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PRACTICAL NO.7

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

Theory:
Progressive Web Apps (PWAs) are a type of web application that combines the best features of web and mobile apps to offer users a seamless and engaging experience. Progressive Web Apps (PWAs) represent a new paradigm in web development, seamlessly blending the strengths of web technologies with the immersive user experience of native mobile apps. By leveraging responsive design principles, service workers for offline functionality, and the Web App Manifest for installation and customization, PWAs deliver fast, reliable, and engaging experiences across devices and network conditions. With features like push notifications, home screen installation, and seamless navigation, PWAs bridge the gap between web and native apps, offering users a frictionless journey and empowering developers to build versatile, accessible, and modern web applications.
Overview of PWAs:

1. **Responsive Design:** PWAs are designed to be responsive, meaning they can adapt and provide a great user experience across various devices, including desktops, tablets, and smartphones.

2. **Progressive Enhancement:** PWAs are built using progressive enhancement principles. This means they should work for all users, regardless of the browser or device they use. Advanced features are progressively enhanced for users with modern browsers and devices.

3. **App-Like Experience:** PWAs aim to provide an app-like experience, including smooth navigation, offline functionality, push notifications, and the ability to be added to the home screen.

4. **Service Workers:** One of the key technologies behind PWAs is serv3ice workers. These are scripts that run in the background and enable features like offline caching, background synchronization, and push notifications.

5. **Web App Manifest:** The Web App Manifest is a JSON file that contains metadata about the PWA, such as its name, icons, start URL, display mode, theme colors, and more. This manifest file is used by browsers to install the PWA and customize its appearance on the user's device.

6. **Offline Functionality:** PWAs can work offline or in low-connectivity environments by caching assets and data using service workers. This ensures that users can still access content

and perform actions even when they are not connected to the internet.

7. **Engagement Features:** PWAs can engage users through features like push notifications, which allow developers to send notifications to users even when the PWA is not actively open in their browser.

8. **Fast and Reliable:** PWAs are designed to be fast and reliable, providing quick load times and smooth interactions to enhance the user experience.

9. **Secure:** PWAs are served over HTTPS to ensure data security and protect user privacy, especially when dealing with sensitive information or transactions.

10. **Cross-Platform Compatibility:** PWAs are platform-agnostic and can run on various operating systems and browsers, reducing development effort and reaching a broader audience.

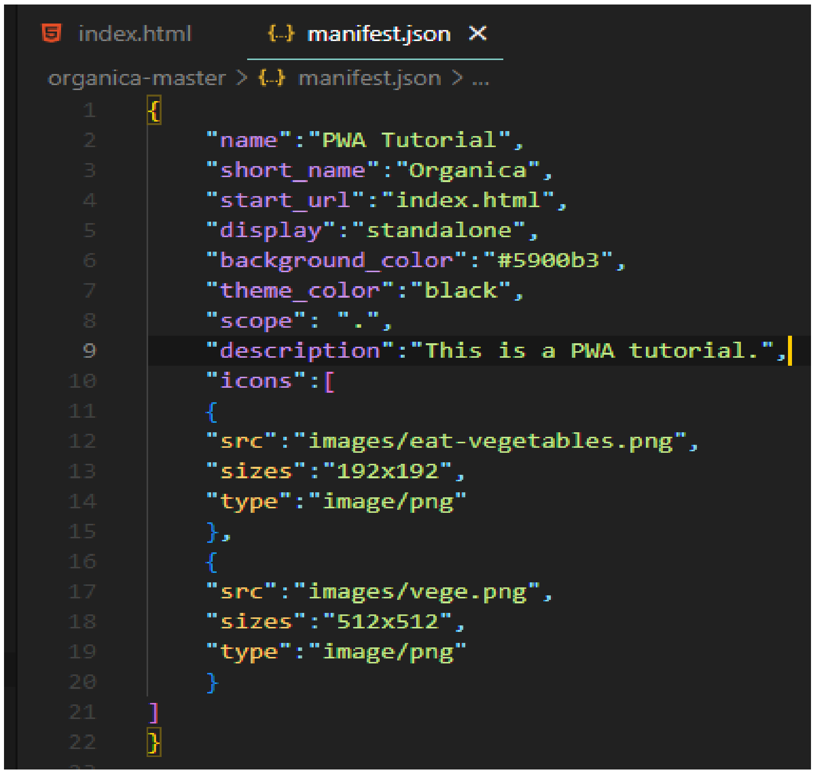
Overall, PWAs combine the reach and accessibility of the web with the capabilities and engagement of native apps, making them a compelling choice for modern web development.

