

Karla Tengström

27.9.2024

**Labwork-2: Ionic with Git: Creating Simple Tabs Mobile App with  
Menu Navigation**

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## 1 Learning reflection

[My GitHub repository link](#) (including all lab works)

[Link to Hands-on Practice-1 \(Navigation App\)](#)

[Link to Hands-on Practice-2 \(Git\)](#)

During this labwork module, I worked on creating a simple mobile app with navigation using the Ionic framework and explored Git for version control. The hands-on practice started with setting up dependencies and creating a basic navigation app, followed by integrating GitHub to manage the app's repository. Overall, the experience was a mix of smooth steps and some technical challenges.

One of the initial difficulties I faced was related to my computer's performance. It struggled to handle the load of running Visual Studio Code and the command line interface while building and serving the app. This significantly slowed down the process, requiring patience as I worked through the steps of configuring Ionic dependencies and installing plug-ins. Despite this, I found that carefully following the step-by-step instructions from the course materials helped keep me on track.

The entire Ionic framework was new to me, and I was surprised at how easy it was to set up a mobile app using its built-in commands and components. For example, creating a new project with ionic start and developing a simple UI with navigation was relatively straightforward. I followed the instructions to create a Tabs project, edit the UI labels for Home, About, and Contact pages, and build a navigation menu. While this seemed simple, I anticipate that creating more complex apps will require a deeper understanding of Ionic.

I did, however, encounter some challenges while working with Capacitor commands (as Instructor messaged us). When attempting to run the app for Android, I ran into issues with emulators, causing errors that interrupted the process (I was not able to continue using ionic serve). Deleting the project and starting over solved this, but it took a significant amount of time. Additionally, integrating Git with Ionic was another learning curve. While checking Git versions and creating a GitHub repository was easy, using commands like git add and git push became troublesome. My computer significantly slowed down after issuing these commands, especially due to syncing with OneDrive, which caused long delays and warnings. Configuring the lab folder to only store files locally helped resolve the issue.

The final challenge was pushing the local repository to GitHub. Although I initially struggled with errors in the git push command, following additional instructions from GitHub resolved the issue, and I was able to successfully push the repository online. I learned how critical version control is, and I gained valuable experience in troubleshooting issues related to syncing between local files and online repositories.

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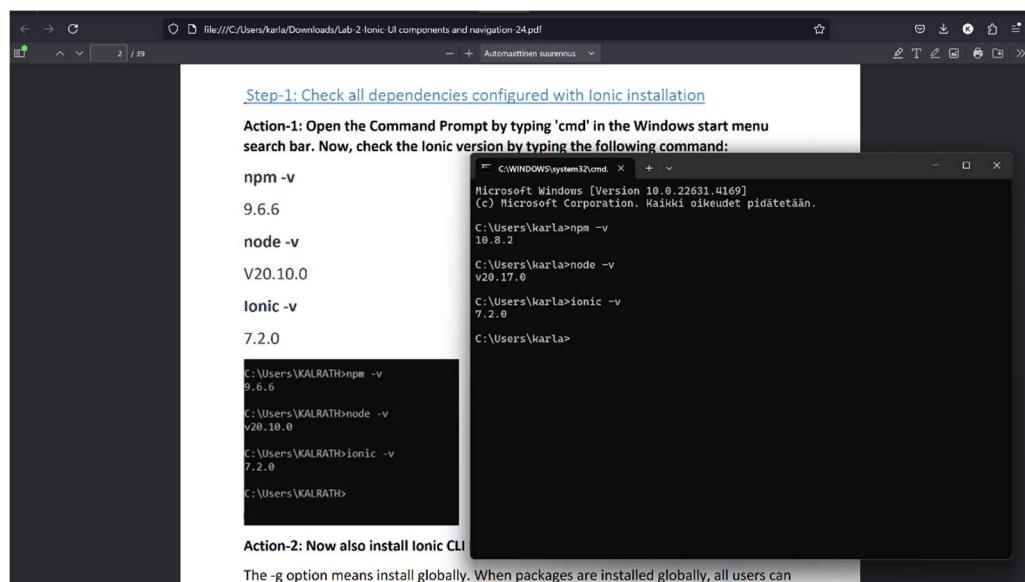
I did not consult any tutor students or friends during this labwork as the provided materials were detailed enough to solve most issues. Additionally, I have not yet joined or explored the Stack Overflow community, though I see the potential benefits of doing so, especially when facing more complex problems in the future.

In conclusion, this labwork introduced me to the basics of mobile app development with Ionic and the essential role of Git in version control. While there were technical challenges, I learned valuable lessons in both areas and feel more confident in my ability to handle similar tasks in the future.

## 2 Hands-on Practice-1 (Navigation App)

### 2.1 Step 1: Check all dependencies configured with Ionic installation

I followed the Ionic with Git: Creating Simple Tabs Mobile App with Menu Navigation HANDS-ON LABWORK-2 step by step guide. Checking all dependencies was easy. I was confused, as checking ionic info, my Utility section was different than the guide screenshot, as the cordova and native were not installed globally - it seemed. I do not know was there something wrong or what is the issue, since I did follow the previous hands on labwork-1 guide to the word. Also, action-2: install Ionic CLI dependencies seemed to be vague, at least to me. I did some research about the topic, but did not seem to find anything, at least related to my “problem” with Cordova and Native not being installed globally.



