

## Experiment 7

### MAD & PWA LAB

**Aim:** To write the metadata of your Ecommerce PWA in a web app manifest file to enable "add to home screen" feature!.

#### Theory-

##### Regular Web App-

A regular web app is accessed through the device's browser. It is built using web technologies and adjusts to the user's screen. It offers some features but does not offer some native app features. Compatibility depends on the user's browser, so some features may not work on certain browsers.

##### Progressive Web Apps (PWAs)

PWAs are a relatively new type of web application that combines the best of mobile websites and native apps. They are built using web technologies like HTML, CSS, and JavaScript, but they offer features that are typically only found in native apps, such as push notifications and the ability to work offline.

##### Benefits of PWAs

- Improved user experience: PWAs are designed to provide a fast and responsive user experience, even on low-bandwidth connections. They can also be installed on a user's home screen, which makes them look and feel more like native apps.
- Increased engagement: PWAs can send push notifications to users, which can help to keep them engaged with the app. They can also work offline, which means that users can access content even when they don't have an internet connection.
- Lower development costs: PWAs can be developed using existing web technologies, which can help to reduce development costs. They can also be deployed to a wide range of devices without having to go through an app store approval process.

##### How PWAs work

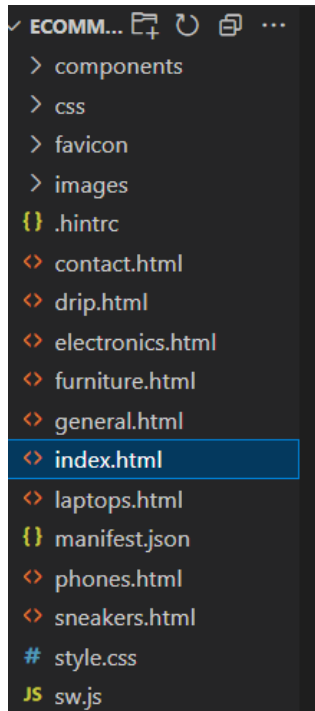
PWAs use a variety of technologies to provide a native-like experience, including:

- Service workers: Service workers are scripts that run in the background and allow PWAs to work offline and send push notifications.
- Web app manifests: Web app manifests are JSON files that provide information about the PWA, such as its name, icon, and start URL. They also allow PWAs to be installed on a user's home screen.
- Cache API: The Cache API allows PWAs to store content offline so that users can access it even when they don't have an internet connection.

Are PWAs right for you?

PWAs are a good option for businesses that want to create a web application that can be accessed on a wide range of devices and offers a native-like user experience. However, they may not be the right option for all businesses. For example, PWAs may not be suitable for complex applications that require a lot of

## Implementation :



### Index.html:

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

<head>

<link rel="apple-touch-icon" href="favicon/apple-touch-icon.png">
<link rel="shortcut icon" href="./images/air.png" type="image/x-icon">
<!-- Primary Meta Tags -->
<title>The Best Indian E-commerce Store</title>
<meta charset="utf-8" />
<meta name="viewport" content="width=device-width, initial-scale=1" />
<meta name="theme-color" content="#F2EAE3">
<meta name="title" content="Buy and sell products Online">
<meta name="description" content="Visit comrademarket.com to start selling your products now.">
<meta property="og:title" content="Buy and sell products Online" />
<meta property="og:url" content="https://www.comrademarket.com/" />
<meta property="og:description" content="Visit comrademarket.com to start selling your products now.">
<meta property="og:image" content="https://www.linkpicture.com/q/final_618e23035795e00080017401_7.png">
```

```
<meta property="og:type" content="article" />
<meta property="og:image" content="url_image">
```

```
<!-- Open Graph / Facebook -->
```

```
<meta property="og:type" content="website">
<meta property="og:url" content="https://www.comrademarket.com/">
<meta property="og:title" content="Buy and sell products Online">
<meta property="og:description" content="Visit comrademarket.com to start selling your products now.">
<meta property="og:image" content="https://www.linkpicture.com/q/better.png">
```

```
<!-- Twitter -->
```

```
<meta property="twitter:card" content="summary_large_image">
<meta property="twitter:url" content="https://www.comrademarket.com/">
<meta property="twitter:title" content="Buy and sell products Online">
<meta property="twitter:description" content="Visit comrademarket.com to start selling your products now.">
<meta property="twitter:image" content="https://www.linkpicture.com/q/better.png">
```

