

PWA Lab

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

📁 image	3/20/2024 2:31 AM	File folder	
📄 about	3/20/2024 1:57 AM	Chrome HTML Do...	6 KB
📄 blog	3/20/2024 1:56 AM	Chrome HTML Do...	8 KB
📄 contact	3/20/2024 1:57 AM	Chrome HTML Do...	6 KB
📄 index	3/20/2024 2:22 AM	Chrome HTML Do...	19 KB
📄 manifest	3/20/2024 2:32 AM	JSON Source File	1 KB
📄 menu	3/20/2024 1:57 AM	Chrome HTML Do...	7 KB
📄 products	3/20/2024 1:57 AM	Chrome HTML Do...	7 KB
📄 README	1/31/2024 6:56 PM	Markdown Source ...	1 KB
📄 review	3/20/2024 1:56 AM	Chrome HTML Do...	7 KB
📄 script.js	1/31/2024 6:56 PM	JSFile	2 KB
📄 serviceworker.js	3/20/2024 2:57 AM	JSFile	1 KB
📄 style	1/31/2024 6:56 PM	CSS Source File	13 KB

Icons



Index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <!-- Google tag (gtag.js) -->
<script async src="https://www.googletagmanager.com/gtag/js?id=G-CSQNB0SBN9"></script>
<script>
    window.dataLayer = window.dataLayer || [];
    function gtag(){dataLayer.push(arguments);}
    gtag('js', new Date());

    gtag('config', 'G-CSQNB0SBN9');
</script>
<script>
    window.addEventListener('load', () => {
        registerSW();
    });

    // Register the Service Worker
    async function registerSW() {
        if ('serviceWorker' in navigator) {
            try {
                await navigator
                    .serviceWorker
                    .register('serviceworker.js');
            }
            catch (e) {
                console.log('SW registration failed');
            }
        }
    }
</script>
<meta charset="UTF-8">
<meta http-equiv="X-UA-Compatible" content="IE=edge">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<!-- CSS LINK -->
<link rel="stylesheet" href="style.css">
<link rel="manifest"
      href="manifest.json">
<!-- Fontawesome -->
<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.1.1/css/all.min.css"
integrity="sha512-KfkfwYDsLkIlwQp6LFnl8zNdLGxu9YAA1QvwINks4PhcElQSvqcyVLLD9aMhXd13uQjoXtEKNosOWaZqXgel0g=="
crossorigin="anonymous" referrerPolicy="no-referrer" />
<title>Twiggy</title>
</head>
<body>
<!------- HEADER SECTION -->
<header class="header" >
    <a href="#" class="logo">
        
    </a>
    <nav class="navbar">
        <a href=".index.html" class="active">home</a>
```

```
<a href=".about.html">about</a>
<a href=".menu.html">menu</a>
<a href=".products.html">products</a>
<a href=".review.html">review</a>
<a href=".contact.html">contact</a>
<a href=".blog.html">blog</a>
</nav>
<div class="buttons">
    <button id="search-btn">
        <i class="fas fa-search"></i>
    </button>
    <button id="cart-btn">
        <i class="fas fa-shopping-cart"></i>
    </button>
    <button id="menu-btn">
        <i class="fas fa-bars"></i>
    </button>
</div>
<div class="search-form">
    <input type="text" class="search-input" id="search-box" placeholder="Search">
    <i class="fas fa-search"></i>
</div>
<div class="cart-items-container">
    <div class="cart-item">
        <i class="fas fa-times"></i>
        
        <div class="content">
            <h3>cart item 01</h3>
            <div class="price">Rs 50</div>
        </div>
    </div>
    <div class="cart-item">
        <i class="fas fa-times"></i>
        
        <div class="content">
            <h3>cart item 02</h3>
            <div class="price">Rs 100 </div>
        </div>
    </div>
    <div class="cart-item">
        <i class="fas fa-times"></i>
        
        <div class="content">
            <h3>cart item 03</h3>
            <div class="price">Rs 150 </div>
        </div>
    </div>
    <div class="cart-item">
        <i class="fas fa-times"></i>
        
        <div class="content">
            <h3>cart item 04</h3>
            <div class="price">Rs 200 </div>
        </div>
    </div>

```