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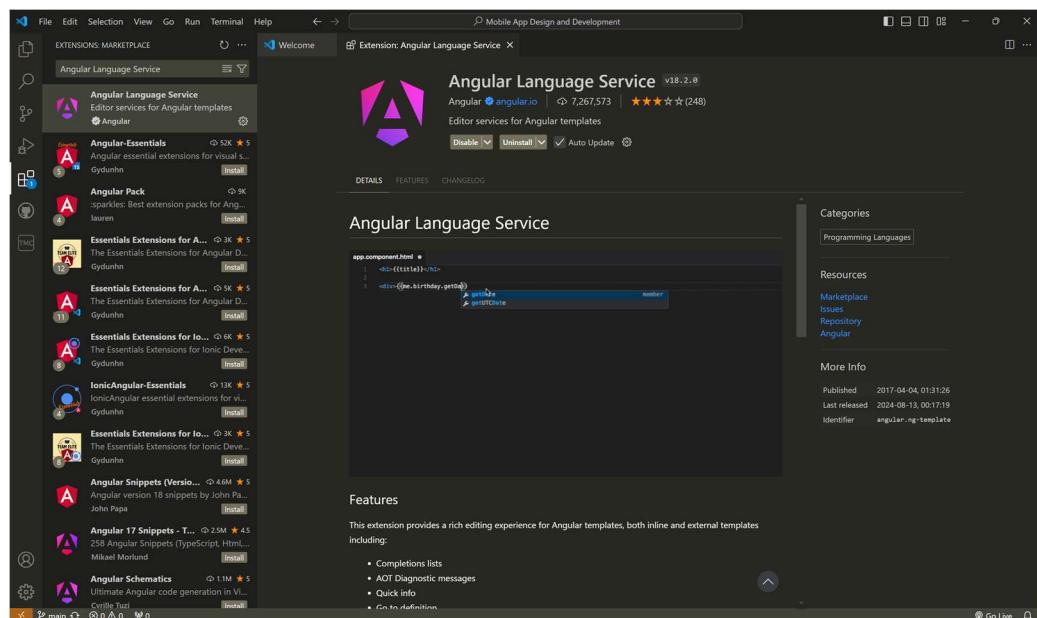
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The screenshot shows a Windows desktop environment. In the foreground, there is a PDF viewer window titled "file:///C:/Users/karla/Downloads/Lab-2-Ionic-UI components and navigation-24.pdf". The content of the PDF is a command-line interface (CLI) session. The user has run the command "npm install @ionic/react@latest -g" and then "npm install @ionic/react-router -g". A note in the PDF says: "Action-3: Ionic React, To add Ionic Framework to an already existing React project". Below this, it says: "Note: No worry about any WARMING on cmd. It will not cause any significant trouble. Take it easy; go ahead." The command prompt window shows the results of the installations. It lists various packages installed, including Ionic CLI 7.2.0, NodeJS v20.17.0, npm 10.8.2, and OS Windows 10. It also shows Ionic info and Utility sections.

## 2.2 Step 2: Visual Code and Installing Plug-ins

### 2.2.1 Angular Language Service (Optional)

Installing Angular Language Service in VS Code was easy.

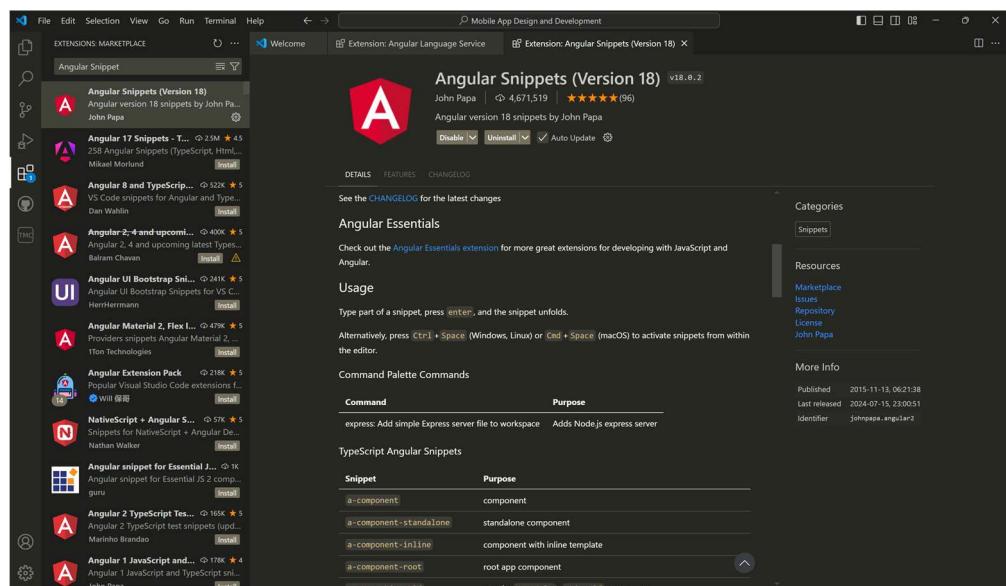
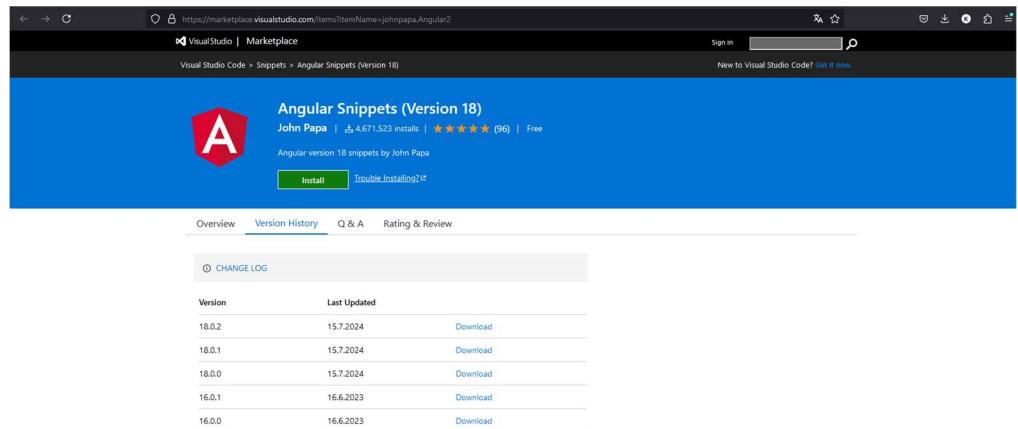


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## 2.2.2 Angular Snippet (Version 12) (Optional)

The oldest version of the program was 16.0.0 that could be installed. I therefore installed the latest version (18.0.2). I am hoping it will not cause any problems, as this installation was optional.



## 2.2.3 ESLint

Installing ESLint was easy.

