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Batch - C

Experiment - 7

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

Theory -

It's clear that PWAs offer several advantages over traditional web apps, particularly in terms of providing a more native-like experience, ease of access, faster services, engaging features, and real-time data access.

PWAs leverage modern web technologies and principles to deliver a more app-like experience to users while maintaining the flexibility and accessibility of web apps. By incorporating features such as service workers, PWAs can offer offline capabilities, faster loading times, and seamless updates without requiring users to download or install new versions manually.

The key features of PWAs that distinguish them from regular web apps include:

1. Progressive Enhancement: PWAs are built with progressive improvement principles, ensuring that they work for every user regardless of the browser or device they are using.
2. Responsive Design: PWAs adapt to various screen sizes and orientations, providing a consistent user experience across desktops, mobile devices, and tablets.
3. App-like Experience: PWAs behave like native apps in terms of interaction and navigation, providing a smoother and more immersive user experience.
4. Automatic Updates: PWAs can receive updates automatically from the server, ensuring that users always have access to the latest features and content without needing to manually update the app.
5. Security: PWAs are served over HTTPS to ensure secure connections and prevent unauthorized access or tampering of data.
6. Search Engine Indexing: PWAs are identified as applications and can be indexed by search engines, improving discoverability and visibility.
7. Reactivable: PWAs make it easy for users to reactivate the application and receive notifications, enhancing user engagement and retention.

Overall, PWAs represent a significant advancement in web app development, offering a compelling alternative to traditional native apps with their enhanced performance, user experience, and accessibility across various platforms and devices.

Code -

Index.html

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <meta name="theme-color" content="#4285f4">
  <meta name="viewport"
    content="width=device-width,
      initial-scale=1">
  <meta http-equiv="X-UA-Compatible"
    content="ie=edge">
  <title>Glowing - Reveal The Beauty of Skin</title>

  <link rel="shortcut icon" href="/favicon.svg" type="image/svg+xml">

  <link rel="stylesheet" href="/assets/css/style.css">

  <link rel="preconnect" href="https://fonts.googleapis.com">
  <link rel="preconnect" href="https://fonts.gstatic.com" crossorigin>
  <link
href="https://fonts.googleapis.com/css2?family=Urbanist:wght@400;500;600;700;800&display=
swap" rel="stylesheet">

  <link rel="preload" as="image" href="/assets/images/logo.png">
  <link rel="preload" as="image" href="/assets/images/hero-banner-1.jpg">
  <link rel="preload" as="image" href="/assets/images/hero-banner-2.jpg">
  <link rel="preload" as="image" href="/assets/images/hero-banner-3.jpg">
  <link rel="manifest" href="manifest.json">
  <script src="serviceworker.js"></script>
</head>

<body id="top">
  <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.error('ServiceWorker registration failed: ', e);
            }
        }
    }

    if ('Notification' in window) {
        Notification.requestPermission().then(function (permission) {
            if (permission === 'granted') {
                console.log('Notification permission granted.');
            } else {
                console.warn('Notification permission denied.');
            }
        });
    }
}
</script>
<header class="header">

<div class="alert">
  <div class="container">
    <p class="alert-text">Free Shipping On All U.S. Orders $50+</p>
  </div>
</div>

<div class="header-top" data-header>
  <div class="container">

    <button class="nav-open-btn" aria-label="open menu" data-nav-toggler>
      <span class="line line-1"></span>
      <span class="line line-2"></span>
      <span class="line line-3"></span>
    </button>

```

```
<div class="input-wrapper">
  <input type="search" name="search" placeholder="Search product" class="search-field">

  <button class="search-submit" aria-label="search">
    <ion-icon name="search-outline" aria-hidden="true"></ion-icon>
  </button>
</div>
```

```
<a href="#" class="logo">
  
</a>
```

```
<div class="header-actions">

  <button class="header-action-btn" aria-label="user">
    <ion-icon name="person-outline" aria-hidden="true" aria-hidden="true"></ion-icon>
  </button>

  <button class="header-action-btn" aria-label="favourite item">
    <ion-icon name="star-outline" aria-hidden="true" aria-hidden="true"></ion-icon>

    <span class="btn-badge">0</span>
  </button>

  <button class="header-action-btn" aria-label="cart item">
    <data class="btn-text" value="0">$0.00</data>

    <ion-icon name="bag-handle-outline" aria-hidden="true" aria-hidden="true"></ion-icon>