```

        </div>
        <a href="#" class="btn">check out </a>
    </div>
</header>
<!-------HEADER SECTION -->

<!-------HOME SECTION -->
<section class="home" id="home">
    <div class="content">
        <h3>Twiggy</h3>
        <p>Where cravings meet convenience! Explore a world of flavors and order your favorite meals in just a few taps. Let's make your hunger a thing of the past!</p>
        <a href="#" class="btn">order now</a>
    </div>
</section>
<!-------HOME SECTION -->

<!-------MENU SECTION -->
<section class="menu" id="menu">
    <h1 class="heading">our <span>menu</span></h1>
    <div class="box-container">
        <div class="box">

            <div class="box-head">
                
                <span class="menu-category">Pizza</span>
                <h3>6 Mini Pizzas</h3>
                <div class="price">Rs 349 <span>Rs 499</span></div>
            </div>
            <div class="box-bottom">
                <a href="#" class="btn">add to cart</a>
            </div>
        </div>
        <div class="box">

            <div class="box-head">
                
                <span class="menu-category">Burger</span>
                <h3>5 Mini Burgers</h3>
                <div class="price">Rs 249 <span>Rs 375</span></div>
            </div>
            <div class="box-bottom">
                <a href="#" class="btn">add to cart</a>
            </div>
        </div>
        <div class="box">

            <div class="box-head">
                
                <span class="menu-category">Pizza</span>
                <h3>2 Mixed Pizzas</h3>
                <div class="price">Rs 229 <span>Rs 299</span></div>
            </div>
            <div class="box-bottom">

```

```

        <a href="#" class="btn">add to cart</a>
    </div>
</div>
<div class="box">

<div class="box-head">
    
    <span class="menu-category">Burger</span>
    <h3>3 Meatball Burgers</h3>
    <div class="price">Rs 299 <span>Rs 449</span></div>
</div>
<div class="box-bottom">
    <a href="#" class="btn">add to cart</a>
</div>
</div>
</div>
</section>
<!-----MENU SECTION -->
```

```

<!-----PRODUCTS SECTION -->
<section class="products" id="products">
    <h1 class="heading">our <span>products</span> </h1>
    <div class="box-container">
        <div class="box">
            <div class="box-head">
                <span class="title">mini burger</span>
                <a href="#" class="name">Bacon Burger</a>
            </div>
            <div class="image">
                
            </div>
            <div class="box-bottom">
                <div class="info">
                    <b class="price">Rs 75</b>
                    <span class="amount">110gr / 300 Cal</span>
                </div>
                <div class="product-btn">
                    <a href="#">
                        <i class="fas fa-plus"></i>
                    </a>
                </div>
            </div>
        </div>
        <div class="box">
            <div class="box-head">
                <span class="title">cheese burger</span>
                <a href="#" class="name">cheese Burger</a>
            </div>
            <div class="image">
                
            </div>
            <div class="box-bottom">
                <div class="info">
```

```

        <b class="price">Rs 120</b>
        <span class="amount">140gr / 2500 Cal</span>
    </div>
    <div class="product-btn">
        <a href="#">
            <i class="fas fa-plus"></i>
        </a>
    </div>
</div>
<div class="box">
    <div class="box-head">
        <span class="title">Double burger</span>
        <a href="#" class="name">Double Burger</a>
    </div>
    <div class="image">
        
    </div>
    <div class="box-bottom">
        <div class="info">
            <b class="price">Rs 240</b>
            <span class="amount">440gr / 600 Cal</span>
        </div>
        <div class="product-btn">
            <a href="#">
                <i class="fas fa-plus"></i>
            </a>
        </div>
    </div>
    </div>
</div>
</div>
</section>
<!-----PRODUCTS SECTION -->

<!-----ABOUT US SECTION -->
<section class="about" id="about">
    <h1 class="heading">about <span>us</span> </h1>

    <div class="row">
        <div class="image">
            
        </div>
        <div class="content">
            <h3>What is the secret receipe of our burgers</h3>
            <div class="paragraph">
                <p>Our burgers are made with a special blend of freshly ground beef, seasoned to perfection with our secret spice mix. </p>
                <p>Each patty is grilled to juicy perfection and served on a toasted brioche bun. </p>
                <p>Topped with crisp lettuce, ripe tomatoes, melted cheese, and our signature sauce, it's a burger experience like no other</p>
            </div>
            <a href="#" class="btn">Learn More</a>
        </div>
    </div>
</section>
```