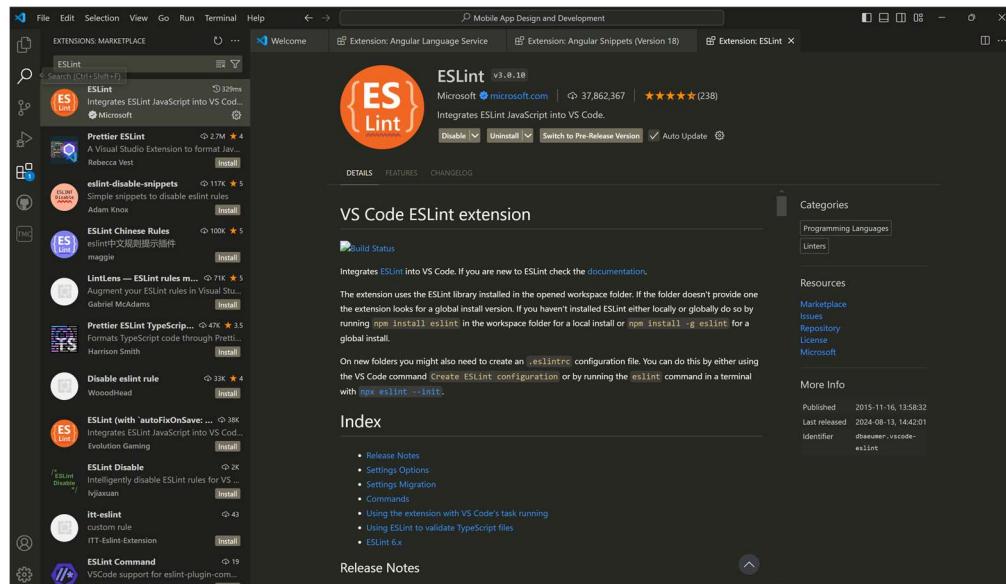
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## Labwork report

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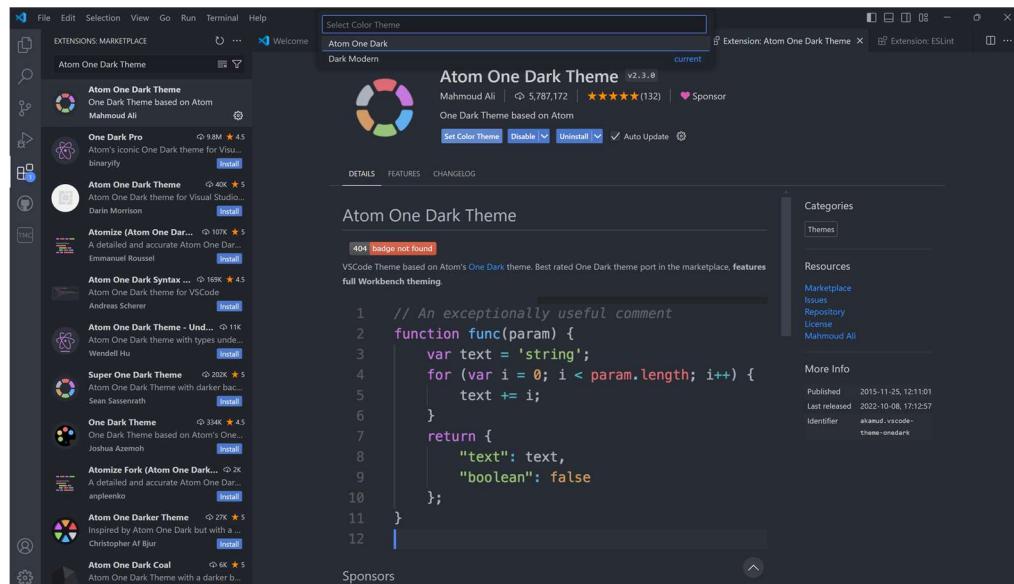
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## 2.2.4 Atom One Dark Theme

After installing the extension, VS Code immediately asked did I want to change the Color theme. I changed it to the Atom one, and you can see the results by comparing the screenshots from previous steps (Color Theme was Dark Modern).