```
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta1/dist/css/bootstrap.min.css" rel="stylesheet" />
<link href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-awesome.min.css" rel="stylesheet" />
<link rel="stylesheet" href="style.css" />
<link rel="manifest" href="/manifest.json">
```

```
</head>
```

```
<body oncontextmenu="return false" class="snippet-body">
```

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

```
//popup to prompt install
```

```
let deferredPrompt;
```

```
window.addEventListener('beforeinstallprompt', (e) => {
  deferredPrompt = e;
});
```

```
//logic for install buttonInstall
```

```
const installApp = document.getElementById('installApp');
```

```
installApp.addEventListener('click', async () => {
  if (deferredPrompt !== null) {
    deferredPrompt.prompt();
    const { outcome } = await deferredPrompt.userChoice;
    if (outcome === 'accepted') {
      deferredPrompt = null;
    }
  }
});
```

```
//logic for install buttonInstall
```

```
</script>
```

```
<div class="container">
  <nav class="navbar navbar-expand-lg navbar-light">
    <div class="container-fluid">
      <a class="navbar-brand name" href="index.html">ECOMMERCE</a>
      <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target="#navbarSupportedContent"
        aria-controls="navbarSupportedContent" aria-expanded="false" aria-label="Toggle navigation">
        <span class="navbar-toggler-icon"></span>
      </button>
      <div class="collapse navbar-collapse" id="navbarSupportedContent">
        <ul class="navbar-nav me-auto mb-2 mb-lg-0">
          <li class="nav-item">
            <a class="nav-link" href="index.html">CATEGORIES</a>
          </li>
          <li class="nav-item"><a class="nav-link" href="CONTACT.html">CONTACT</a></li>
        </ul>
      </div>
    </div>
  </nav>
<!--navbar-->
```

```
<div class="d-flex justify-content-center align-items-center mt-5">
  <button class="btn btn-dark">OUR CATEGORIES</button>
</div>
<div class="d-flex justify-content-center mt-3">
  <span class="text text-center">BEST PRODUCTS AVAILABLE HERE<br />
</span>
</div>
<div class="row mt-2 g-4">
  <div class="col-md-3">
    <a href="phones.html">
      <div class="card p-1">
        <div class="d-flex justify-content-between align-items-center p-2">
          <div class="flex-column lh-1 imagename">
            <span>Mobile</span> <span>Phones</span>
          </div>
        </div>
        
```

```
</div>
    </div>
  </div>
</a>
</div>
<div class="col-md-3">
  <a href="electronics.html">
    <div class="card p-2">
```

```
<div class="d-flex justify-content-between align-items-center p-2">
  <div class="flex-column lh-1 imagename">
    <span>Tech</span> <span>Accessories</span>
  </div>
  <div>
  </div>
</div>
</div>
</a>
</div>
<div class="col-md-3">
  <a href="/furniture.html">
    <div class="card p-2">
      <div class="d-flex justify-content-between align-items-center p-2">
        <div class="flex-column lh-1 imagename">
          <span>Reasonable</span> <span>Furniture</span>
        </div>
        <div>
          
    </div>
  </div>
</div>
</a>
</div>
<div class="col-md-3">
  <a href="/sneakers.html">
    <div class="card p-2">
      <div class="d-flex justify-content-between align-items-center p-2">
        <div class="flex-column lh-1 imagename">
          <span>Dope </span> <span>sneakers</span>
        </div>
        <div>
          
        </div>
      </div>
    </div>
  </a>
</div>
<div class="col-md-3">
  <a href="/laptops.html">
    <div class="card p-2">
      <div class="d-flex justify-content-between align-items-center p-2">
        <div class="flex-column lh-1 imagename">
          <span>Affordable</span> <span>Laptops</span>
        </div>
        <div>
          
        </div>
      </div>
    </div>
  </a>
</div>
```

```
</a>
</div>
<div class="col-md-3">
  <a href="drip.html">
    <div class="card p-2">
      <div class="d-flex justify-content-between align-items-center p-2">
        <div class="flex-column lh-1 imagename">
          <span>Find</span> <span> the Drip</span>
        </div>
      </div>
      <div>
        