    <span class="btn-badge">0</span>
  </button>

</div>
```

```
<nav class="navbar">
  <ul class="navbar-list">

    <li>
      <a href="#home" class="navbar-link has-after">Home</a>
    </li>

    <li>
      <a href="#collection" class="navbar-link has-after">Collection</a>
```


Shop

Offer

Blog

</nav>

</div>

</div>

</header>

<div class="sidebar">

<div class="mobile-navbar" data-navbar>

<div class="wrapper">

<button class="nav-close-btn" aria-label="close menu" data-nav-toggler>

<ion-icon name="close-outline" aria-hidden="true"></ion-icon>

</button>

</div>

<ul class="navbar-list">

Home

Collection

Shop

Offer


```

    </li>
    <a href="#blog" class="navbar-link" data-nav-link>Blog</a>
  </li>
</ul>
</div>
<div class="overlay" data-nav-toggler data-overlay></div>
</div>
<main>
<article>
  <section class="section hero" id="home" aria-label="hero" data-section>
    <div class="container">

      <ul class="has-scrollbar">

        <li class="scrollbar-item">
          <div class="hero-card has-bg-image" style="background-image:
url('./assets/images/hero-banner-1.jpg')">

            <div class="card-content">

              <h1 class="h1 hero-title">
                Reveal The <br>
                Beauty of Skin
              </h1>

              <p class="hero-text">
                Made using clean, non-toxic ingredients, our products are designed for everyone.
              </p>

              <p class="price">Starting at $7.99</p>

              <a href="#" class="btn btn-primary">Shop Now</a>

            </div>

          </div>
        </li>

        <li class="scrollbar-item">
          <div class="hero-card has-bg-image" style="background-image:
url('./assets/images/hero-banner-2.jpg')">

            <div class="card-content">

```

```
<h1 class="h1 hero-title">
  Reveal The <br>
  Beauty of Skin
</h1>

<p class="hero-text">
  Made using clean, non-toxic ingredients, our products are designed for everyone.
</p>

<p class="price">Starting at $7.99</p>

<a href="#" class="btn btn-primary">Shop Now</a>

</div>

</div>
</li>

<li class="scrollbar-item">
  <div class="hero-card has-bg-image" style="background-image:
url('./assets/images/hero-banner-3.jpg')">

    <div class="card-content">
      <h1 class="h1 hero-title">
        Reveal The <br>
        Beauty of Skin
      </h1>
      <p class="hero-text">
        Made using clean, non-toxic ingredients, our products are designed for everyone.
      </p>
      <p class="price">Starting at $7.99</p>
      <a href="#" class="btn btn-primary">Shop Now</a>
    </div>
  </div>
</li>
</ul>

</div>
</section>
```

```
<!--  
- #COLLECTION  
-->
```

```
<section class="section collection" id="collection" aria-label="collection" data-section>  
  <div class="container">
```

```
    <ul class="collection-list">
```

```
      <li>
```

```
        <div class="collection-card has-before hover:shine">
```

```
          <h2 class="h2 card-title">Summer Collection</h2>
```

```
          <p class="card-text">Starting at $17.99</p>
```

```
          <a href="#" class="btn-link">
```

```
            <span class="span">Shop Now</span>
```

```
            <ion-icon name="arrow-forward" aria-hidden="true"></ion-icon>  
          </a>
```

```
          <div class="has-bg-image" style="background-image:  
url('./assets/images/collection-1.jpg')"></div>
```

```
        </div>
```

```
      </li>
```

```
      <li>
```

```
        <div class="collection-card has-before hover:shine">
```

```
          <h2 class="h2 card-title">What's New?</h2>
```

```
          <p class="card-text">Get the glow</p>
```

```
          <a href="#" class="btn-link">
```

```
            <span class="span">Discover Now</span>
```

```
            <ion-icon name="arrow-forward" aria-hidden="true"></ion-icon>  
          </a>
```

```
          <div class="has-bg-image" style="background-image:  
url('./assets/images/collection-2.jpg')"></div>
```



```

        </div>
    </li>

    <li>
        <div class="collection-card has-before hover:shine">

            <h2 class="h2 card-title">Buy 1 Get 1</h2>

            <p class="card-text">Starting at $7.99</p>

            <a href="#" class="btn-link">
                <span class="span">Discover Now</span>

                <ion-icon name="arrow-forward" aria-hidden="true"></ion-icon>
            </a>

            <div class="has-bg-image" style="background-image:
url('./assets/images/collection-3.jpg')"></div>

        </div>
    </li>

</ul>

</div>
</section>

<!--
- #SHOP
-->

<section class="section shop" id="shop" aria-label="shop" data-section>
    <div class="container">