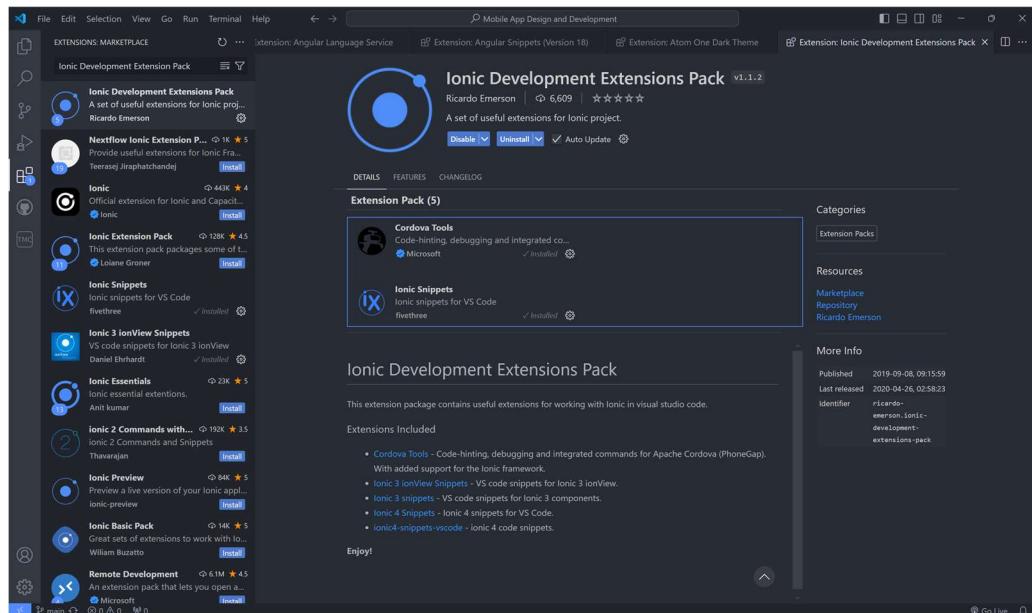


## 2.2.5 Ionic Development Extension Pack

Installing Ionic Development Extension Pack was easy

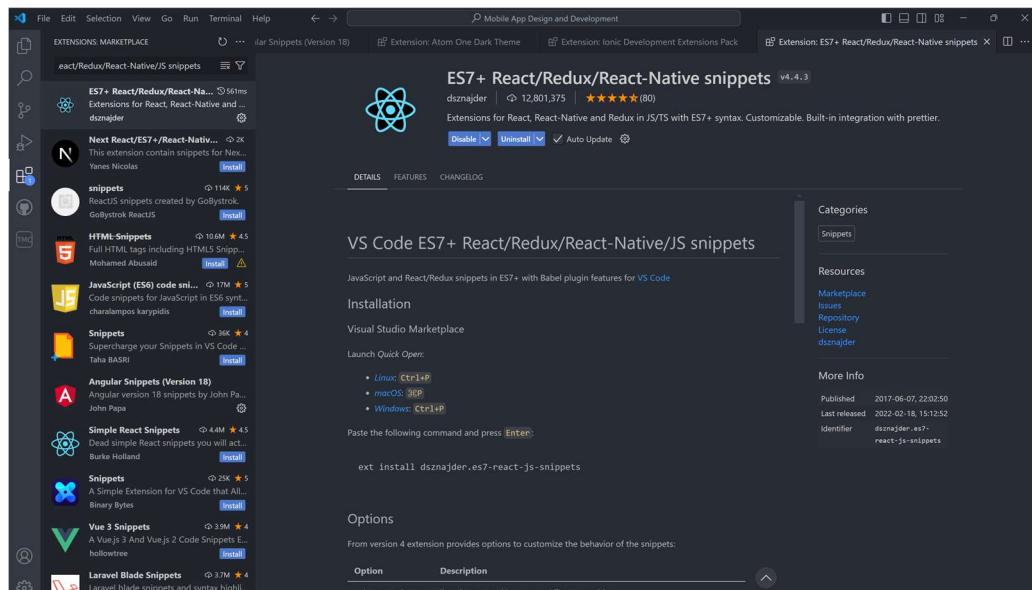
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## 2.2.6 ES7+ React/Redux/React-Native/JS snippets

Installing ES7+ React/Redux/React-Native/JS snippets was easy.



## 2.2.7 Other suggestions in the instructor's video tutorial

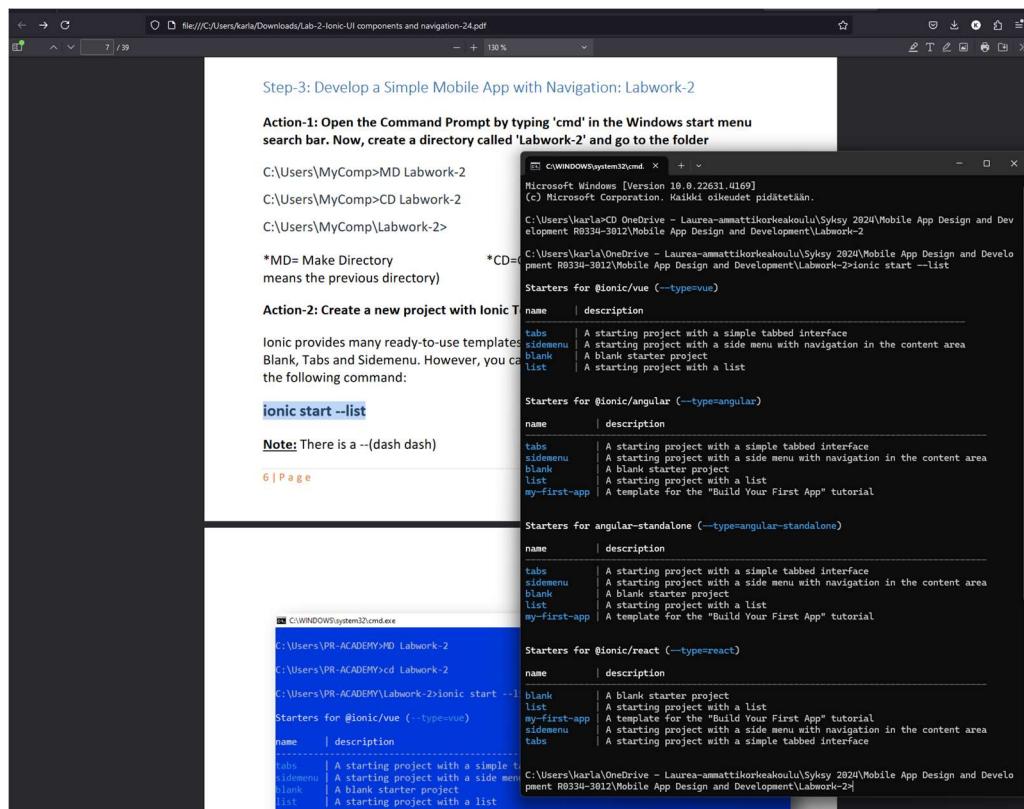
I did not see any video tutorial from instructor, so I did not install any other extensions.

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### 2.3 Step 3: Develop a Simple Mobile App with Navigation: Labwork-2

The guide instructed to create a directory called “Labwork-2”. I had already created directories for all Labworks in the course folder, so I did not create them again. I removed the readme file from the directory, as I had already created it also. I used CD (Change Directory) command, to navigate to the correct directory. I also used the ionic start -list command to see the templates.



### 2.4 Step 4: Now, create a new Tabs project

I used `ionic start` command to start the new app (picture 1). As I mentioned, I had already created the directories for all course Labworks, and I had published it to Git - it caused an message when starting the app: `[INFO] Existing git project found (C:/Users/karla/OneDrive - Laurea-ammattikorkeakoulu/Syksy 2024/Mobile App Design and Development R0334-3012/Mobile App Design and Development).` `Git operations are disabled.`

I do not know is this a error that will be a problem in the future. We'll see!

