

Aim: To write meta data of your 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:

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.

Features 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.

Code:

//Manifest.json

```
{  
  "name": "Weather App",  
  "short_name": "Weather",  
  "description": "A progressive weather application",  
  "start_url": "/index.html",  
  "scope": "/",  
  "display": "standalone",  
  "orientation": "portrait-primary",  
  "background_color": "#ffffff",  
  "theme_color": "#4285f4",  
  "categories": ["weather", "utilities"],  
}
```

```
"lang": "en-US",
"dir": "ltr",
"icons": [
  {
    "src": "icons/icon-72x72.png",
    "sizes": "72x72",
    "type": "image/png",
    "purpose": "any"
  },
  {
    "src": "icons/icon-96x96.png",
    "sizes": "96x96",
    "type": "image/png",
    "purpose": "any"
  },
  {
    "src": "icons/icon-128x128.png",
    "sizes": "128x128",
    "type": "image/png",
    "purpose": "any"
  },
  {
    "src": "icons/icon-144x144.png",
    "sizes": "144x144",
    "type": "image/png",
    "purpose": "any"
  },
  {
    "src": "icons/icon-152x152.png",
    "sizes": "152x152",
    "type": "image/png",
    "purpose": "any"
  },
  {
    "src": "icons/icon-192x192.png",
    "sizes": "192x192",
    "type": "image/png",
    "purpose": "any maskable"
  },
  {
```

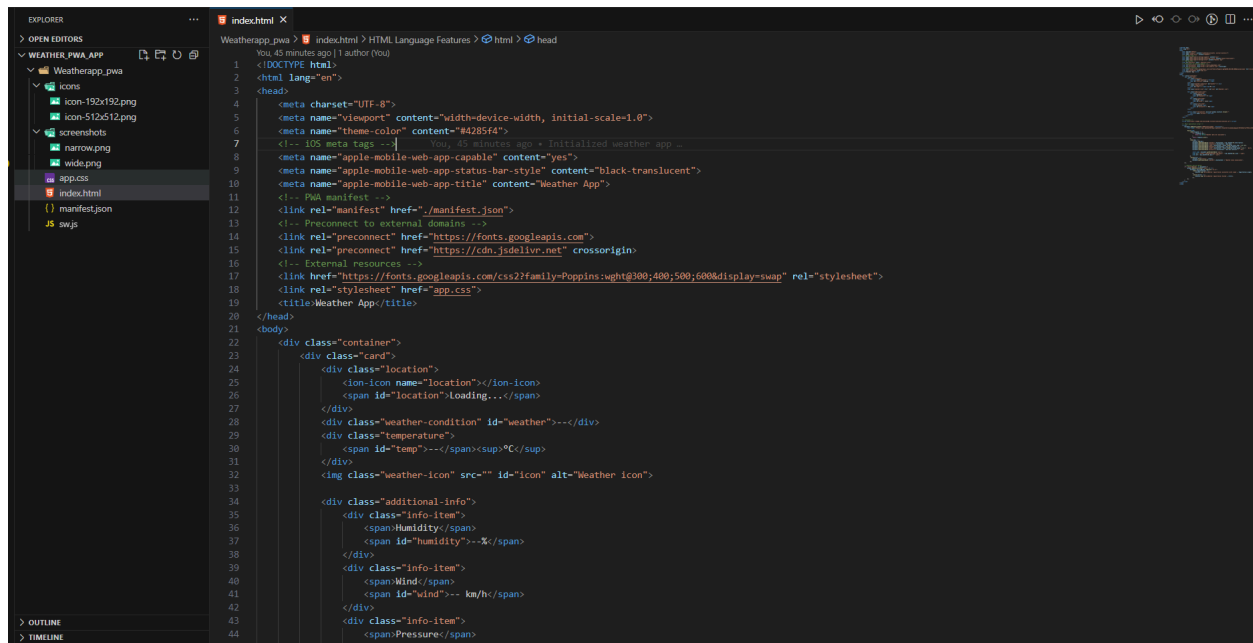
```
    "src": "icons/icon-384x384.png",
    "sizes": "384x384",
    "type": "image/png",
    "purpose": "any"
  },
  {
    "src": "icons/icon-512x512.png",
    "sizes": "512x512",
    "type": "image/png",
    "purpose": "any maskable"
  }
],
"screenshots": [
  {
    "src": "screenshots/wide.png",
    "sizes": "1280x720",
    "type": "image/png",
    "form_factor": "wide",
    "label": "Desktop view"
  },
  {
    "src": "screenshots/narrow.png",
    "sizes": "412x915",
    "type": "image/png",
    "form_factor": "narrow",
    "label": "Mobile view"
  }
],
"shortcuts": [
  {
    "name": "Current Weather",
    "short_name": "Now",
    "description": "View current weather conditions",
    "url": "/?view=current",
    "icons": [
      {
        "src": "icons/icon-96x96.png",
        "sizes": "96x96"
      }
    ]
  }
]
```