        <div class="title-wrapper">
            <h2 class="h2 section-title">Our Bestsellers</h2>

            <a href="#" class="btn-link">
                <span class="span">Shop All Products</span>

```

```
<ion-icon name="arrow-forward" aria-hidden="true"></ion-icon>
</a>
</div>

<ul class="has-scrollbar">

  <li class="scrollbar-item">
    <div class="shop-card">

      <div class="card-banner img-holder" style="--width: 540; --height: 720;">
        

        <span class="badge" aria-label="20% off">-20%</span>

        <div class="card-actions">

          <button class="action-btn" aria-label="add to cart">
            <ion-icon name="bag-handle-outline" aria-hidden="true"></ion-icon>
          </button>

          <button class="action-btn" aria-label="add to wishlist">
            <ion-icon name="star-outline" aria-hidden="true"></ion-icon>
          </button>

          <button class="action-btn" aria-label="compare">
            <ion-icon name="repeat-outline" aria-hidden="true"></ion-icon>
          </button>

        </div>
      </div>

      <div class="card-content">

        <div class="price">
          <del class="del">$39.00</del>

          <span class="span">$29.00</span>
        </div>

        <h3>
          <a href="#" class="card-title">Facial cleanser</a>
        </h3>
      </div>
    </div>
  </li>
</ul>
```

```
<div class="card-rating">

  <div class="rating-wrapper" aria-label="5 start rating">
    <ion-icon name="star" aria-hidden="true"></ion-icon>
    <ion-icon name="star" aria-hidden="true"></ion-icon>
    <ion-icon name="star" aria-hidden="true"></ion-icon>
    <ion-icon name="star" aria-hidden="true"></ion-icon>
    <ion-icon name="star" aria-hidden="true"></ion-icon>
  </div>

  <p class="rating-text">5170 reviews</p>

</div>

</div>

</div>
</li>

<li class="scrollbar-item">
  <div class="shop-card">

    <div class="card-banner img-holder" style="--width: 540; --height: 720;">
      

      <div class="card-actions">

        <button class="action-btn" aria-label="add to cart">
          <ion-icon name="bag-handle-outline" aria-hidden="true"></ion-icon>
        </button>

        <button class="action-btn" aria-label="add to wishlist">
          <ion-icon name="star-outline" aria-hidden="true"></ion-icon>
        </button>

        <button class="action-btn" aria-label="compare">
          <ion-icon name="repeat-outline" aria-hidden="true"></ion-icon>
        </button>

      </div>
    </div>
  </li>
```

```

<div class="card-content">

  <div class="price">
    <span class="span">$29.00</span>
  </div>

  <h3>
    <a href="#" class="card-title">Bio-shroom Rejuvenating Serum</a>
  </h3>

  <div class="card-rating">

    <div class="rating-wrapper" aria-label="5 start rating">
      <ion-icon name="star" aria-hidden="true"></ion-icon>
      <ion-icon name="star" aria-hidden="true"></ion-icon>
      <ion-icon name="star" aria-hidden="true"></ion-icon>
      <ion-icon name="star" aria-hidden="true"></ion-icon>
      <ion-icon name="star" aria-hidden="true"></ion-icon>
    </div>

    <p class="rating-text">5170 reviews</p>

  </div>

</div>

</div>
</li>
..... WHole code on github - https://github.com/tejasrok007/tppwaexp7
.....
<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.error('ServiceWorker registration failed: ', e);
    }
  }
}
if ('Notification' in window) {
  Notification.requestPermission().then(function (permission) {
    if (permission === 'granted') {
      console.log('Notification permission granted.');
```