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Step-4: Now, create a new Tabs project by issuing the following command:

```
ionic start [name] [template] [options]
name: project name
template: tabs, sidemenu, blank, conference
options: --type react, --type angular. --type ionic

ionic start
  • Use the app creation wizard? No (K)
  • Pick a framework! Select React framework
  • Once you select the framework, the
  • Project name: myApplab-2 (You can
  • Once you write the project name, it
    template!
  • Use the down arrow to select tabs a
  • Ionic takes a few minutes to create
    libraries.
  • You may notice a few warnings; they
    create any hassle.
  • Select "N" to create an Ionic Account
```

C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2>ionic start
? Use the app creation wizard? No
Pick a framework!
Please select the Javascript framework to use for your new app. To bypass this prompt next time, supply a value for the --type option.
? Framework: React
Every great app needs a name!
Please enter the full name of your app. You can change this at any time. To bypass this prompt next time, supply name, the first argument to ionic start.
? Project name: myApplab-2
Let's pick the perfect starter template!
Starter templates are ready-to-go Ionic apps that come packed with everything you need to build your app. To bypass this prompt next time, supply template, the second argument to ionic start.
? Starter template: tabs
[INFO] Existing git project found (C:/Users/karla/OneDrive - Laurea-ammattikorkeakoulu/Syksy 2024/Mobile App Design and Development R0334-3012/Mobile App Design and Development). Git operations are disabled.
/ Preparing directory
/ Downloading and extracting tabs started in 3.08s
> ionic integrations enable capacitor --quiet -- myApplab-2 io.ionic.starter
npm warn deprecated inflight@0.4.0: This module is not supported, and leaks memory. Do not use it. Check out lru-cache if you want a good and tested way to coalesce async requests by a key value, which is much more comprehensive and powerful.
npm warn deprecated @humanwhocodes/config-array@0.13.0: Use @eslintrc/config-array instead
npm warn deprecated @humanwhocodes/semver@0.4.0: Semver is no longer supported
npm warn deprecated glob@2.3: Glob version prior to v9 are no longer maintained
npm warn deprecated abab@2.0.6: Use your platform's native atob() and btoa() methods instead
d
npm warn deprecated @humanwhocodes/object-schema@2.0.3: Use @eslint/object-schema instead
npm warn deprecated domexception@0.0.8: Use your platform's native DOMException instead
added 887 packages, and audited 688 packages in 6m
153 packages are looking for funding
 run `npm fund` for details
found 0 vulnerabilities
> npm.cmd i -D @capacitor/cli@latest
added 63 packages, and audited 751 packages in 11s

Ionic App ready (picture 2).

Step-4: Now, create a new Tabs project by issuing the following command:

```
ionic start [name] [template] [options]
name: project name
template: tabs, sidemenu, blank, conference
options: --type react, --type angular. --type ionic

ionic start
  • Use the app creation wizard? No (K)
  • Pick a framework! Select React framework
  • Once you select the framework, the
  • Project name: myApplab-2 (You can
  • Once you write the project name, it
    template!
  • Use the down arrow to select tabs a
  • Ionic takes a few minutes to create
    libraries.
  • You may notice a few warnings; they
    create any hassle.
  • Select "N" to create an Ionic Account
```

Found 0 vulnerabilities
> capacitor.cmd init myApplab-2 io.ionic.starter --web-dir dist
/ Creating capacitor.config.ts in C:/Users/karla/OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2>ionic start
[Success] capacitor.config.ts created!

Next steps:
http://capacitorjs.com/docs/getting-started#where-to-go-next
 • Integration capacitor added!

Installing dependencies may take several minutes.

Ionic AppFlow, the mobile DevOps solution by Ionic
 Continuously build, deploy, and ship apps
 Focus on building apps while we automate the rest
 Learn more: https://ion.link/appflow

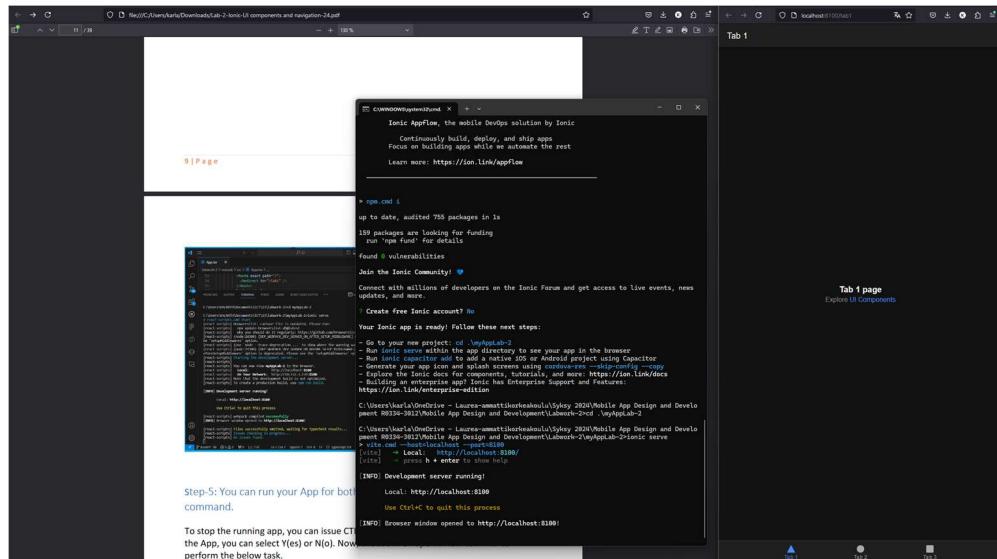
```
> npm.cmd i
up to date, audited 755 packages in 1s
159 packages are looking for funding
  run `npm fund` for details
found 0 vulnerabilities
Join the Ionic Community! ❤️
Connect with millions of developers on the Ionic Forum and get access to live events, news updates, and more.
? Create free Ionic account? No
Your Ionic app is ready! Follow these next steps:
- Go to your new project: cd \myApplab-2
- Run ionic serve within the app directory to see your app in the browser
- Run ionic capacitor add to add a native iOS or Android project using Capacitor
- Generate your app icon and splash screens using cordova-res --skip-config --copy
- Explore the Ionic docs for components, tutorials, and more: https://ion.link/docs
Building an enterprise app? Ionic has Enterprise Support and Features:
https://ion.link/enterprise-edition
```