      </div>
    </div>
  </a>
</div>
<div class="col-md-3">
  <a href="/electronics.html">
    <div class="card p-2">
      <div class="d-flex justify-content-between align-items-center p-2">
        <div class="flex-column lh-1 imagename">
          <span>Smart</span> <span>Electronics</span>
        </div>
      </div>
      <div>
        <div>
          <div>
            </div>
          </div>
        </div>
      </div>
    </div>
  </a>
</div>
<div class="col-md-3">
  <a href="/general.html">
    <div class="card p-2">
      <div class="d-flex justify-content-between align-items-center p-2">
        <div class="flex-column lh-1 imagename"><span>General</span></div>
      </div>
      <div>
        
      </div>
    </div>
  </a>
</div>
</div>
<br>
<br>
<script>
```

```
    async function registerSW(){
      if('serviceWorker' in navigator){
        try{
          await navigator.serviceWorker.register('./sw.js');
        }catch(e){
          console.log(`SW registration failed`);
        }
      }
    }
  }
</script>
<!-- Google tag (gtag.js) -->
<script async src="https://www.googletagmanager.com/gtag/js?id=G-CBB6LYYHZX"></script>
<script>
  window.dataLayer = window.dataLayer || [];
  function gtag() { dataLayer.push(arguments); }
  gtag('js', new Date());

  gtag('config', 'G-CBB6LYYHZX');
</script>

<script type="text/javascript"
  src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta1/dist/js/bootstrap.bundle.min.js"></script>
<script type="text/javascript"></script>
</body>

</html>
```

## Manifest.json:

```
{
  "name": "Ecommerce PWA",
  "short_name": "Ecommerce",
  "start_url": ".",
  "display": "standalone",
  "background_color": "#fafafa",
  "theme_color": "#FFD567",
  "description": "Preview maskable icons in the browser.",
  "icons": [
    {
      "src": "favicon/favicon_512.png",
      "sizes": "512x512",
      "type": "image/png",
      "purpose": "any"
    },
    {
      "src": "favicon/favicon.svg",
      "sizes": "any",
      "type": "image/svg+xml",
      "purpose": "any"
    },
    {
      "src": "favicon/maskable_512.png",
      "sizes": "512x512",
      "type": "image/png",
      "purpose": "maskable"
    }
  ]
}
```

```
{
  "src": "favicon/maskable.svg",
  "sizes": "any",
  "type": "image/svg+xml",
  "purpose": "maskable"
},
{
  "src": "favicon/monochrome_256.png",
  "sizes": "256x256",
  "type": "image/png",
  "purpose": "monochrome"
},
{
  "src": "favicon/apple-touch-icon.png",
  "sizes": "180x180",
  "type": "image/png"
}
],
"shortcuts": [
  {
    "name": "Editor",
    "description": "Build your own maskable icon",
    "url": "/editor",
    "icons": [
      {
        "src": "favicon/editor_192.png",
        "sizes": "192x192",
        "type": "image/png",
        "purpose": "any monochrome"
      },
      {
        "src": "favicon/editor.svg",
        "sizes": "any",
        "type": "image/svg+xml",
        "purpose": "any monochrome"
      }
    ]
  }
]
}
```

**SW.JS:**

```
const cacheName = "Ecommerce";
const staticAssets = [
  "./",
  "./index.html",
  "./about.html",
  "./drip.html",
  "./electronics.html",
  "./furniture.html",
  "./general.html",
  "./index.html",
  "./laptops.html",
```



```
"/phones.html",
"/sneakers.html",
"/manifest.json",
"/style.css",
];
self.addEventListener("install", async () => {
  const cache = await caches.open(cacheName);
  await cache.addAll(staticAssets);
  return self.skipWaiting();
});
self.addEventListener("activate", () => {
  self.clients.claim();
});
self.addEventListener("fetch", async (event) => {
  const request = event.request;
  const url = new URL(request.url);

  if (url.origin === location.origin) {
    event.respondWith(cacheFirst(request));
  } else {
    event.respondWith(networkAndCache(request));
  }
});

async function cacheFirst(request) {
  const cache = await caches.open(cacheName);
  const cached = await cache.match(request);
  return cached || fetch(request);
}

async function networkAndCache(request) {
  const cache = await caches.open(cacheName);
  try {
    const response = await fetch(request);
    await cache.put(request, response.clone());
    console.log("Fetch Successful");
    return response;
  } catch (error) {
    const cached = await cache.match(request);
    return cached;
  }
}