```

    } else {
      console.warn('Notification permission denied.');
```

```

    }
  });
```

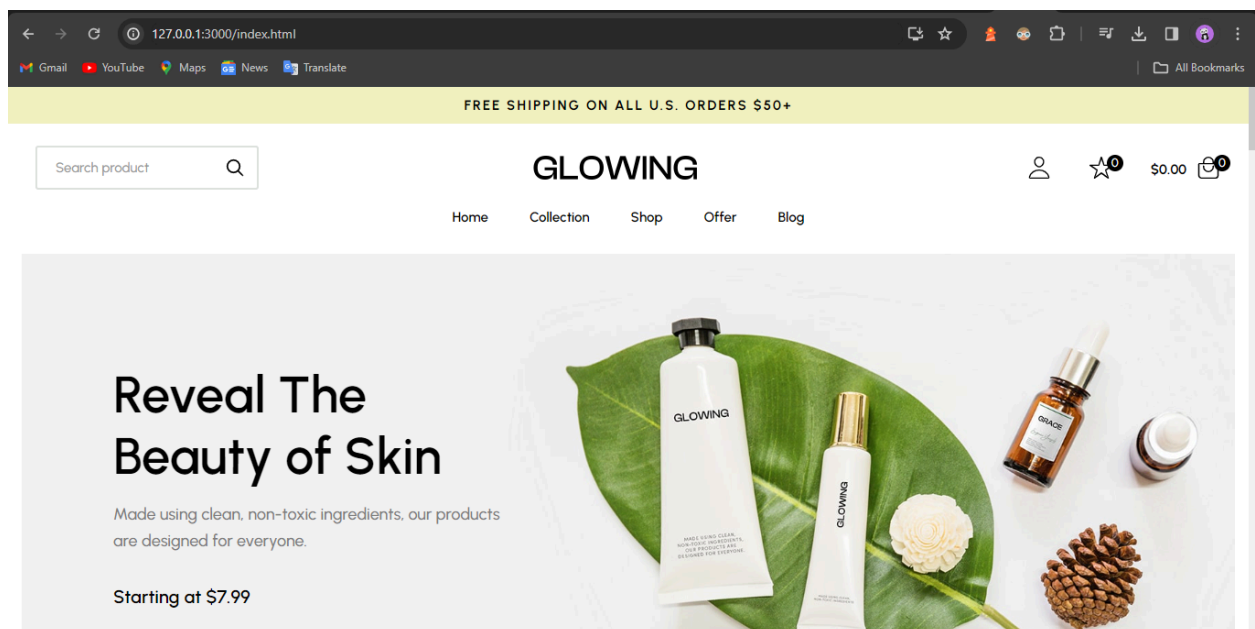
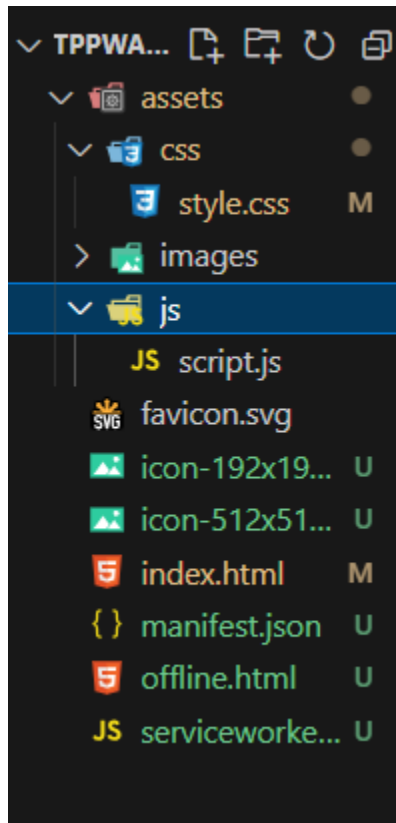
```