C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2>

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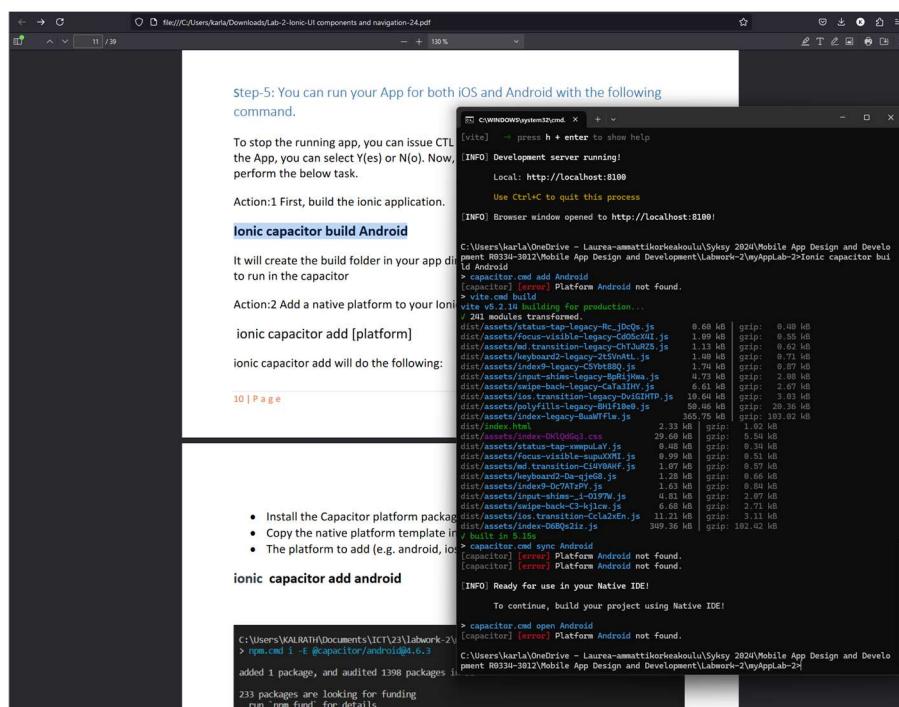
I used commands `cd .\myAppLab-2` to go to the app directory and `ionic serve` to run the app locally (picture 3).



```
ionic serve -l --port=8100
[INFO] Development server running!
Local: http://localhost:8100
Use Ctrl+C to quit this process
[INFO] Browser window opened to http://localhost:8100
```

## 2.5 Step 5: You can run your App for both iOS and Android with the following command

I followed the step-by-step guide, as this was totally new to me. In the first picture, I build the ionic application using command `Ionic capacitor build Android`.

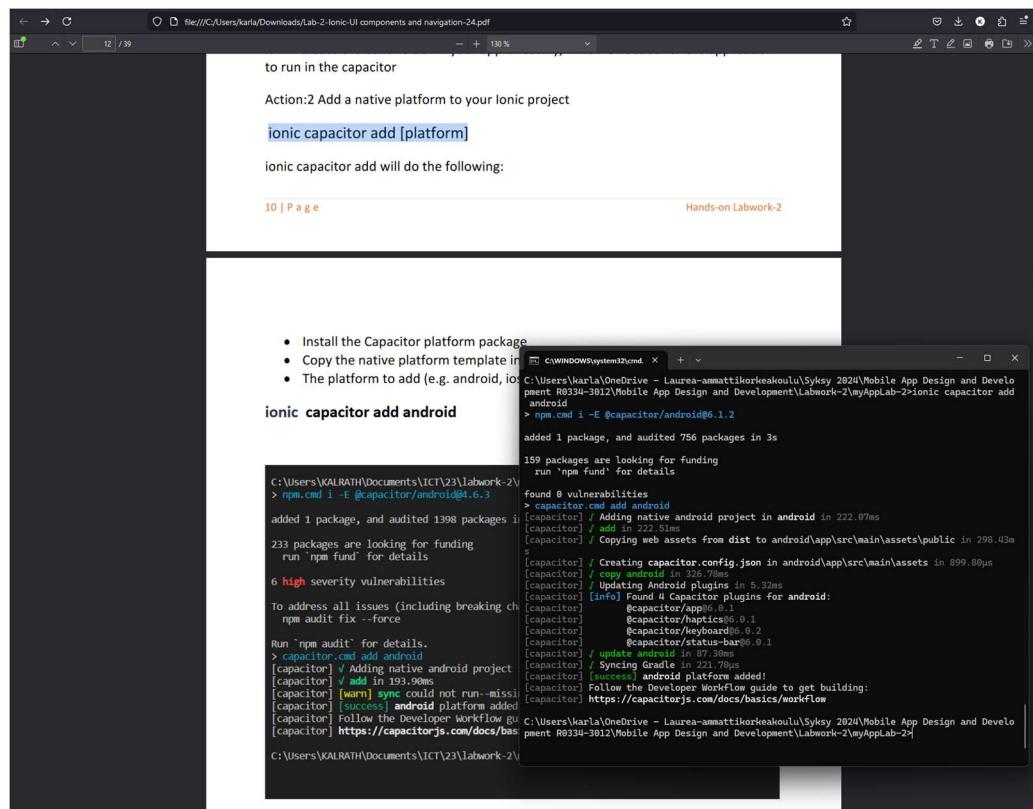


```
ionic capacitor build android
[INFO] Development server running!
Local: http://localhost:8100
Use Ctrl+C to quit this process
[INFO] Browser window opened to http://localhost:8100
[INFO] Ready for use in your Native IDE!
```

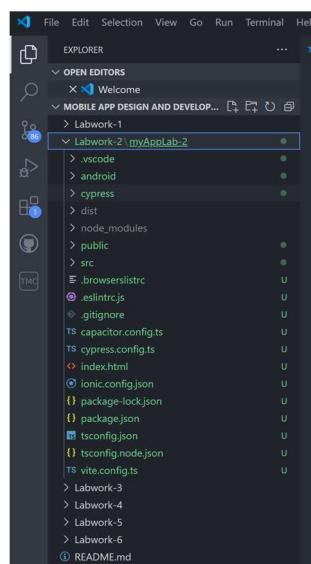
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I added the native platform to my ionic project using command `ionic capacitor add [platform]`.



