it gives user experience like a native mobile application. It can use most native device features, including push notifications, without relying on the browser or any other entity. It offers a seamless and integrated user experience that it is quite tough for one to differentiate between a PWA and a Native application by considering its look and feel.

2. Ease of Access

Unlike other mobile apps, PWAs do not demand longer download time and make memory space available for installing the applications. The PWAs can be shared and installed by a link, which cuts down the number of steps to install and use. These applications can easily keep an app icon on the user's home screen, making the app easily accessible to the users and helps the brands remain in the users' minds, and improving the chances of interaction.

3. Faster Services

PWAs can cache the data and serve the user with text stylesheets, images, and other web content even before the page loads completely. This lowers the waiting time for the end-users and helps the brands improve the user engagement and retention rate, which eventually adds value to their business.

4. Engaging Approach

As already shared, the PWAs can employ push notifications and other native device features more efficiently. Their interaction does not depend on the browser user uses. This eventually improves the chances of notifying the user regarding your

services, offers, and other options related to your brand and keeping them hooked to your brand. In simpler words, PWAs let you maintain the user engagement and retention rate.

5. Updated Real-Time Data Access

Another plus point of PWAs is that these apps get updated on their own. They do not demand the end-users to go to the App Store or other such platforms to download the update and wait until installed.

In this app type, the web app developers can push the live update from the server, which reaches the apps residing on the user's devices automatically. Therefore, it is easier for the mobile app developer to provide the best of the updated functionalities and services to the end-users without forcing them to update their app.

6. Discoverable

PWAs reside in web browsers. This implies higher chances of optimizing them as per the Search Engine Optimization (SEO) criteria and improving the Google rankings like that in websites and other web apps.

7. Lower Development Cost

Progressive web apps can be installed on the user device like a native device, but it does not demand submission on an App Store. This makes it far more cost-effective than native mobile applications while offering the same set of functionalities.

The main features are:

Progressive — They work for every user, regardless of the browser chosen because they are built at the base with progressive improvement principles.

Responsive — They adapt to the various screen sizes: desktop, mobile, tablet, or dimensions that can later become available.

App-like — They behave with the user as if they were native apps, in terms of interaction and navigation.

Updated — Information is always up-to-date thanks to the data update process offered by service workers.

Secure — Exposed over HTTPS protocol to prevent the connection from displaying information or altering the contents.

Searchable — They are identified as “applications” and are indexed by search engines.

Reactivable — Make it easy to reactivate the application thanks to capabilities such as web notifications.

Installable — They allow the user to “save” the apps that he considers most useful with the corresponding icon on the screen of his mobile terminal (home screen) without having to face all the steps and problems related to the use of the app store.

Linkable — Easily shared via URL without complex installations.

Offline — Once more it is about putting the user before everything, avoiding the usual error message in case of weak or no connection. The PWA are based on two particularities: first of all the 'skeleton' of the app, which recalls the page structure, even if its contents do not respond and its elements include the header, the page layout, as well as an illustration that signals that the page is loading.

CODE AND OUTPUT:

Folder Structure

Name	Date modified	Type	Size
.firebase	03-02-2024 15:46	File folder	
.git	03-02-2024 15:27	File folder	
images	03-02-2024 15:27	File folder	
.firebaserc	03-02-2024 15:45	FIREBASERC File	1 KB
.gitattributes	03-02-2024 15:27	txtfile	1 KB
.gitignore	03-02-2024 15:45	txtfile	2 KB
firebase.json	03-02-2024 15:45	JSON File	1 KB
index	20-03-2024 10:51	Microsoft Edge HTM...	12 KB
manifest.json	20-03-2024 10:53	JSON File	1 KB
merge.py	21-03-2024 14:43	PY File	1 KB
New Text Document	20-03-2024 10:53	Text Document	0 KB
script	03-02-2024 15:27	JavaScript File	1 KB
serviceworker	20-03-2024 10:54	JavaScript File	1 KB
styles	03-02-2024 15:27	Cascading Style Shee...	9 KB

Index.html

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <title>Spa Bonjour</title>
```

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

```
    <link rel="preconnect" href="https://fonts.gstatic.com">
```

```
    <link
```

```
      href="https://fonts.googleapis.com/css2?family=Kaushan+Script&family=Poppins:wght@500&display=swap" rel="stylesheet">
```