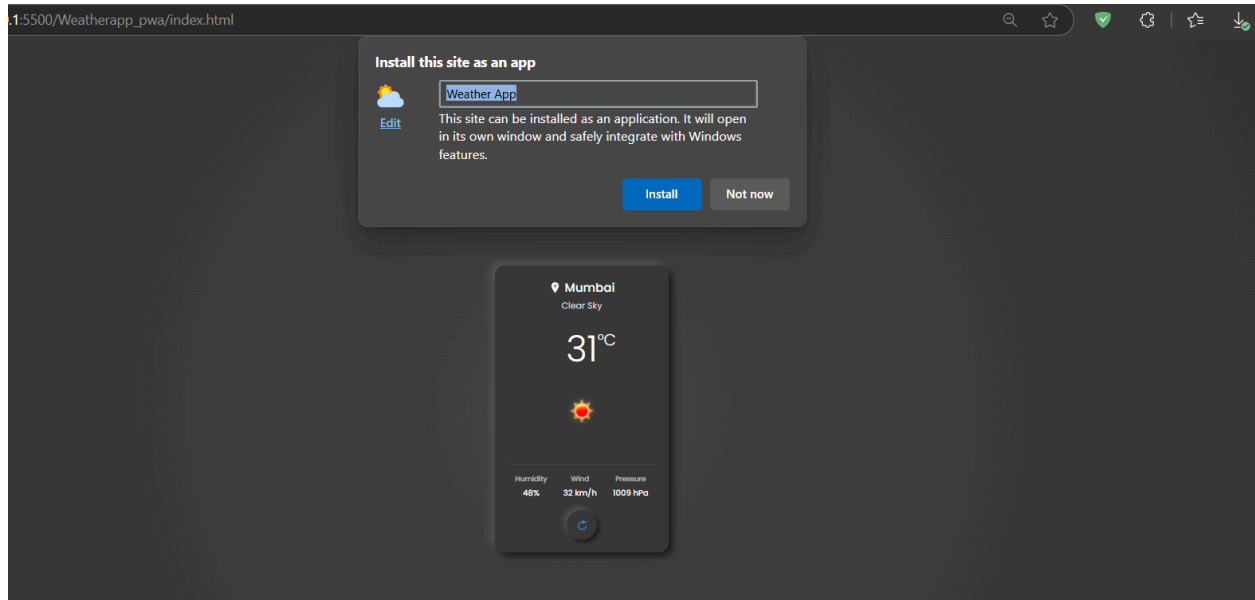
```

    },
    {
      "name": "Forecast",
      "short_name": "Forecast",
      "description": "View weather forecast",
      "url": "/?view=forecast",
      "icons": [
        {
          "src": "icons/icon-96x96.png",
          "sizes": "96x96"
        }
      ]
    }
  ]
}
]
}

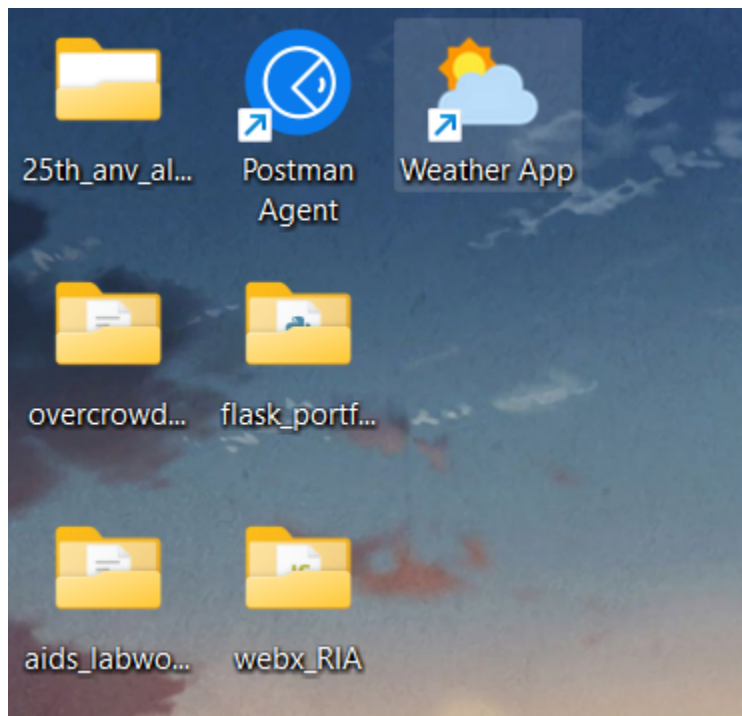
```

Output:





Shortcut added to Home Screen:



Conclusion :

In this experiment we learned about how PWA works and to install it as a desktop app for our own website. Unlike traditional web apps, they provide native-like experiences while maintaining cross-platform accessibility. This makes them ideal for businesses seeking wider reach with app-like engagement.