```
<!-------ABOUT US SECTION -->

<!-------REVIEW SECTION -->
<section class="review" id="review">
  <h1 class="heading">customer's <span>review</span> </h1>
  <div class="box-container">
    <div class="box">
      
      <p> I'm always impressed by the range of restaurants available on this website. Whether I'm craving burgers, pizza, or Asian cuisine, I can always find something to satisfy my appetite. The website is reliable, and the food quality is consistently excellent.</p>
      
      <h3>Yash Uskelwar</h3>
      <div class="stars">
        <i class="fas fa-star"></i>
        <i class="fas fa-star"></i>
        <i class="fas fa-star"></i>
        <i class="fas fa-star"></i>
        <i class="fas fa-star-half-alt"></i>
      </div>
    </div>
    <div class="box">
      
      <p>The convenience of ordering food from this website is unmatched. I can order my favorite meals with just a few clicks and have them delivered to my doorstep in no time. The website is well-designed, making it easy to navigate, and the delivery is always prompt.</p>
      
      <h3>Harshita Dubey</h3>
      <div class="stars">
        <i class="fas fa-star"></i>
        <i class="fas fa-star"></i>
        <i class="fas fa-star"></i>
        <i class="fas fa-star"></i>
        <i class="fas fa-star-half-alt"></i>
      </div>
    </div>
    <div class="box">
      
      <p>I love using this fast food delivery website! It's so easy to order my favorite meals from the comfort of my home. The food always arrives hot and delicious, and the delivery is always on time.</p>
      
      <h3>Sneha Utekar</h3>
      <div class="stars">
        <i class="fas fa-star"></i>
        <i class="fas fa-star"></i>
        <i class="fas fa-star"></i>
        <i class="fas fa-star"></i>
        <i class="fas fa-star-half-alt"></i>
      </div>
    </div>
  </div>
</section>
<!-------REVIEW SECTION -->
<!-------CONTACT SECTION -->
<section class="contact" id="contact">
```

```

<h1 class="heading">contact <span>us</span> </h1>
<div class="row">
  <iframe class="map"
src="https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1d3771.8616688864765!2d72.88367541489297!3d19.079384587080392!2m3!1f0!2f0!3f0!3m2!1i1024!2i768!4f15.1!3m3!1m2!1s0x3be7b96f91a6c81f%3A0x7c66614d7f8d15c9!2sKurla%2C%20Mumbai%2C%20Maharashtra!5e0!3m2!1sen!2sin!4v1658505945506!5m2!1sen!2sin"
allowfullscreen="" loading="lazy" referrerpolicy="no-referrer-when-downgrade"></iframe>

<form>
  <h3>get in touch</h3>
  <div class="inputBox">
    <i class="fas fa-user"></i>
    <input type="text" placeholder="name">
  </div>
  <div class="inputBox">
    <i class="fas fa-envelope"></i>
    <input type="email" placeholder="email">
  </div>
  <div class="inputBox">
    <i class="fas fa-phone"></i>
    <input type="number" placeholder="number">
  </div>
  <input type="submit" class="btn" value="contact now">
</form>
</div>
</section>
<section class="blog" id="blog">
  <h1 class="heading">our <span>blog</span> </h1>
  <div class="box-container">
    <div class="box-full">
      <div class="image">
        
      </div>
      <div class="content">
        <a href="#" class="title">how to make burgers</a>
        <span>by admin / 15th Jan, 2024</span>
        <p>A classic cheeseburger starts with a juicy beef patty seasoned with salt and pepper, grilled to perfection. Toast the burger buns until they're lightly golden and assemble the burger with a layer of crisp lettuce, a slice of ripe tomato, a few rings of onion, and a slice of your favorite cheese. Add a dollop of ketchup and mustard for that classic flavor combination. It's simple, delicious, and perfect for any burger lover.</p>
        </div>
        <div class="box-full">
          <div class="image">
            