```
    <script
```

```
      src="https://cdn.jsdelivr.net/gh/cferdinandi/smooth-scroll/dist/smooth-scroll.polyfills.min.js"></script>
```

```
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.c
ss"/>
```

```
    <link rel="stylesheet" href="styles.css">
```

```
</head>
```

```
<script>
```

```
    // Add event listener to execute code when page loads
```

```
    window.addEventListener('load', () => {
```

```
        // Call registerSW function when page loads
```

```
        registerSW();
```

```
    });
```

```
    // Register the Service Worker
```

```
    async function registerSW() {
```

```
        // Check if browser supports Service Worker
```

```
        if ('serviceWorker' in navigator) {
```

```
            try {
```

```
                // Register the Service Worker named 'serviceworker.js'
```

```
                await navigator.serviceWorker.register('serviceworker.js');
```

```
            }
```

```
            catch (e) {
```

```
                // Log error message if registration fails
```

```
                console.log('SW registration failed');
```

```
            }
```

```
        }
```

```
    }
```

```
</script>
```

```
<!-- Google tag (gtag.js) -->
```

```
<script async
```

```
src="https://www.googletagmanager.com/gtag/js?id=G-0PRXPB85YQ"></script>
```

```
<script>
```

```
    window.dataLayer = window.dataLayer || [];
```

```
    function gtag(){dataLayer.push(arguments);}
```

```

</div>
</div>
<div id="sideNav">
  <nav>
    <ul>
      <li><a href="#banner">HOME</a></li>
      <li><a href="#feature">FEATURES</a></li>
      <li><a href="#service">SERVICES</a></li>
      <li><a href="#testimonial">TESTIMONIALS</a></li>
      <li><a href="#contact">CONTACT US</a></li>
    </ul>
  </nav>
</div>
<div id="menuBtn">
  
</div>
</section>

<!-- 2. features Section-->
<section id="feature">
  <div class="title-text">
    <p>Features</p>
    <h1>WHY CHOOSE US</h1>
  </div>
  <div class="feature-box">
    <div class="features">
      <h1>Experienced Staff</h1>
      <div class="features-desc">
        <div class="feature-icon"><i class="fa fa-shield"></i></div>
        <div class="feature-text"><p>Lorem ipsum dolor sit amet, consectetur
adipisicing elit.
Necessitatibus cumque harum tenetur nam nisi, ducimus, a totam
veniam magni
atque nihil error, sapiente quibusdam at corporis sit quae dolore
quidem!</p>
</div>
</div>
<h1>Pre-Booking Online</h1>
<div class="features-desc">
  <div class="feature-icon"><i class="fa fa-check-square-o"></i></div>
  <div class="feature-text"><p>Lorem ipsum dolor sit amet, consectetur
adipisicing elit.
Necessitatibus cumque harum tenetur nam nisi, ducimus, a totam
veniam magni
atque nihil error, sapiente quibusdam at corporis sit quae dolore
quidem!</p>
</div>
</div>
<h1>Affordable Cost</h1>

```

```

        <div class="features-desc">
            <div class="feature-icon"><i class="fa fa-inr"></i></div>
            <div class="feature-text"><p>Lorem ipsum dolor sit amet, consectetur
adipisicing elit.
                Necessitatibus cumque harum tenetur nam nisi, ducimus, a totam
veniam magni
                atque nihil error, sapiente quibusdam at corporis sit quae dolore
quidem!</p>
            </div>
        </div>
    </div>
    <div class="feature-img">
        
    </div>
</div>
</section>

```

```

<!-- 3. Service Section-->
<section id="service">
    <div class="title-text">
        <p>Services</p>
        <h1>WE PROVIDE BETTER</h1>
    </div>
    <div class="service-box">
        <div class="single-service">
            <div class="overlay"></div>
            <div class="service-desc">
                <h3>Hair Cutting</h3><hr>
                <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Ullam
ipsa quod sit! Earum quis fuga ut ratione amet necessitatibus minus voluptates.</p>
            </div>
        </div>
        <div class="single-service">
            <div class="overlay"></div>
            <div class="service-desc">
                <h3>Hair Styling</h3><hr>
                <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Ullam
ipsa quod sit! Earum quis fuga ut ratione amet necessitatibus minus voluptates.</p>
            </div>
        </div>
        <div class="single-service">
            <div class="overlay"></div>
            <div class="service-desc">
                <h3>Hair Dying</h3><hr>
                <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Ullam
ipsa quod sit! Earum quis fuga ut ratione amet necessitatibus minus voluptates.</p>
            </div>
        </div>
    </div>

```