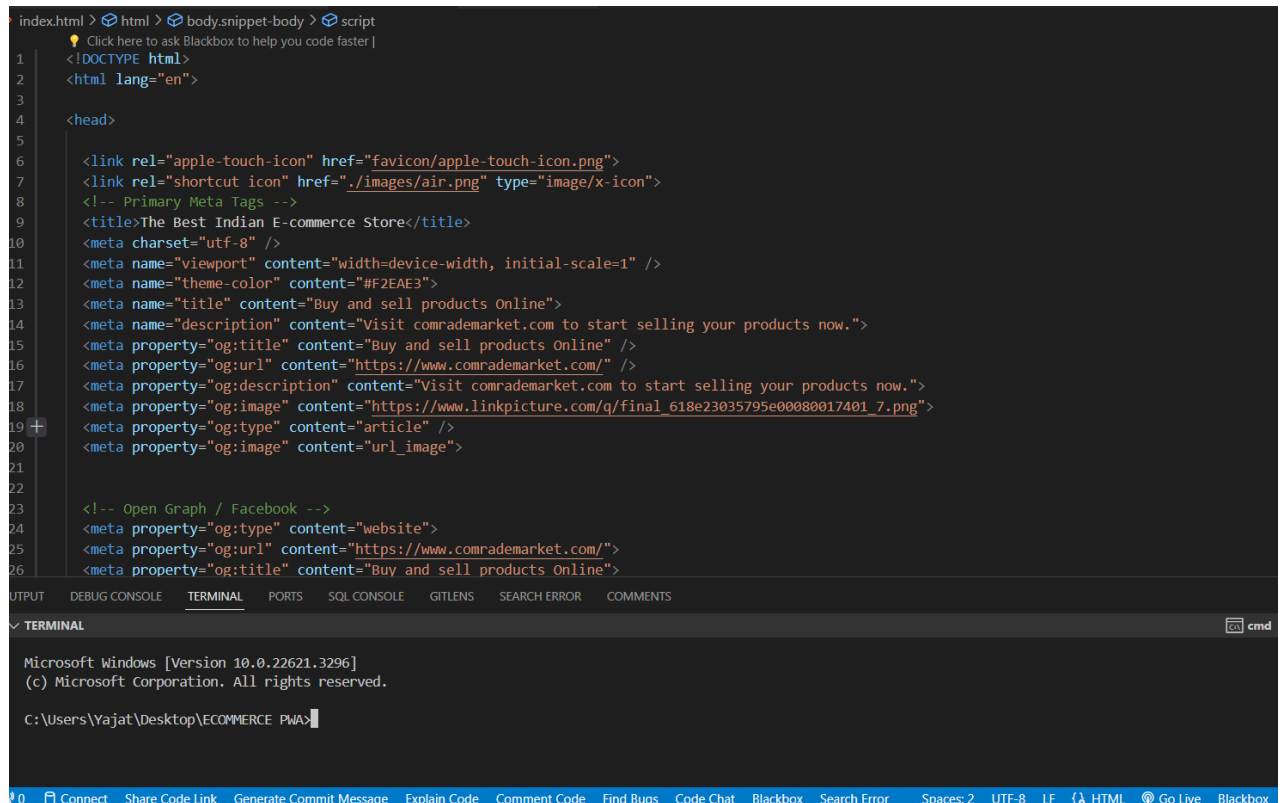
// Handle push notifications
```

```
self.addEventListener("push", function (event) {
  if (event && event.data) {
    const data = event.data.json();
    if (data.method === "pushMessage") {
      console.log("Push notification sent");
      event.waitUntil(
        self.registration.showNotification(" ", {
          body: data.message,
          icon: "path/to/icon.png",
        })
      );
    }
  }
});

