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PWA EXPERIMENT 7

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.

Pros and cons of the Progressive Web App 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.

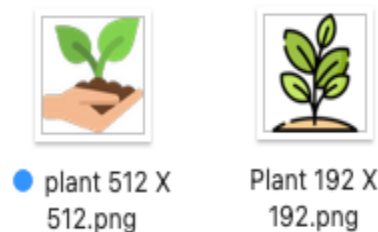
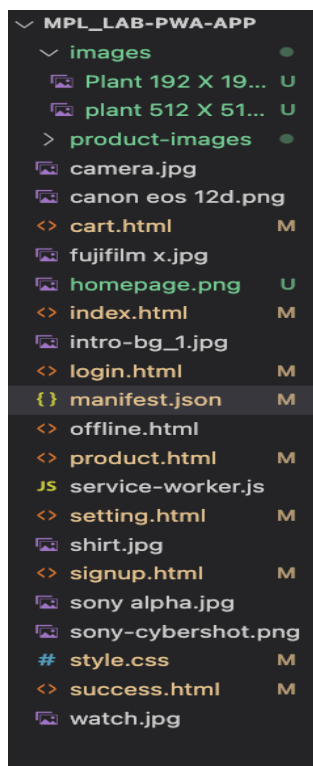
Linkable — Easily shared via URL without complex installations.

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.

Weaknesses refer to: IOS support from version 11.3 onwards; Greater use of the device battery; Not all devices support the full range of PWA features (same speech for iOS and Android operating systems); It is not possible to establish a strong re-engagement for iOS users (URL scheme, standard web notifications); Support for offline execution is however limited; Lack of presence on the stores (there is no possibility to acquire traffic from that channel); There is no “body” of control (like the stores) and an approval process; Limited access to some hardware components of the devices; Little flexibility regarding “special” content for users (eg loyalty programs, loyalty, etc.).

Folder Structure and icon size



Index.html

```
<!DOCTYPE html>
<html>

<head>

  <meta name="apple-mobile-web-app-status-bar" content="#aa7700">
  <meta name="theme-color" content="black">
  <link rel="manifest" href="manifest.json">
  <script src="service-worker.js"></script>
  <title>
    Index
  </title>
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">

  <!--jQuery library-->
  <script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></script>

  <!--Latest compiled and minified JavaScript-->
  <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet" href="style.css">
</head>
```

```
<body>

  <nav class="navbar navbar-inverse navbar-fixed-top">
    <div class="container">
      <div class="navbar-header">
        <button type="button" class="navbar-toggle" data-toggle="collapse"
data-target="#mynavbar">
          <span class="icon-bar"></span>
          <span class="icon-bar"></span>
          <span class="icon-bar"></span>
        </button>
        <a class="navbar-brand" href="index.html">Purity Plants</a>
      </div>
      <div class="collapse navbar-collapse" id="mynavbar">
        <ul class="nav navbar-nav navbar-right">
```

```

        <li>
            <a href="signup.html">
                <span class="glyphicon glyphicon-user" /> Sign-Up </a>
        </li>
        <li>
            <a href="login.html">
                <span class="glyphicon glyphicon-log-in" /> Login </a>
        </li>
    </ul>
</div>

</div>

</nav>
<div class="banner-image">
    <div class="container">
        <div class="banner-content" style="margin-left :25%">
            <h1>All premium plants available here</h1>
            <p>Flat 30% to our new customers</p> <br>
            <a href="product.html" class="btn btn-danger btn-lg active">Shop
Now</a>
        </div>
    </div>
</div>
</div>
<div>
<div class="container">
    <p style="text-align:center;">Copyright © Purity Plants. All Rights
Reserved and Contact Us: +91 8432777111 </p>
    </div>
</div>
</div>
<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('service-worker.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>

</body>

</html>

```

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/Plant 192 X 192.png ",
      "sizes": "192x192",

```

```

    "type": "image/png",
    "purpose": "any maskable"
  },
  {
    "src": "images/plant 512 X 512.png",
    "sizes": "512x512",
    "type": "image/png",
    "purpose": "any maskable"
  }
]
}

```

Service-worker.json