```

        </div>
    </div>
    <div class="single-service">
        <div class="overlay"></div>
        <div class="service-desc">
            <h3>Dry Shampooing</h3><hr>
            <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Ullam
ipsa quod sit! Earum quis fuga ut ratione amet necessitatibus minus voluptates.</p>
        </div>
    </div>
</div>
</section>

```

```

<!--4. Testimonials Section-->
<section id="testimonial">
    <div class="title-text">
        <p>Testimonials</p>
        <h1>WHAT OUR CLIENTS SAYS</h1>
    </div>
    <div class="testimonial-row">
        <div class="testimonial-col">
            <div class="user">
                
                <div class="user-info">
                    <h4>Ken Pollard<i class="fa fa-twitter"></i></h4>
                    <small>@kenpollard</small>
                </div>
            </div>
            <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit.
Voluptatum odit et ratione dolorem delectus nobis, sunt consectetur,
quos eveniet nihil harum? Deserunt nam ex quo commodi, facilis
laudantium repellendus dolorem!</p>
        </div>
        <div class="testimonial-col">
            <div class="user">
                
                <div class="user-info">
                    <h4>Sabiya Tabassum<i class="fa fa-twitter"></i></h4>
                    <small>@nerd__fswd</small>
                </div>
            </div>
            <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit.
quos eveniet nihil harum? Deserunt nam ex quo commodi, facilis
laudantium repellendus dolorem!</p>
        </div>
        <div class="testimonial-col">
            <div class="user">
                

```

```

        <div class="user-info">
            <h4>Suriya<i class="fa fa-twitter"></i></h4>
            <small>@im.suriya</small>
        </div>
    </div>
    <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit.
        Voluptatum odit et ratione dolore delectus nobis, sunt consectetur,
        quos eveniet nihil harum? Deserunt nam ex quo commodi, facilis
        laudantium repellendus dolore!</p>
    </div>
</div>
</section>

<!--5. Contact Us section-->
<section id="contact">
    
    <div class="title-text">
        <p>Contact Us</p>
        <h1>Visit Shop Today</h1>
    </div>
    <div class="footer-row">
        <div class="footer-left">
            <h1>Opening Hours</h1>
            <p><i class="fa fa-clock-o"></i>Mon - Fri : 9:00 AM - 9:00 PM</p>
            <p><i class="fa fa-clock-o"></i>Sat - Sun : 10:00 AM - 11:00 PM</p>
        </div>
        <div class="footer-right">
            <h1>Get in Touch</h1>
            <p><i class="fa fa-map-marker"></i>#30 ABC Colony, XYZ City, IN</p>
            <p><i class="fa fa-paper-plane"></i>example@website.in</p>
            <p><i class="fa fa-map-marker"></i>+01 1123456782</p>
        </div>
    </div>
    <div class="social-links">
        <a href="#"><i class="fa fa-facebook"></i></a>
        <a href="#"><i class="fa fa-twitter"></i></a>
        <a href="#"><i class="fa fa-instagram"></i></a>
        <a href="#"><i class="fa fa-youtube-play"></i></a><br>
        <small>© All Copyrights are reserved to nerd__fswd.</small>
    </div>
</section>
<script src="script.js" type="text/javascript"></script>
<script type="module">
    // Import the functions you need from the SDKs you need
    import { initializeApp } from
    "https://www.gstatic.com/firebasejs/10.8.0/firebase-app.js";
    import { getAnalytics } from
    "https://www.gstatic.com/firebasejs/10.8.0/firebase-analytics.js";
    // TODO: Add SDKs for Firebase products that you want to use

```



```
// https://firebase.google.com/docs/web/setup#available-libraries

// Your web app's Firebase configuration
// For Firebase JS SDK v7.20.0 and later, measurementId is optional
const firebaseConfig = {
  apiKey: "AlzaSyCt0d-RSB3hgKMUU20QbbZA7CNRCkrXaMg",
  authDomain: "barber-985c6.firebaseio.com",
  projectId: "barber-985c6",
  storageBucket: "barber-985c6.appspot.com",
  messagingSenderId: "3049260321",
  appId: "1:3049260321:web:b3a79fc45245ff78986a60",
  measurementId: "G-X7FB372LM2"
};