}
</script>
```

```

{
  "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": "icon-192x192.png",
      "sizes": "192x192",
      "type": "image/png",
      "purpose": "any maskable"
    },
    {
      "src": "icon-512x512.png",
      "sizes": "512x512",
      "type": "image/png",
      "purpose": "any maskable"
    }
  ]
}
```

}



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

Resource tracking mitigation

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.

Declaring an icon with 'purpose' of 'any maskable' is discouraged. It is likely to look incorrect on some platforms due to too much or too little padding.

Declaring an icon with 'purpose' of 'any maskable' is discouraged. It is likely to look incorrect on some platforms due to too much or too little padding.

Identity

| | |
|-------------|-------------------------|
| Name | PWA Tutorial |
| Short name | PWA |
| Description | This is a PWA tutorial. |

Computed App ID: [https://127.0.0.1:3000/pwa-tutorial](#) @ Learn more

| | |
|-------------------------------|--|
| Application | Identity |
| ▶ Manifest | Name PWA Tutorial |
| ⚙ Service workers | Short name PWA |
| 📁 Storage | Description This is a PWA tutorial. |
| Storage | Computed App ID http://127.0.0.1:3000/index.html ? Learn more |
| ▶ Local storage | 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 📄 . |
| ▶ Session storage | Presentation |
| 📁 IndexedDB | Start URL index.html |
| 📁 Web SQL | Theme color <input type="checkbox"/> black |
| ▶ Cookies | Background color <input checked="" type="checkbox"/> #5900b3 |
| 📁 Private state tokens | Orientation |
| 📁 Interest groups | Display standalone |
| ▶ Shared storage | Protocol Handlers |
| ▶ Cache storage | ① Define protocol handlers in the manifest to register your app as a handler for custom protocols when your app is installed. |
| Background services | Need help? Read URL protocol handler registration for PWAs . |
| 📁 Back/forward cache | Icons |
| ↕ Background fetch | <input type="checkbox"/> Show only the minimum safe area for maskable icons |
| ↻ Background sync | Need help? Read the documentation on maskable icons . |
| 📁 Bounce tracking mitigations | |
| 🔔 Notifications | |
| 📁 Payment handler | |
| 🕒 Periodic background sync | |
| ▶ ↕ Speculative loads | |
| ☁ Push messaging | |
| 📄 Reporting API | |
| Frames | |
| ▶ 📄 top | |

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


Need help? Read [URL protocol handler registration for PWAs.](#)

Icons


☐ Show only the minimum safe area for maskable icons

Need help? Read the [documentation on maskable icons.](#)

192×192px
image/png



512×512px
image/png



Window Controls Overlay

① Define [display-override](#) in the manifest to use the Window Controls Overlay API and customize your app's title bar.

Need help? Read [Customize the window controls overlay of your PWA's title bar.](#)

127.0.0.1:3000/index.html

FREE SHIPPING ON ALL U.S. ORDERS

Search product

GLOWING

Home Collection Shop

Install app?


PWA Tutorial
127.0.0.1:3000

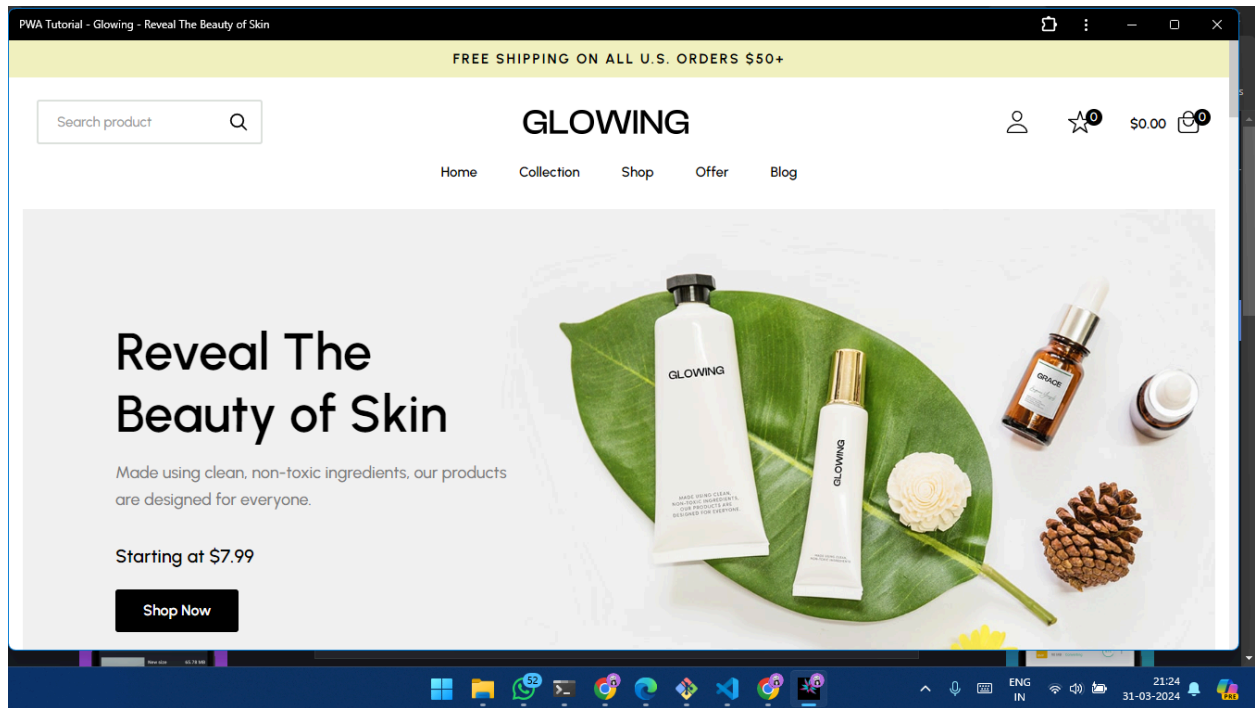
Install Cancel

Reveal The Beauty of Skin

Made using clean, non-toxic ingredients, our products are designed for everyone.

Starting at \$7.99





Conclusion -

In this experiment, we have successfully created a basic progressive web app of our web page and installed it in our desktop successfully.