```

// service-worker.js

const CACHE_NAME = 'my-ecommerce-app-cache-v1';
const urlsToCache = [
  '/',
  'cart.html',
  'index.html',
  'product.html',
  'shop.html',
  'style.css',
  'success.html',
  'service-worker.js',
  'manifest.json',
  'offline.html'
  // Add more files to cache as needed
];

self.addEventListener('install', function(event) {
  event.waitUntil(
    caches.open(CACHE_NAME)
      .then(function(cache) {
        console.log('Opened cache');
        return cache.addAll(urlsToCache)
          .catch(function(error) {
            console.error('Cache.addAll error:', error);
          });
      })
  );
});

```

```

    );
});

self.addEventListener('activate', function(event) {
    // Perform activation steps
    event.waitUntil(
        caches.keys().then(function(cacheNames) {
            return Promise.all(
                cacheNames.map(function(cacheName) {
                    if (cacheName !== CACHE_NAME) {
                        return caches.delete(cacheName);
                    }
                })
            );
        });
    );
});

// Fetch event listener
self.addEventListener("fetch", function (event) {
    event.respondWith(checkResponse(event.request).catch(function () {
        console.log("Fetch from cache successful!");
        return returnFromCache(event.request);
    }));
    console.log("Fetch successful!");
    event.waitUntil(addToCache(event.request));
});

// Sync event listener
self.addEventListener('sync', function(event) {
    if (event.tag === 'syncMessage') {
        console.log("Sync successful!");
    }
});

// Push event listener
self.addEventListener("push", function (event) {
    if (event && event.data) {
        try {
            var data = event.data.json();
            if (data && data.method === "pushMessage") {
                console.log("Push notification sent");
            }
        }
    }
});

```



```

        self.registration.showNotification("Ecommerce website", { body: data.message
    });
    }
    } catch (error) {
        console.error("Error parsing push data:", error);
    }
    }
    });

self.addEventListener('activate', async () => {
    if (Notification.permission !== 'granted') {
        try {
            const permission = await Notification.requestPermission();
            if (permission === 'granted') {
                console.log('Notification permission granted.');
            } else {
                console.warn('Notification permission denied.');
            }
        } catch (error) {
            console.error('Failed to request notification permission:', error);
        }
    }
});

var checkResponse = function (request) {
    return new Promise(function (fulfill, reject) {
        fetch(request)
            .then(function (response) {
                if (response.status !== 404) {
                    fulfill(response);
                } else {
                    reject(new Error("Response not found"));
                }
            })
            .catch(function (error) {
                reject(error);
            });
    });
};

var returnFromCache = function (request) {
    return caches.open("offline").then(function (cache) {

```

```

    return cache.match(request).then(function (matching) {
      if (!matching || matching.status == 404) {
        return cache.match("offline.html");
      } else {
        return matching;
      }
    });
  });
};

var addToCache = function (request) {
  return caches.open("offline").then(function (cache) {
    return fetch(request).then(function (response) {
      return cache.put(request, response.clone()).then(function () {
        return response;
      });
    });
  });
};

```

Product.html

```

<!DOCTYPE html>
<html>

  <head>
    <title>
      product
    </title>
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css" >

    <!--jQuery library-->
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></script>

    <!--Latest compiled and minified JavaScript-->
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <link rel = "stylesheet" href = "style.css">

```

```

</head>
<body>
  <nav class = "navbar navbar-inverse navbar-fixed-top">
    <div class ="container">
      <div class ="navbar-header">
        <button type="button" class ="navbar-toggle"
data-toggle="collapse" data-target="#mynavbar">
          <span class="icon-bar"></span>
          <span class="icon-bar"></span>
          <span class="icon-bar"></span>
        </button>
        <a class="navbar-brand" href="index.html">Purity Plants</a>

      </div>
      <div class="collapse navbar-collapse" id="mynavbar">
        <ul class="nav navbar-nav navbar-right">
          <li>
            <a href="cart.html">
              <span class="glyphicon
glyphicon-shopping-cart"> Cart </span> </a>
          </li>
          <li>
            <a href="setting.html">
              <span class="glyphicon glyphicon-user">
Setting</span> </a>
          </li>
          <li>
            <a href="index.html">
              <span class="glyphicon glyphicon-log-out">
Logout</span></a>
          </li>
        </ul>
      </div>
    </div>
  </nav>