The actions created an android folder to the project's root as informed in the guide.



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The *ionic capacitor run android* command caused an error, as instructor has already warned us about.

**[ERROR] No devices or emulators found**

Instead I used *ionic serve* command again to continue, but it did not work anymore. It caused the following error:

```
> vite.cmd --host=localhost --port=8100
```

**[vite] Re-optimizing dependencies because lockfile has changed**

**[vite] error when starting dev server:**

**[vite] Error: EPERM: operation not permitted, rmdir 'C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2\myAppLab-2\node\_modules\.vite\deps'**

**[ERROR] vite has unexpectedly closed (exit code 1).**

*The Ionic CLI will exit. Please check any output above for error details.*

I decided to delete the whole directory (myAppLab-2) and start again fresh and create the app again, and not use the capacitor commands as Kalpana had instructed.

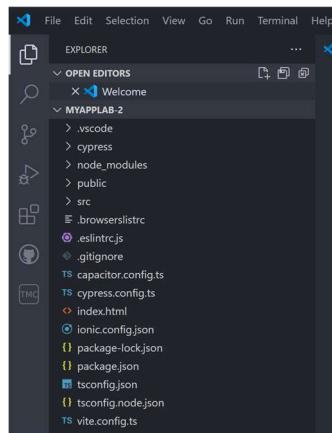
The screenshot shows a web browser window with a sidebar menu on the left. The sidebar includes options like Account, Dashboard, Courses, Groups, Calendar, Inbox, History, and Help. Under Courses, there are links for Home, Modules, Assignments, Announcements (which is selected), Discussions, Syllabus, People, and Grades. The main content area shows an announcement titled "Emulator problem -device cannot find" by "Kalpana Rathod". The message discusses a Gradle JDK configuration issue and suggests using the web version instead of the emulator. Below the message is a terminal window titled "C:\WINDOWS\system32\cmd.exe" showing the command-line process of running the project. The terminal output includes the creation of capacitor config.json, copying assets, updating Android plugins, finding capacitor plugins for android, and finally reporting that no devices or emulators were found.

## 2.6 Step 6: Now, we will open the project in VS Code

Using the code . command, it opened the app folder in VS Code like this:

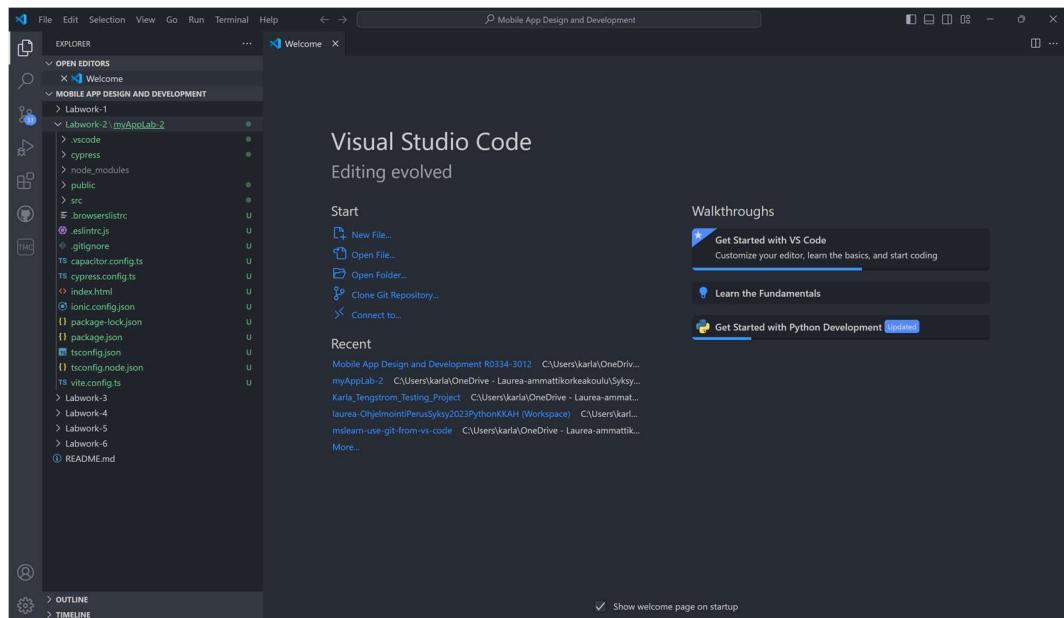
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## 2.7 Step 7: Open the project in VS code using an alternative way