self.addEventListener("sync", (event) => {
  if (event && event.tag === "event1") {
    console.log("Sync successful!");
    event.waitUntil(
      self.registration.showNotification(" ", {
        body: "Message sent successfully!",
        icon: "path/to/icon.png",
      })
    );
  }
});
```

## Steps to “add to homescreen feature” :

1. Open folder in VS code and click go live at bottom right corner .

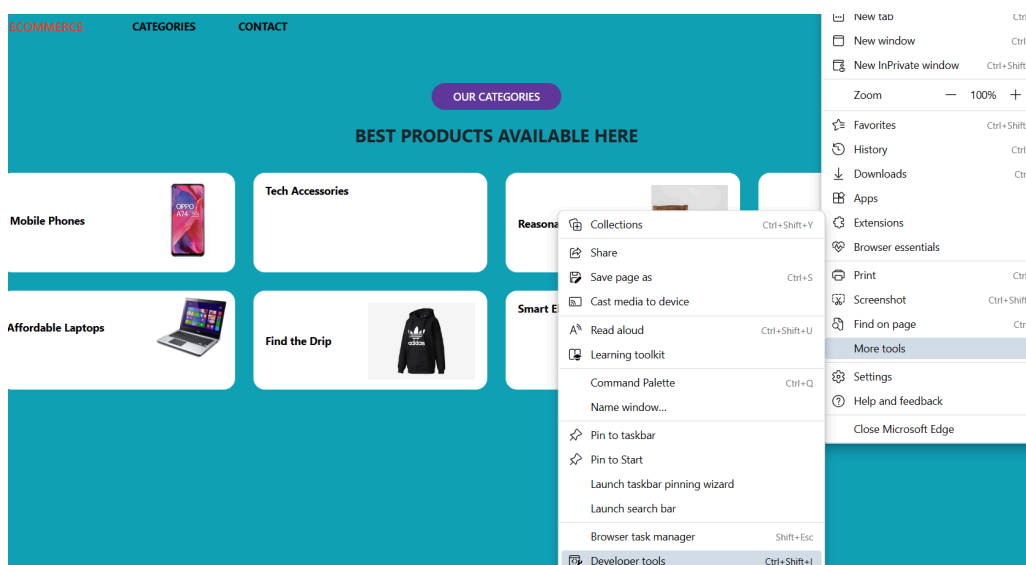


The screenshot shows the VS Code editor with a file named `index.html` open. The code is HTML boilerplate for a Progressive Web App (PWA). It includes a `<DOCTYPE html>` declaration, a `<html lang="en">` tag, and a `<head>` section. The `<head>` section contains several `<link>` tags for icons, a `<title>` tag, and multiple `<meta>` tags for viewport, theme-color, and Open Graph / Facebook metadata. The `<body>` section is currently empty. Below the editor, the `TERMINAL` panel is open, showing the command prompt for a Windows environment. The terminal text includes the Windows version (10.0.22621.3296) and the current directory path `C:\Users\Yajat\Desktop\ECommerce PWA>`. The status bar at the bottom of the editor shows various icons and settings, including the `Go Live` button.