          </div>
          <div class="content">
            <a href="#" class="title">how to make burgers</a>
            <span>by admin / 1st Feb, 2024</span>
            <p>For a BBQ bacon burger, start by grilling or frying your beef patty to your desired level of doneness. While the patty is cooking, fry up some crispy bacon. Toast your burger buns on the grill or in a pan</p>
          </div>
        </div>
      </div>
    </div>
  </div>
</section>

```

until they're lightly golden. Assemble your burger with a generous spoonful of BBQ sauce on the bottom bun, followed by lettuce, tomato, onion, the beef patty, a slice of cheese, and the crispy bacon. Top it off with the top bun and enjoy the smoky, savory flavors of this delicious burger.</p>

```
    <a href="#" class="btn">read more</a>
    </div>
</div>
<div class="box-full">
    <div class="image">
        
    </div>
    <div class="content">
        <a href="#" class="title">how to make burgers</a>
        <span>by admin / 21st Feb, 2024</span>
        <p>For a spicy jalapeño burger, start by seasoning your beef patty with chili powder and cayenne pepper for an extra kick of heat. Grill or fry the patty until it's cooked to your liking. Slice some jalapeños and remove the seeds for a milder flavor, or leave them in for an extra spicy kick. Toast your burger buns until they're lightly golden and assemble your burger with a layer of lettuce, the beef patty, sliced jalapeños, a slice of pepper jack cheese, and a dollop of spicy mayo. It's a fiery and flavorful burger that's sure to please spice lovers.</p>
        <a href="#" class="btn">read more</a>
    </div>
</div>
</div>
</section>
<section class="footer">
    <div class="search">
        <input type="text" class="search-input" placeholder="Search">
        <button class="btn btn-primary">search</button>
    </div>
    <div class="share">
        <a href="#" class="fab fa-facebook"></a>
        <a href="#" class="fab fa-twitter"></a>
        <a href="#" class="fab fa-instagram"></a>
        <a href="#" class="fab fa-linkedin"></a>
        <a href="#" class="fab fa-pinterest"></a>
    </div>
    <div class="links">
        <a href="#home">home</a>
        <a href="#about">about</a>
        <a href="#menu">menu</a>
        <a href="#products">products</a>
        <a href="#review">review</a>
        <a href="#contact">contact</a>
        <a href="#blog">blog</a>
    </div>
    <div class="credit">
        created by <span>Shubham Nakashe</span> | all rights reserved!
    </div>
</section>
<!-------FOOTER SECTION -->

<script src="./script.js"></script>
</body>
</html>
```

serviceworker.js

```
var staticCacheName = "Twiggy";

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": "Twiggy",
    "start_url": "index.html",
    "display": "standalone",
    "background_color": "#5900b3",
    "theme_color": "black",
    "scope": ".",
    "description": "This is a Fast food delivery app.",
    "icons": [
        {
            "src": "image/cropped.jpg",
            "sizes": "192x192",
            "type": "image/png"
        },
        {
            "src": "image/CompressJPEG.online_512x512_image.jpg",
            "sizes": "512x512",
            "type": "image/png"
        }
    ]
}
```

Starting the server

EXPLORER

WEBX-SITE3

- > image
- > about.html
- > blog.html
- > contact.html
- > index.html
- { manifest.json
- > menu.html
- > products.html
- ① README.md
- > review.html
- JS script.js
- JS serviceworker.js
- # style.css

```

<!-- index.html -->
<html lang="en">
  <head>
    <script>
      gtag('config', 'G-CSQNB0SBN9');

      window.addEventListener('load', () => {
        registerSW();
      });