Implementation:

1. Create an HTML file for your ecommerce website that will contain a link to the manifest.json file.

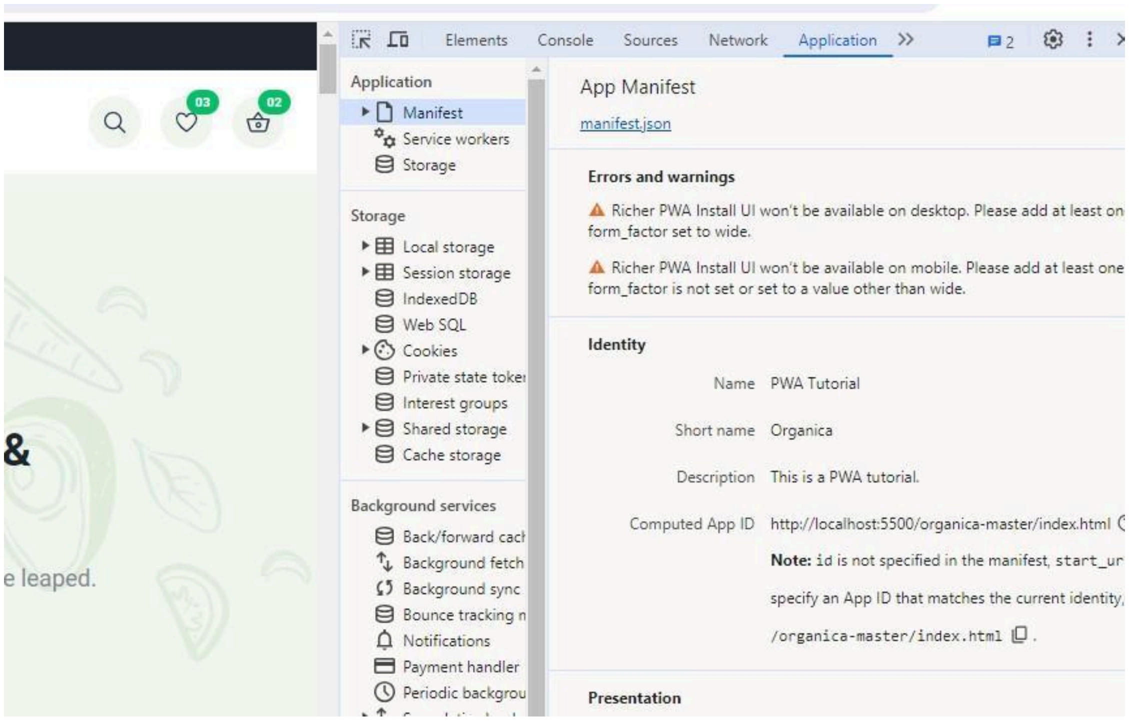
```html
<!DOCTYPE html>
<html lang="en">

<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">
  <title>Organica - Quality organic fruit & vegetables.</title>
  <link rel="shortcut icon" href="./favicon.svg" type="image/svg+xml">
  <link rel="stylesheet" href="./assets/css/main.css">
  <link rel="stylesheet" href="./assets/css/home.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=Playfair+Display:ital,wght@0,400;0,700;1,400;1,700&family=Roboto:wght@400;500;700&display=swap"
    rel="stylesheet">
  <link rel="manifest" href="manifest.json">
</head>

<body id="top">
  <header class="header" data-header>
```