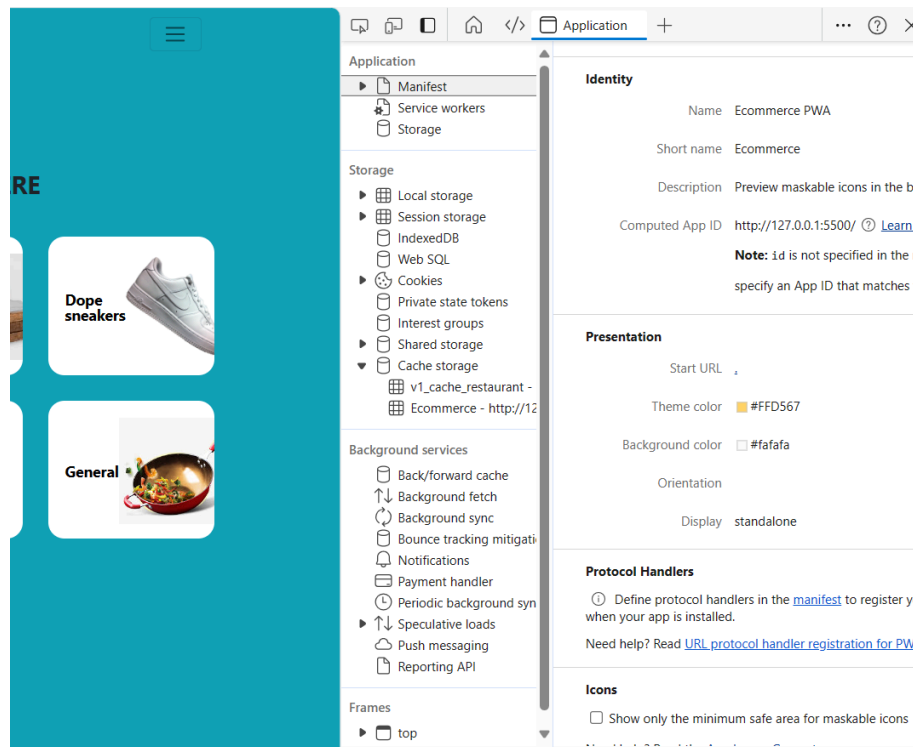
```
index.html > html > body.snippet-body > script
Click here to ask Blackbox to help you code faster |
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5
6 <link rel="apple-touch-icon" href="favicon/apple-touch-icon.png">
7 <link rel="shortcut icon" href="./images/air.png" type="image/x-icon">
8 <!-- Primary Meta Tags -->
9 <title>The Best Indian E-commerce Store</title>
10 <meta charset="utf-8" />
11 <meta name="viewport" content="width=device-width, initial-scale=1" />
12 <meta name="theme-color" content="#F2EAE3">
13 <meta name="title" content="Buy and sell products Online">
14 <meta name="description" content="Visit comrademarket.com to start selling your products now.">
15 <meta property="og:title" content="Buy and sell products Online" />
16 <meta property="og:url" content="https://www.comrademarket.com/" />
17 <meta property="og:description" content="Visit comrademarket.com to start selling your products now.">