  <div class =" container" style="margin-top: 5%;">

  <div class ="jumbotron">

```

```
<h1> Welcome  to our Purity Plants!  </h1>
<p>We have the best quality and rare breed of plants at our botany </p>
</div>
```

```
<div class="row text-center">
  <div class=" col-md-3 col-sm-6  thumbnail " >
    
    <div class="caption">
      <h2>Corpse Flower</h2>
      <p>Large foul-smelling bloom.</p>

    </div>
    <div class=" btn btn-primary  btn-block btn-md btn-success"> 300
  </div>
</div>
```

```
<div class=" col-md-3 col-sm-6  thumbnail " >
  
  <div class="caption">
    <h2>Jade Vine</h2>
    <p>Turquoise flowers in clusters.</p>

  </div>
  <div class=" btn btn-primary  btn-block btn-md btn-success"> 240
</div>
</div>
```

```
<div class=" col-md-3 col-sm-6  thumbnail " >
  
  <div class="caption">
    <h2>Wollemi Pine</h2>
    <p>"Living fossil" from Australia</p>

  </div>
  <div class=" btn btn-primary  btn-block btn-md btn-success"> 290
</div>
</div>
```

```
<div class=" col-md-3 col-sm-6  thumbnail " >
  
```

```

<div class="caption">
<h2>Ghost Orchid</h2>
<p>Ghostly white floating flowers.</p>
</div>

<div class=" btn btn-primary btn-block btn-md btn-success"> 500
</div>

</div>

</div>

<div class="row text-center">

<div class=" col-md-3 col-sm-6 thumbnail " >

<div class="caption">
<h2>Lithops</h2>
<p>Succulents resembling rocks.</p>
</div>
<div class=" btn btn-primary btn-block btn-md btn-success"> 499
</div>
</div>

<div class=" col-md-3 col-sm-6 thumbnail " >

<div class="caption">
<h2>Black Bat Flower</h2>
<p>Dark purple bat-like flowers.</p>
</div>
<div class=" btn btn-primary btn-block btn-md btn-success"> 129
</div>
</div>

<div class=" col-md-3 col-sm-6 thumbnail " >

  <div class="caption">
    <h2>Venus Flytrap</h2>
    <p>Carnivorous plant trapping insects.</p>
  </div>

```

```

        </div>

        <div class=" btn btn-primary btn-block btn-md btn-success"> 199
    </div>

</div>

<div class=" col-md-3 col-sm-6 thumbnail " >

<div class="caption">
<h2>Kadupul Flower </h2>
<p>Night-blooming Sri Lankan flower.</p>
</div>
<div class=" btn btn-primary btn-block btn-md btn-success"> 209
</div>

</div>
</div>

<div class="row text-center">

<div class=" col-md-3 col-sm-6 thumbnail " >

    <div class="caption">
<h2>Rainbow Eucalyptus</h2>
<p>Multicolored peeling bark.</p>
</div>
<div class=" btn btn-primary btn-block btn-md btn-success">299 </div>

</div>

<div class=" col-md-3 col-sm-6 thumbnail " >

    <div class="caption">
<h2>Corkscrew Vine</h2>
<p>Fragrant spiral-shaped flowers.</p>
</div>
<div class=" btn btn-primary btn-block btn-md btn-success">300</div>
</div>

<div class=" col-md-3 col-sm-6 thumbnail " >

```

```

        
        <div class="caption">
        <h2>Night-blooming Cereus:</h2>
        <p>Fragrant nocturnal blooms.</p>
        </div>
        <div class=" btn btn-primary btn-block btn-md btn-success">249 </div>
    </div>

    <div class=" col-md-3 col-sm-6 thumbnail " >
    
    <div class="caption">
    <h2>Bleeding Tooth Fungus</h2>
    <p>Blood-like liquid oozes.</p>
    </div>
    <div class=" btn btn-primary btn-block btn-md btn-success">249 </div>
    </div>
</div>

<footer style="margin-top: 5%; margin-bottom:.5%;">
    <div class="container" >
        <p style="text-align:center;">Copyright © Purity
Plants. All Rights Reserved and Contact Us: +91 85321 11111 </p>
    </div>
</footer>

</body>
</html>

```

Style.css

```

.banner-image
{padding-top: 75px;
padding-bottom: 50px;
text-align: center;
color: #f8f8f8;
background: url(homepage.png) no-repeat center center;
background-size: cover;
}

```