2. Create a manifest.json file in the same directory. This file basically contains information about the web application. Some basic information includes the application name, starting URL, theme color, and icons. All the information required is specified in the JSON format. The source and size of the icons are also defined in this file.



```json
{
    "name":"PWA Tutorial",
    "short_name":"Organica",
    "start_url":"index.html",
    "display":"standalone",
    "background_color":"#5900b3",
    "theme_color":"black",
    "scope": ".",
    "description":"This is a PWA tutorial.",
    "icons":[
    {
    "src":"images/eat-vegetables.png",
    "sizes":"192x192",
    "type":"image/png"
    },
    {
    "src":"images/vege.png",
    "sizes":"512x512",
    "type":"image/png"
    }
]
}
```

3. Open the index.html file in Chrome navigate to the Application Section in the Chrome Developer Tools. Open the manifest column from the list.



App Manifest

manifest.json

Errors and warnings

Richer PWA Install UI won't be available on desktop. Please add at least on form_factor set to wide.

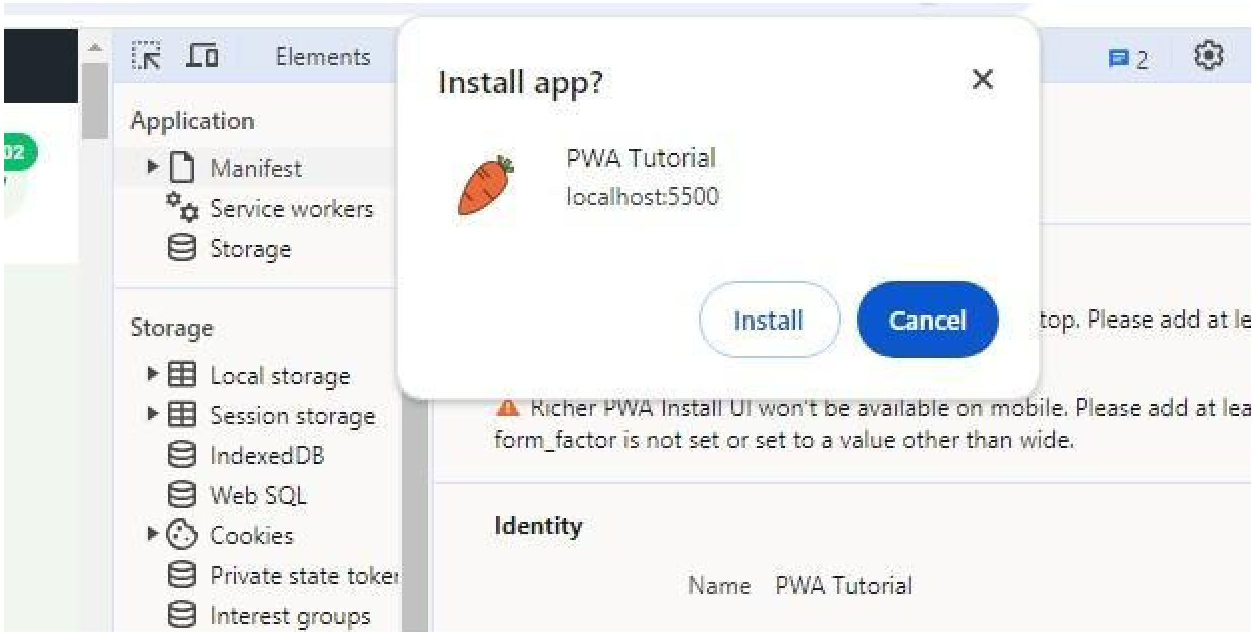
Richer PWA Install UI won't be available on mobile. Please add at least one form_factor is not set or set to a value other than wide.

Identity

Name	PWA Tutorial
Short name	Organica
Description	This is a PWA tutorial.
Computed App ID	http://localhost:5500/organica-master/index.html
	Note: id is not specified in the manifest, start_ur
	specify an App ID that matches the current identity,
	/organica-master/index.html .

Presentation

4. Installing the web application using the Install app button



Install app?