// Initialize Firebase
const app = initializeApp(firebaseConfig);
const analytics = getAnalytics(app);
</script>
</body>

</html>
```

serviceworker.js

```
var staticCacheName = "pwa";

self.addEventListener("install", function (e) {
  e.waitUntil(
    caches.open(staticCacheName).then(function (cache) {
      return cache.addAll(["/"]);
    })
  );
});

self.addEventListener("fetch", function (event) {
  console.log(event.request.url);

  event.respondWith(
    caches.match(event.request).then(function (response) {
      return response || fetch(event.request);
    })
  );
});
```

manifest.json

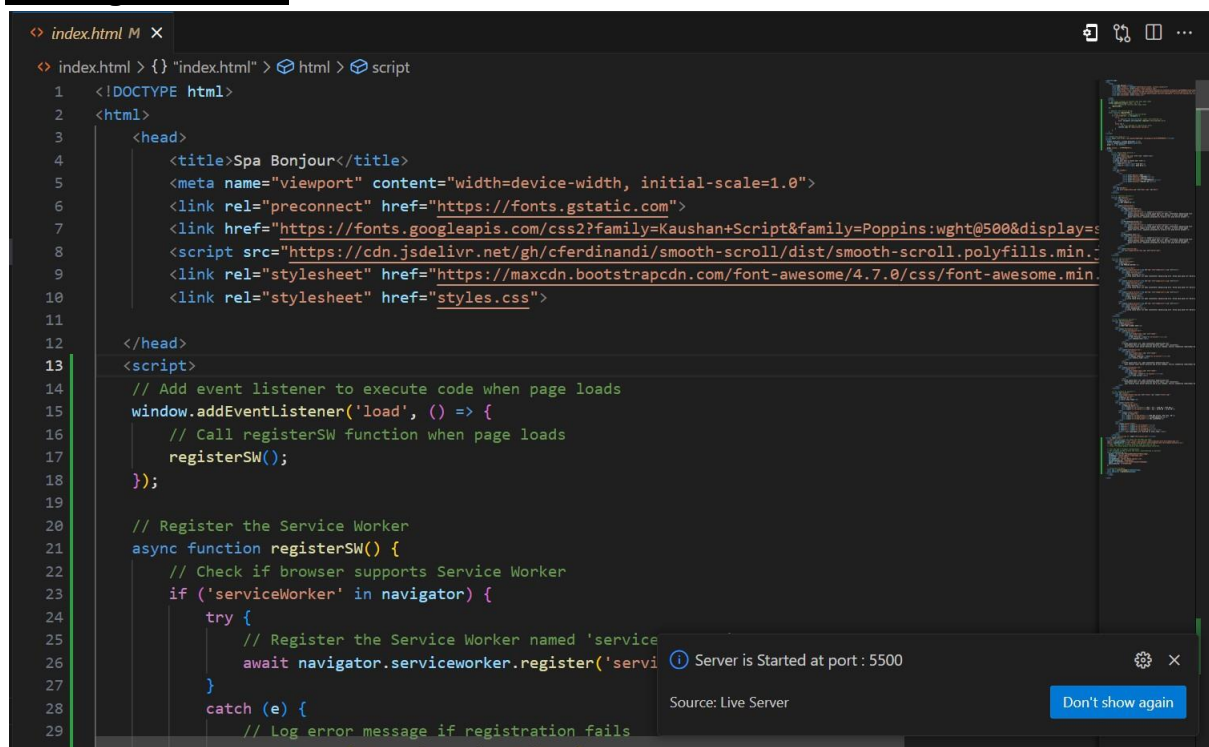
```
{
```