```
.banner-content{
  position: relative;
  padding-top: 6%;
padding-bottom: 6%;

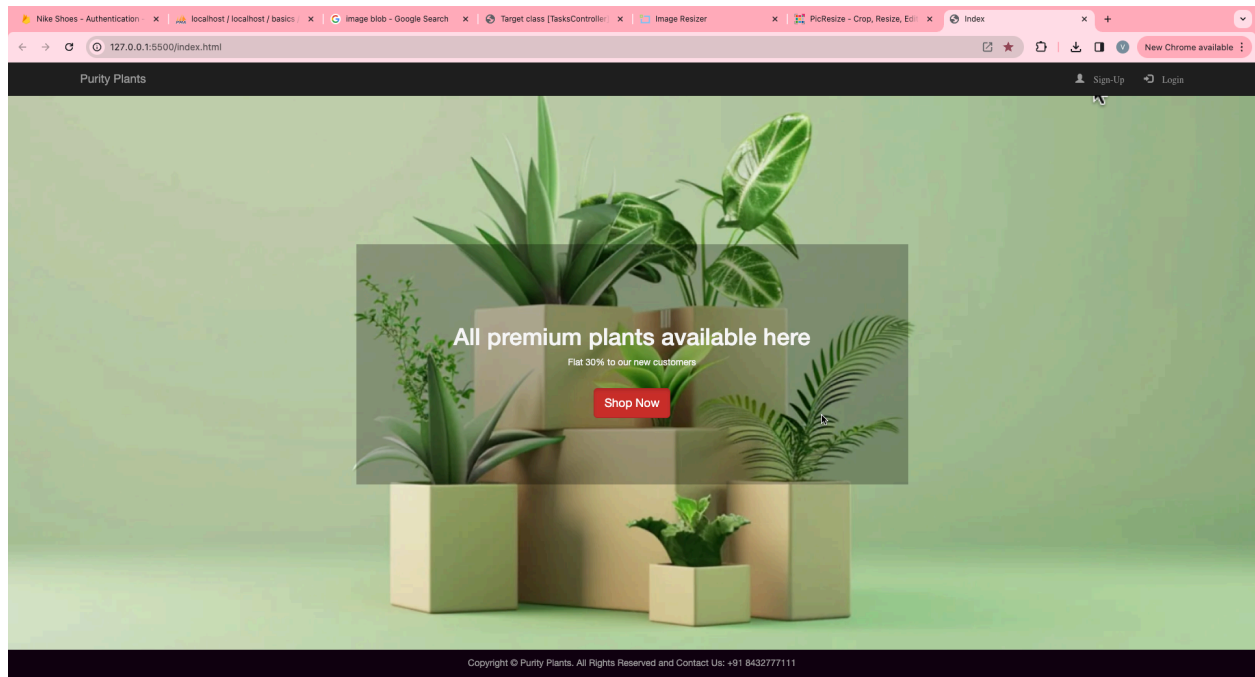
margin-top: 12%;
margin-bottom: 12%;
background-color: rgba(0, 0, 0, 0.3);
width: 50%;
text-align:center;
}
footer
{
padding: 10px 0;
background-color: #110011;
color:#9d9d9d;
bottom: 0;
width: 100%;
}
.container{
  width:90%;
margin:auto;
overflow:hidden;