PWA Tutorial

localhost:5500

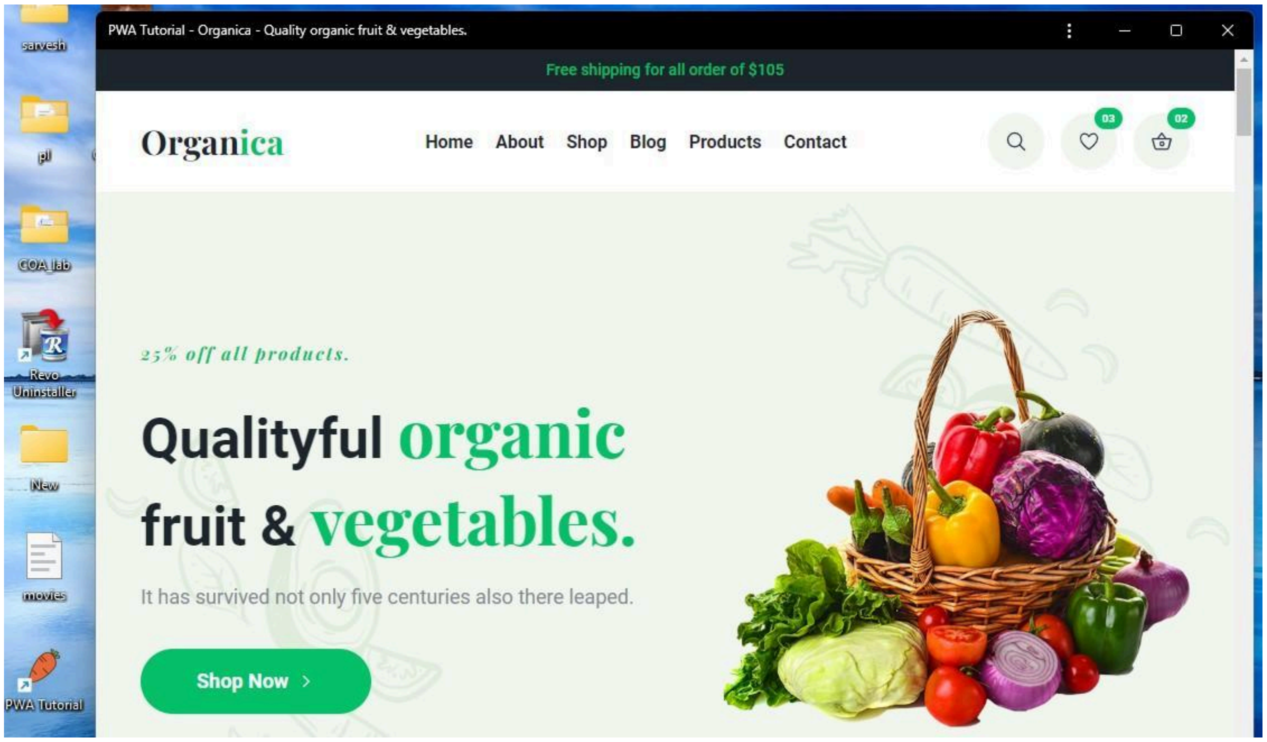
top. Please add at le

Richer PWA Install UI won't be available on mobile. Please add at lea form_factor is not set or set to a value other than wide.

Identity

Name PWA Tutorial

Final Application:


PWA Tutorial - Organica - Quality organic fruit & vegetables.
Free shipping for all order of $105
Organica
Home
About
Shop
Blog
Products
Contact
25% off all products.
Qualityful organic fruit & vegetables.
It has survived not only five centuries also there leaped.
Shop Now
sarvesh
pl
COA lab
Revo Uninstaller
New
movies
PWA Tutorial

Conclusion:
Hence we have understood and studied the working of Progressive web applications and the features of Progressive web applications. Also, we have implemented the add to homescreen feature in Progressive web applications on our e-commerce website. By crafting a well-structured manifest.json file with accurate metadata properties such as name, description, icons, and colors, developers can enhance the accessibility and user experience of their PWAs.