18 <meta property="og:image" content="https://www.linkpicture.com/q/final_618e23035795e0080017401_7.png">
19 <meta property="og:type" content="article" />
20 <meta property="og:image" content="url_image">
21
22
23 <!-- Open Graph / Facebook -->
24 <meta property="og:type" content="website">
25 <meta property="og:url" content="https://www.comrademarket.com/">
26 <meta property="og:title" content="Buy and sell products Online">
```

Microsoft Windows [Version 10.0.22621.3296]  
(c) Microsoft Corporation. All rights reserved.  
C:\Users\Yajat\Desktop\ECommerce PWA>

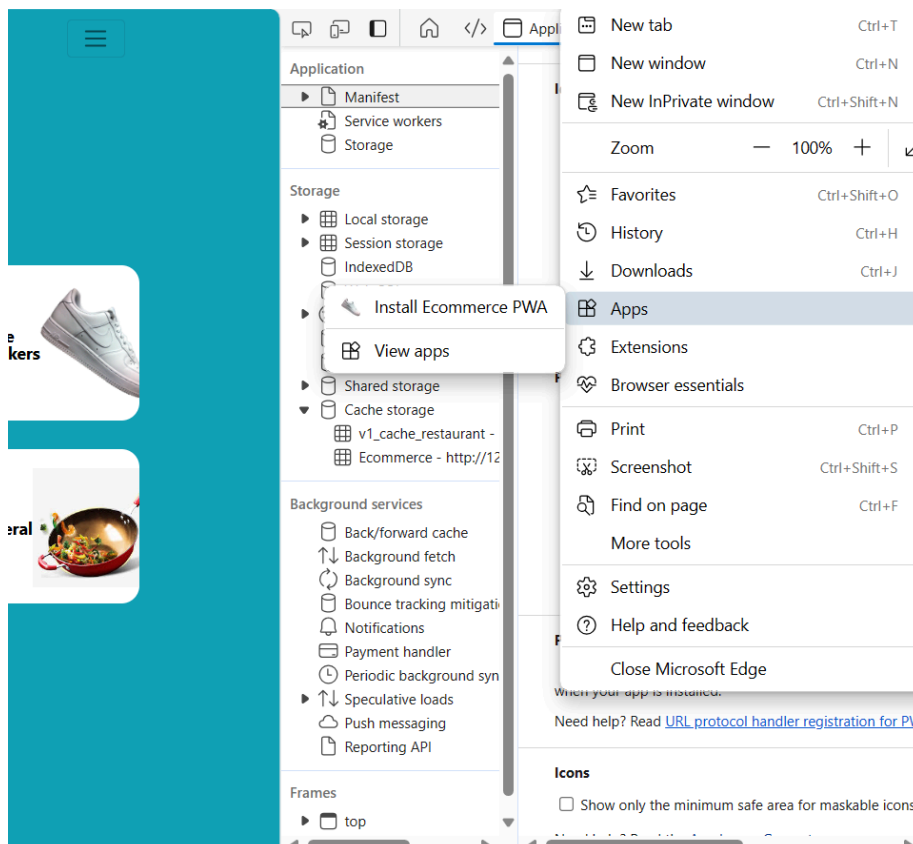
2. Open Developer tools options

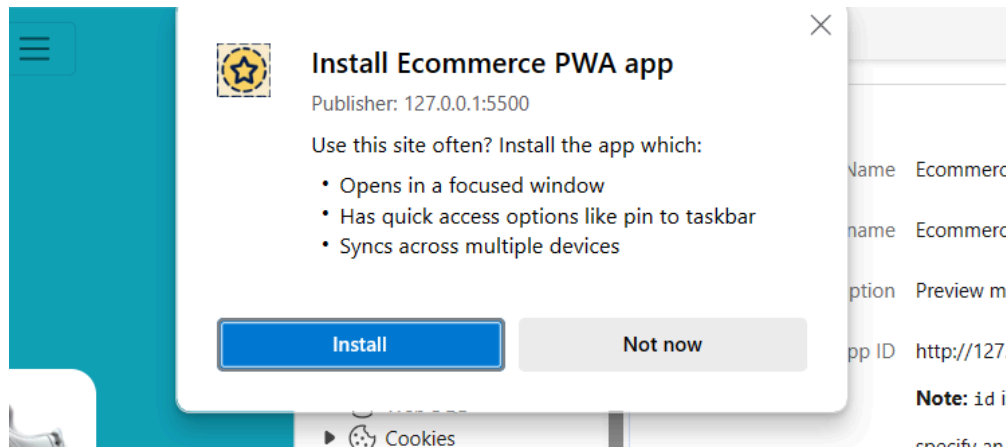


### 3. Go to Applications on the top navbar

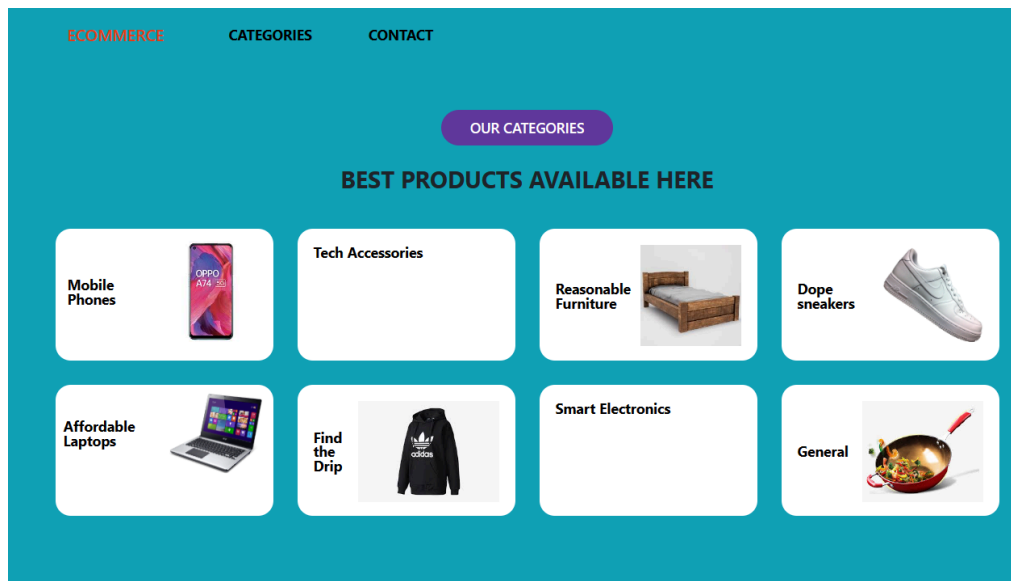


### 4. Click on 3 dots on top right corner of browser from app option install this site as an app





5. App icon will appear at the bottom



Conclusion:Hence, successfully understood the Progressive Web Apps (PWAs) involves grasping their unique characteristics and how they differentiate from traditional websites.