}
```

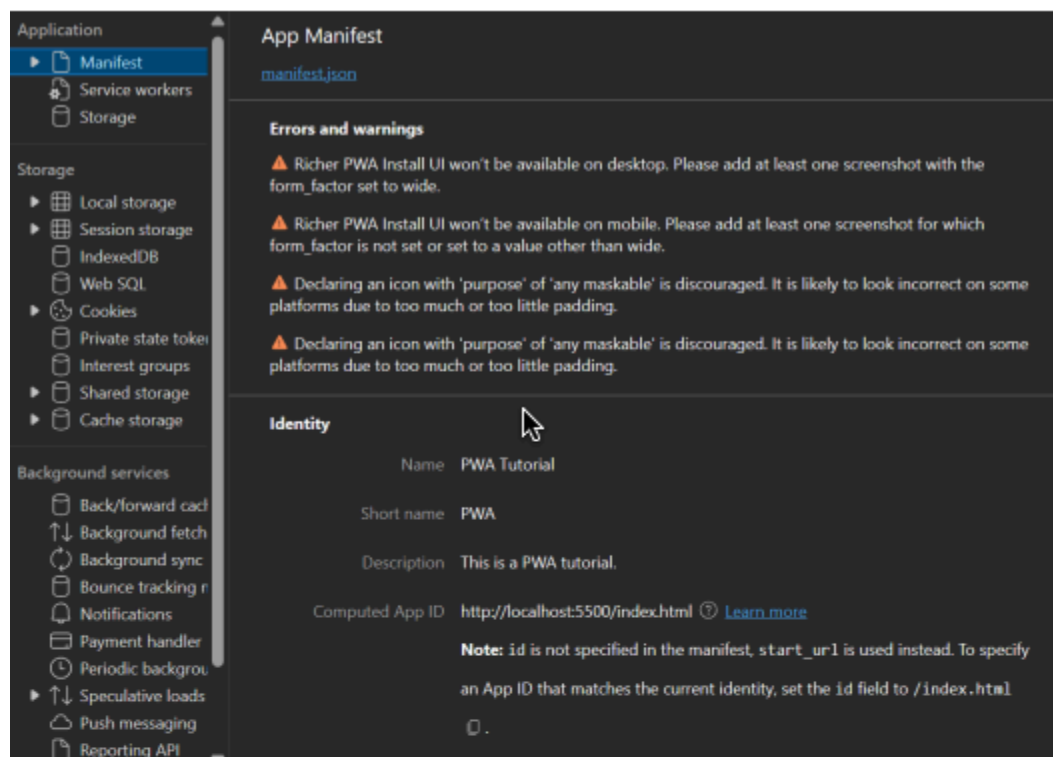

Starting the Server

:

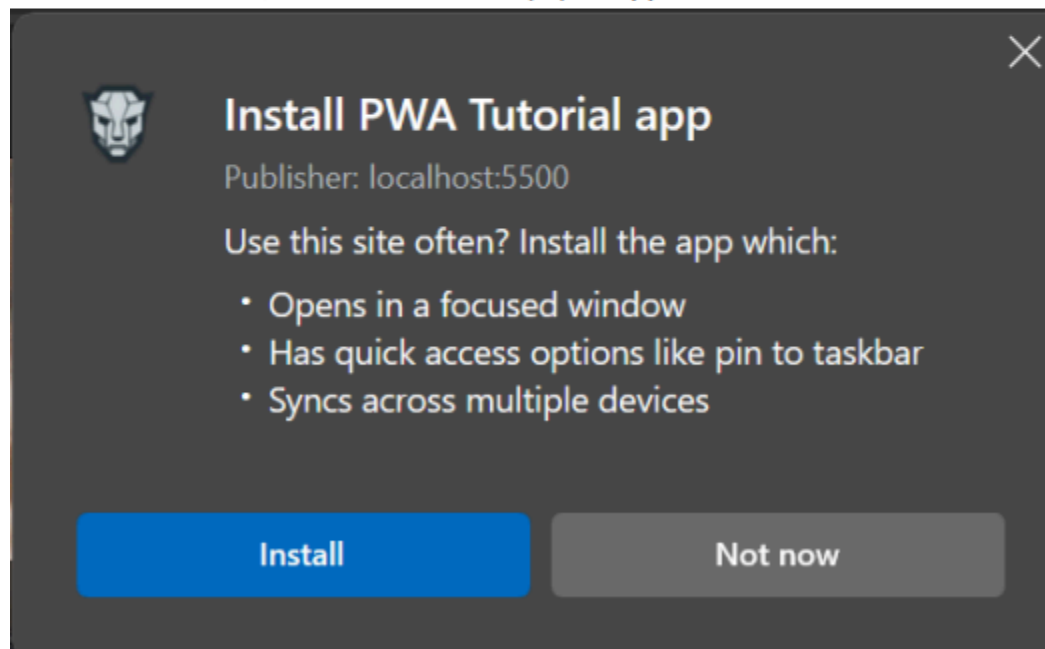
```
index.html M X # style.css M signup.html M login.html M product.html M {} manifest.json M JS service-worker.js
index.html > html > body > script > registerSW
1 <!DOCTYPE html>
2 <html>
3
4 <head>
5   <meta name="apple-mobile-web-app-status-bar" content="#aa7700">
6   <meta name="theme-color" content="black">
7   <link rel="manifest" href="manifest.json">
8   <script src="service-worker.js"></script>
9   <title>
10     Index
11   </title>
12   <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">
13
14   <!--jQuery library-->
15   <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></script>
16
17   <!--Latest compiled and minified JavaScript-->
18   <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>
19   <meta name="viewport" content="width=device-width, initial-scale=1">
20   <link rel="stylesheet" href="style.css">
21 </head>
22
23 <body>
24
25   <nav class="navbar navbar-inverse navbar-fixed-top">