```

"name": "PWA Tutorial",
"short_name": "PWA",
"start_url": "index.html",
"display": "standalone",
"background_color": "#5900b3",
"theme_color": "black",
"scope": ".",
"description": "This is a PWA tutorial.",
"icons": [
  {
    "src": "images/icon-192x192.png",
    "sizes": "192x192",
    "type": "image/png"
  },
  {
    "src": "images/icon-512x512.png",
    "sizes": "512x512",
    "type": "image/png"
  }
]
}

```

Starting the server



The screenshot shows a code editor with the following HTML code in `index.html`:

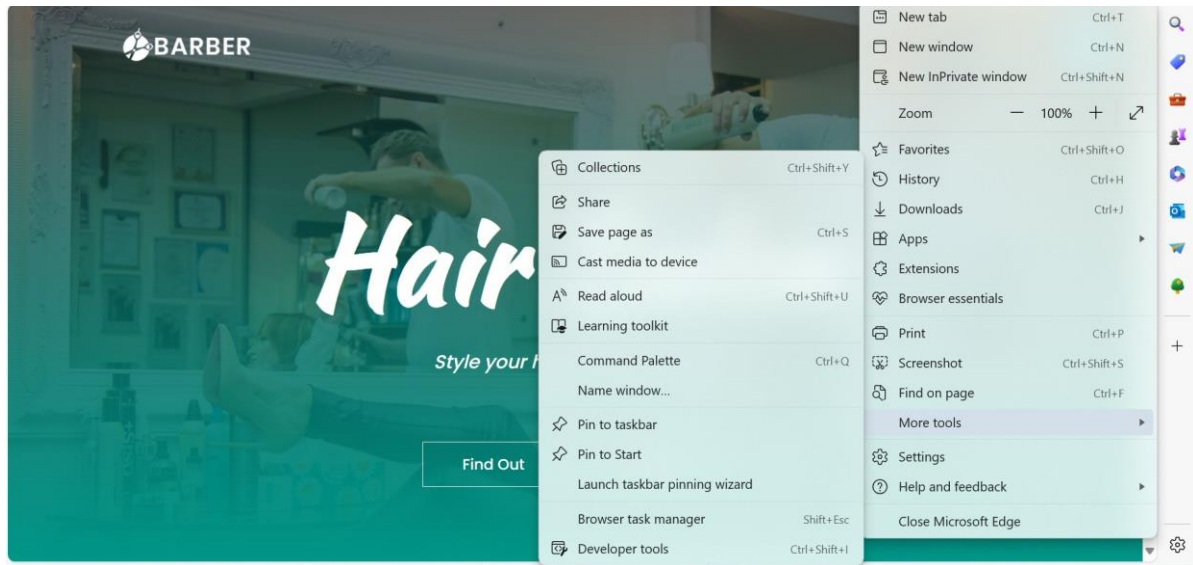
```

1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Spa Bonjour</title>
5     <meta name="viewport" content="width=device-width, initial-scale=1.0">
6     <link rel="preconnect" href="https://fonts.gstatic.com">
7     <link href="https://fonts.googleapis.com/css2?family=Kaushan+Script&family=Poppins:wght@500&display=block">
8     <script src="https://cdn.jsdelivr.net/gh/cferdinandi/smooth-scroll/dist/smooth-scroll.polyfills.min.js">
9     <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.css">
10    <link rel="stylesheet" href="styles.css">
11  </head>
12  <script>
13    // Add event listener to execute code when page loads
14    window.addEventListener('load', () => {
15      // Call registerSW function when page loads
16      registerSW();
17    });
18
19    // Register the Service Worker
20    async function registerSW() {
21      // Check if browser supports Service Worker
22      if ('serviceWorker' in navigator) {
23        try {
24          // Register the Service Worker named 'service'
25          await navigator.serviceWorker.register('service-worker.js');
26        } catch (e) {
27          // Log error message if registration fails
28          console.log(e);
29        }
30      }
31    }
32  </script>
33 </html>