      // Register the Service Worker
      async function registerSW() {
        if ('serviceWorker' in navigator) {
          try {
            await navigator
              .serviceWorker
              .register('serviceworker.js');
          } catch (e) {
            console.log('SW registration failed');
          }
        }
      }
    </script>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0, shrink-to-fit=no">
    <!-- CSS LINK -->
  </head>
  <body>
    <div>Welcome to the Twiggy website!</div>
    <h1>Twiggy</h1>
    <p>Where Cravings Meet Convenience! Explore A World Of Flavors And Order Your Favorite Meals In Just A Few Taps. Let's Make Your Hunger A Thing Of The Past!</p>
    <a href="#">Order Now</a>
  </body>
</html>

```

OUTLINE

TIMELINE

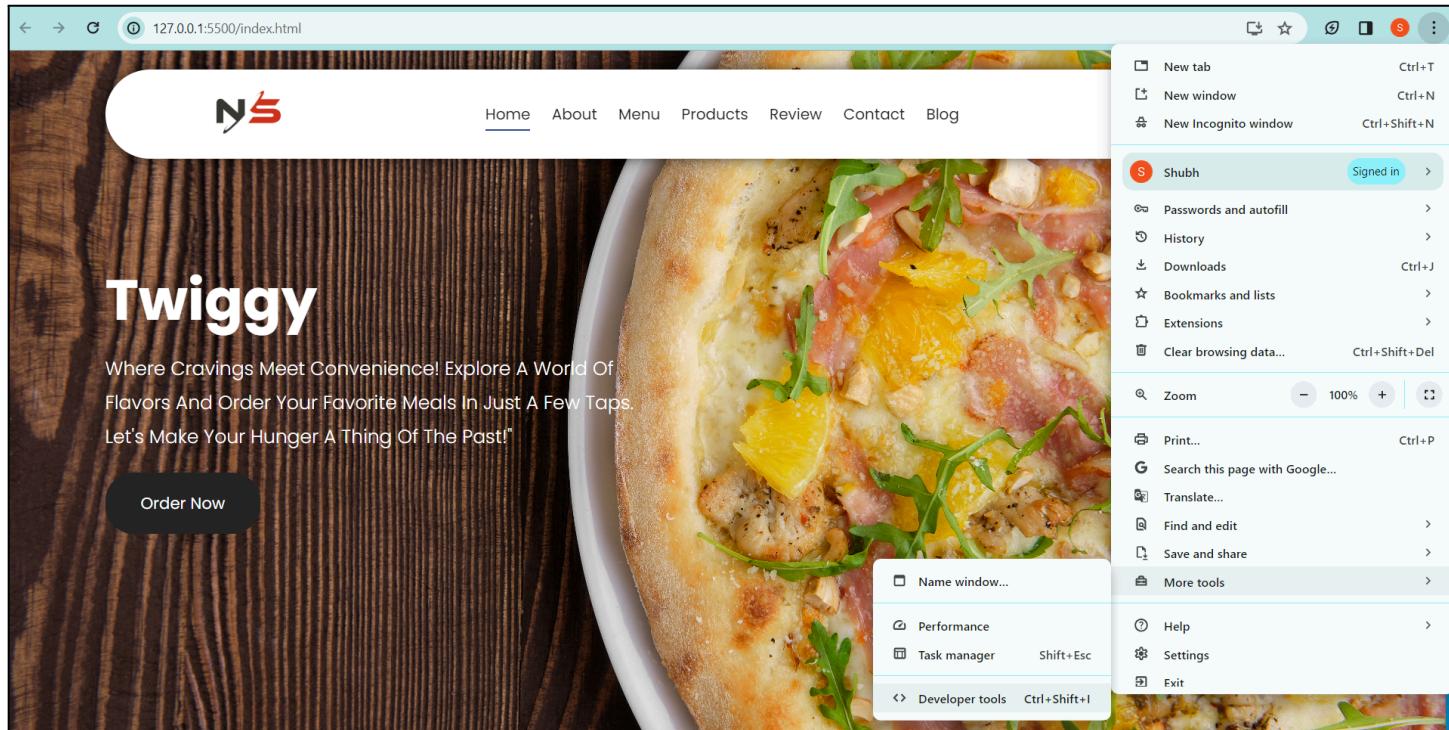
Server is Started at port : 5500

Source: Live Server

Don't show again

main ⌂ 0 ⌂ 0 Share Code Link Generate Commit Message Explain Code Comment Code Find Bugs Code Chat Blackbox ⌂ Locofy UTF-8 CRLF HTML ⌂ Port: 5500 Blackbox ⌂

Going to the developers option



Application

The screenshot shows the Application tab of the browser developer tools open, specifically the 'manifest.json' section. The manifest file contains the following key fields:

```

{
  "name": "Twiggy",
  "short_name": "Twiggy",
  "description": "This is a Fast food delivery app.",
  "start_url": "index.html",
  "theme_color": "#black",
  "background_color": "#5900b3",
  "orientation": "standalone"
}

```

Application

- Manifest
- Service workers
- Storage

Storage

- Local storage
- Session storage
- IndexedDB
- Web SQL
- Cookies
- Private state tokens
- Interest groups
- Shared storage
- Cache storage

Background services

- Back/forward cache
- Background fetch
- Background sync
- Bounce tracking mitigations
- Notifications
- Payment handler
- Periodic background sync
- Speculative loads
- Push messaging
- Reporting API

Frames

- top

App Manifest

[manifest.json](#)

Errors and warnings

- Richer PWA Install UI won't be available on desktop. Please add at least one screenshot with the form_factor set to wide.
- Richer PWA Install UI won't be available on mobile. Please add at least one screenshot for which form_factor is not set or set to a value other than wide.

Identity

Name: Twiggy
Short name:
Description: This is a Fast food delivery app.
Computed App ID: http://127.0.0.1:5500/index.html [Learn more](#)
Note: id is not specified in the manifest, start_url is used instead. To specify an App ID that matches the current identity, set the id field to /index.html.

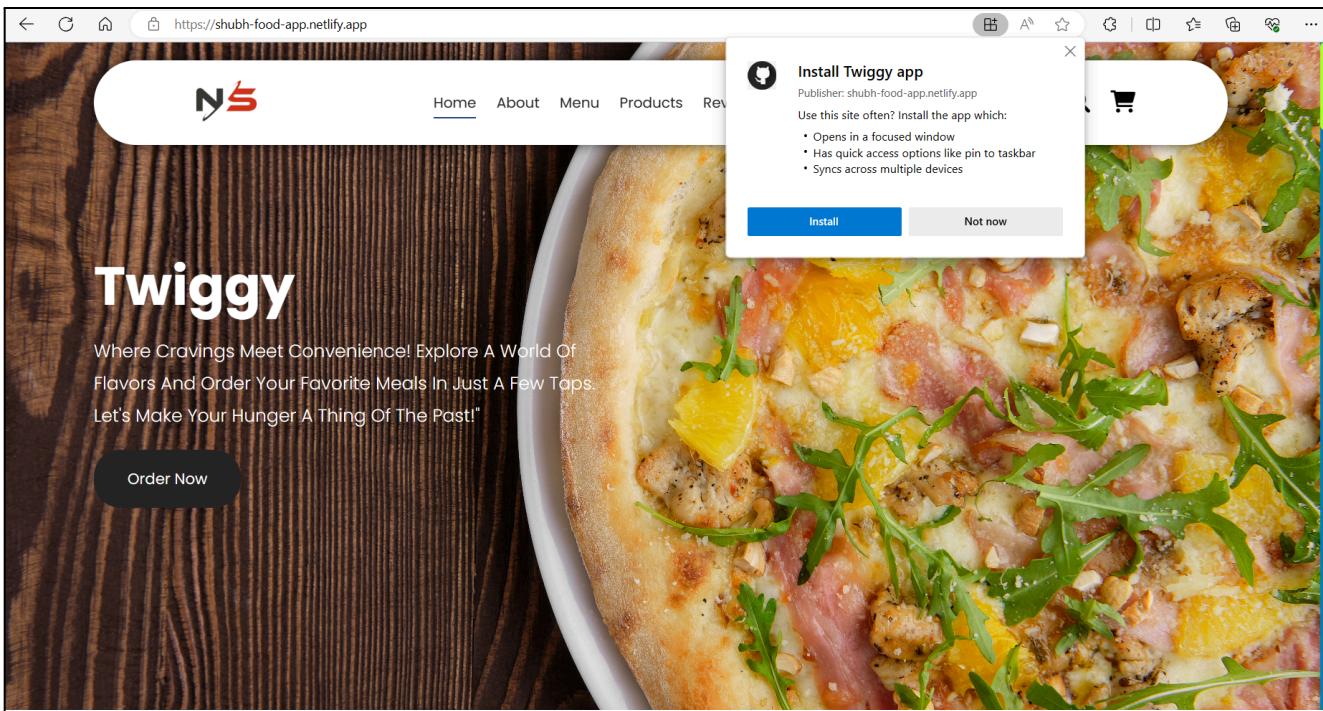
Presentation

Start URL: index.html
Theme color: black
Background color: #5900b3
Orientation:
Display: standalone

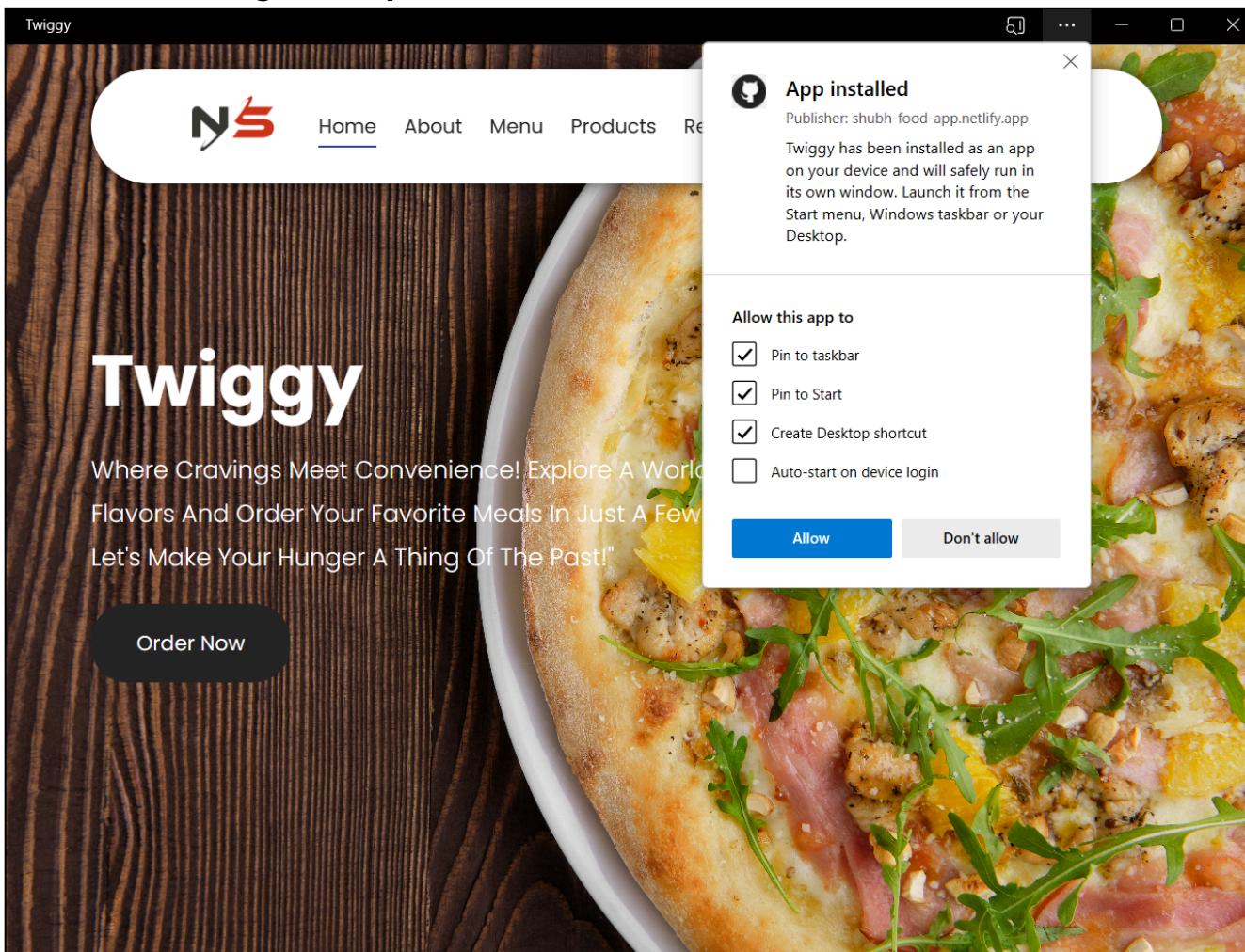
Click on 3 dots → App → install App

The screenshot shows the Microsoft Edge browser's context menu open over the 'Twiggy' website. The menu includes options like New tab, New window, New InPrivate window, Zoom, Favorites, History, Downloads, Apps (which is highlighted), Extensions, Browser essentials, Print, Screenshot, Find on page, More tools, Settings, Help and feedback, and Close Microsoft Edge. The 'Install Twiggy' option under the Apps section is clearly visible.

Click on install



Allow for creating desktop shortcut



This is the Twiggy app that is being created



Conclusion:

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