26     <div class="container">
27       <div class="navbar-header">
28         <button type="button" class="navbar-toggle" data-toggle="collapse" data-target="#mynavbar">
29           <span class="icon-bar"></span>
30           <span class="icon-bar"></span>
31           <span class="icon-bar"></span>
32         </button>
33         <a class="navbar-brand" href="index.html">Purity Plants</a>
34       </div>
35       <div class="collapse navbar-collapse" id="mynavbar">
36         <ul class="nav navbar-nav navbar-right">
37
```



Now go to developer options -> Application->Manifest




Now to install PWA , click on Three dots(...) -> Apps -> Install PWA






flutter 2




Sublime Text 



PWA Tutorial 



2c4244fe-
dcbd-42...1.jpg 



ZEB-
MAX_NI..._UM.pdf



Simulator Screen
Recordi...8.56.mp4



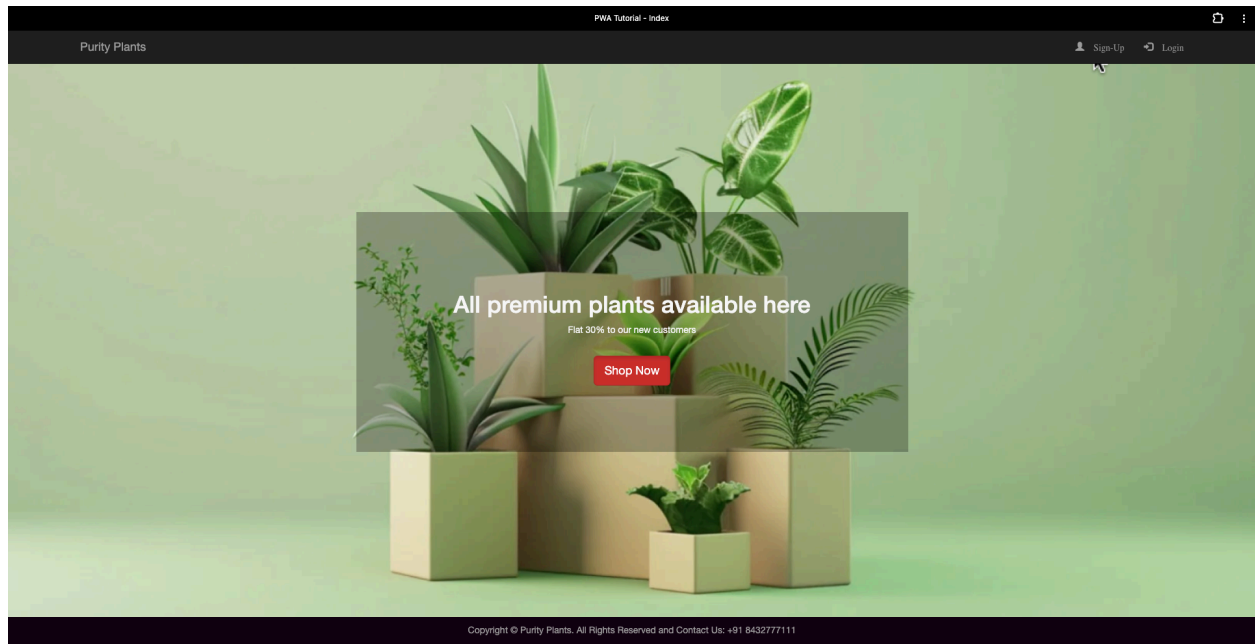
removeVowels.java



Other



Screenshots



Conclusion: Hence We wrote meta data of our Ecommerce PWA in a Web app manifest file to enable “add to homescreen feature”. And it is currently added Successfully on the Desktop