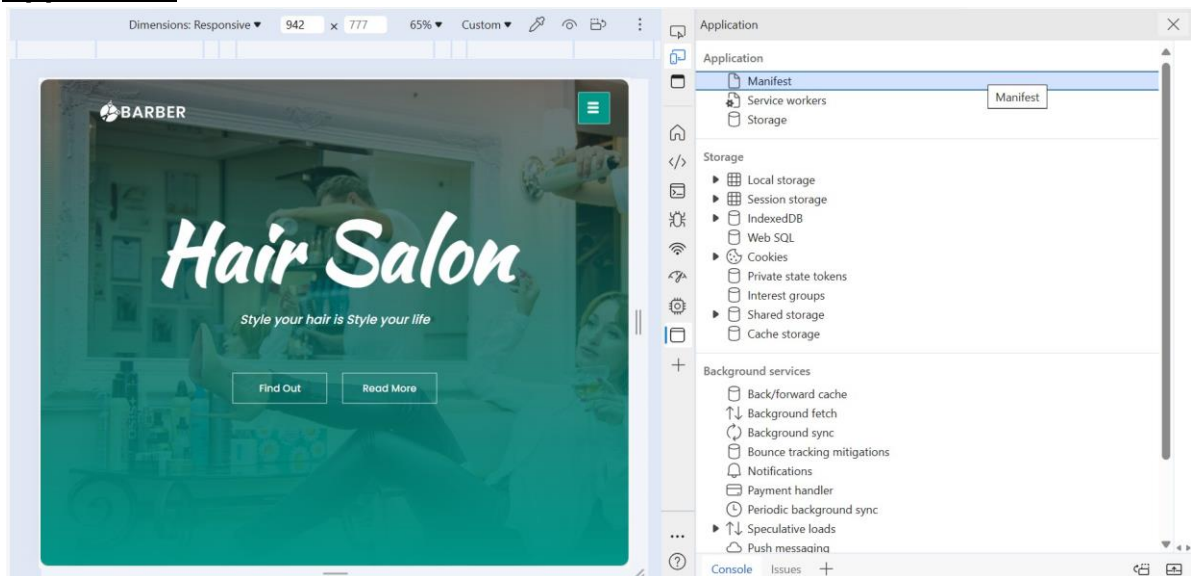
```

A terminal window at the bottom right shows the message: "Server is Started at port : 5500". Below this message, it says "Source: Live Server" and there is a button that says "Don't show again".

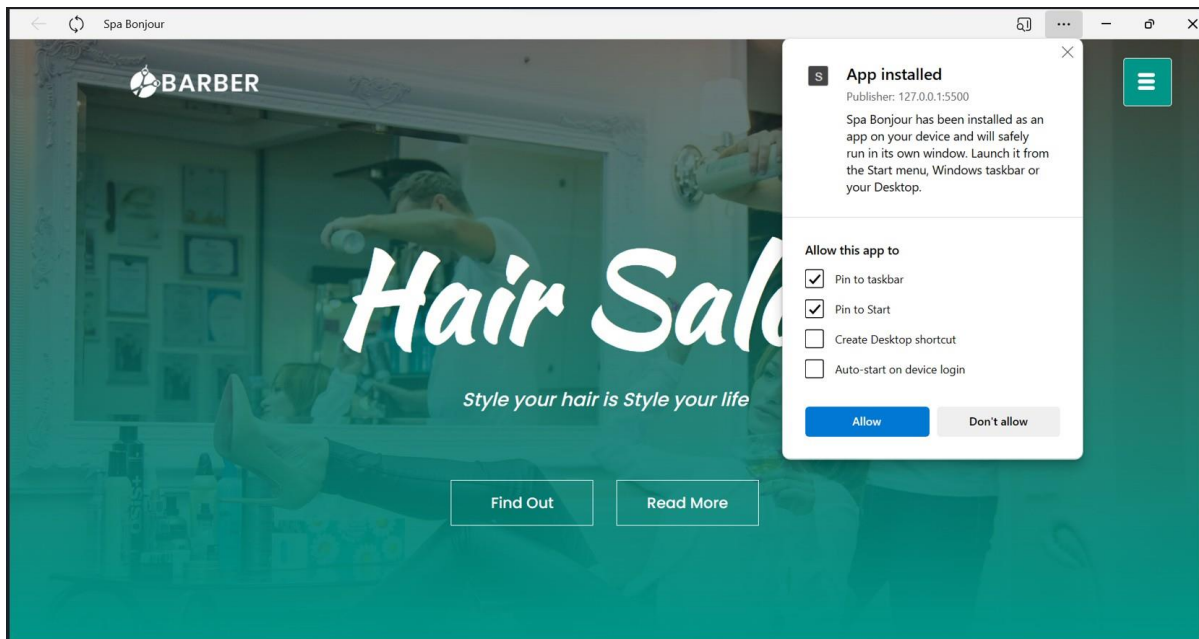
Going to the developers option



Application



Click on 3 dots —> App —> install App



Allow for creating desktop shortcut



Conclusion:

- Thus “add to homescreen feature was successfully implemented”
- We created a shortcut icon to open our websites app locally