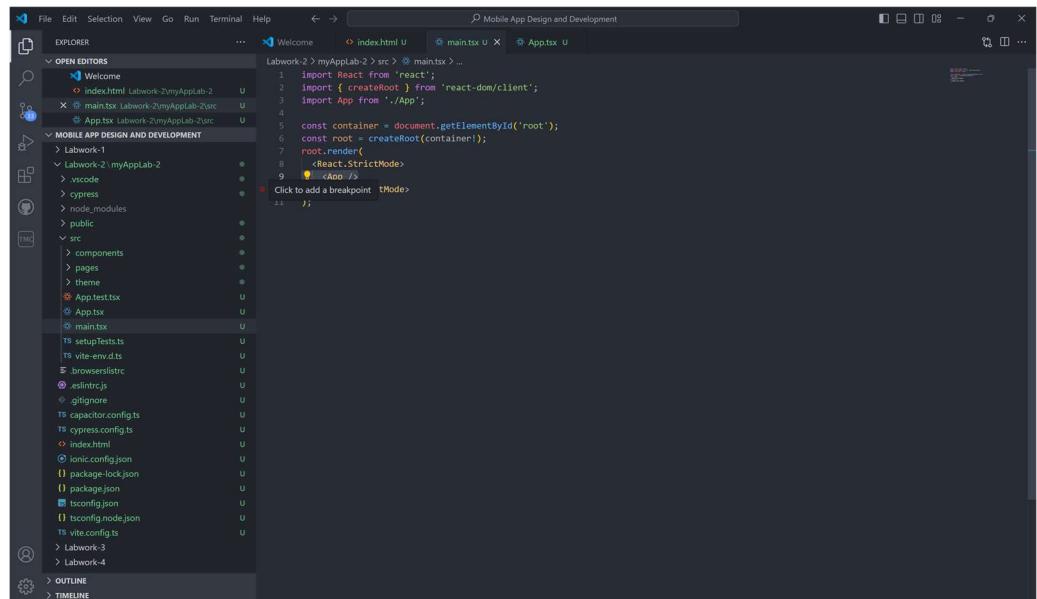
I used the open folder tool in VS Code and opened all the projects I had already created (including Labwork-2/ myAppLab-2):



*"The directory and the main entry point will be our index.tsx. If we open our project in a code editor and open src/index.tsx, we should see the following.."* I did not have a index.tsx page in src folder, I had main.tsx page. I did have the <App /> string in the main.tsx page, so I concluded that everything was OK.

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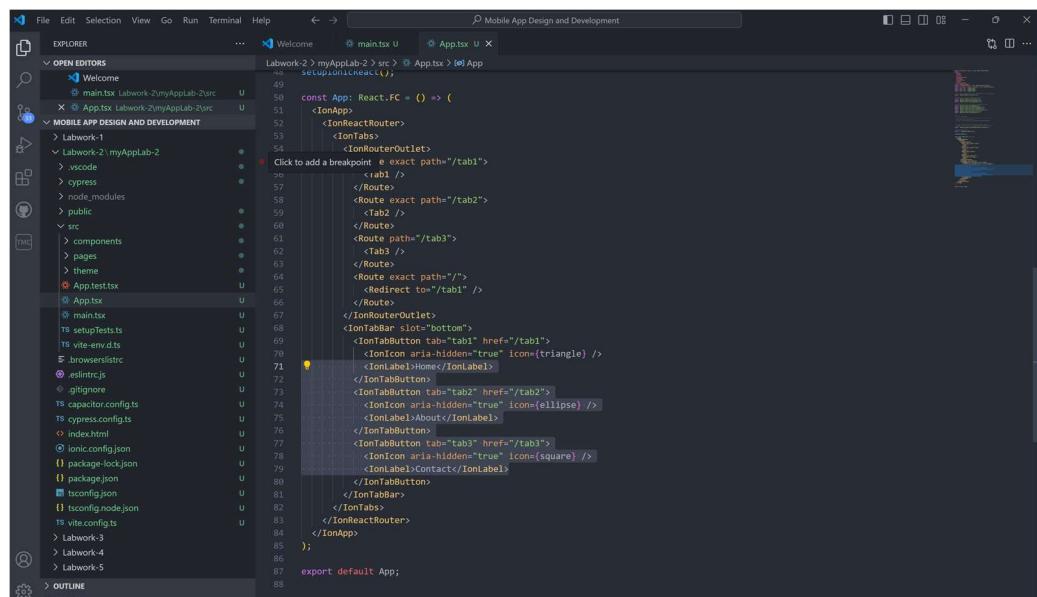


The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows the project structure under "MOBILE APP DESIGN AND DEVELOPMENT". It includes subfolders like Labwork-1, Labwork-2, and Labwork-3, along with files such as index.html, App.tsx, App.test.tsx, and various configuration files.
- Code Editor:** The main.tsx file is open, displaying React code for rendering an App component.
- Terminal:** Shows the command "Mobile App Design and Development".

## 2.8 Step 8: Building a simple UI with navigation

I edited the tab1, tab2 and tab3 label names to Label names to Home, About, and Contact.



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows the project structure under "MOBILE APP DESIGN AND DEVELOPMENT".
- Code Editor:** The main.tsx file is open, showing the modified code where the tabs are labeled "Home", "About", and "Contact".
- Terminal:** Shows the command "Mobile App Design and Development".

```
const App: React.FC = () => {
  return (
    <IonApp>
      <IonReactRouter>
        <IonTabs>
          <IonTab>
            <IonRouterOutlet>
              <Route exact path="/tab1">
                <Tab1 />
              </Route>
              <Route exact path="/tab2">
                <Tab2 />
              </Route>
              <Route exact path="/">
                <Redirect to="/tab1" />
              </Route>
            </IonRouterOutlet>
            <IonTabBar slot="bottom">
              <IonTabButton tab="tab1" href="#/tab1">
                <IonIcon aria-hidden="true" icon={(triangle)} />
                <IonLabel>Home</IonLabel>
              </IonTabButton>
              <IonTabButton tab="tab2" href="#/tab2">
                <IonIcon aria-hidden="true" icon={(ellipse)} />
                <IonLabel>About</IonLabel>
              </IonTabButton>
              <IonTabButton tab="tab3" href="#/tab3">
                <IonIcon aria-hidden="true" icon={(square)} />
                <IonLabel>Contact</IonLabel>
              </IonTabButton>
            </IonTabBar>
          </IonTabs>
        </IonReactRouter>
      </IonApp>
    );
}

export default App;
```

After editing the labels, I used `ionic serve` command and confirmed the results!

## Labwork report

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A screenshot of a code editor interface. On the left is the Explorer sidebar showing project files like 'main.tsx', 'App.tsx', and 'Tab1.tsx'. The main area shows a terminal window titled 'Windows PowerShell' with the command 'ionic serve' running. The output shows the server is listening on port 8100 and provides a link to 'localhost:8100'. A browser window tab labeled 'Ionic App' shows the application running at 'localhost'. The status bar at the bottom indicates the file is 'main.tsx'.

Tab 1 page  
Explore UI Components

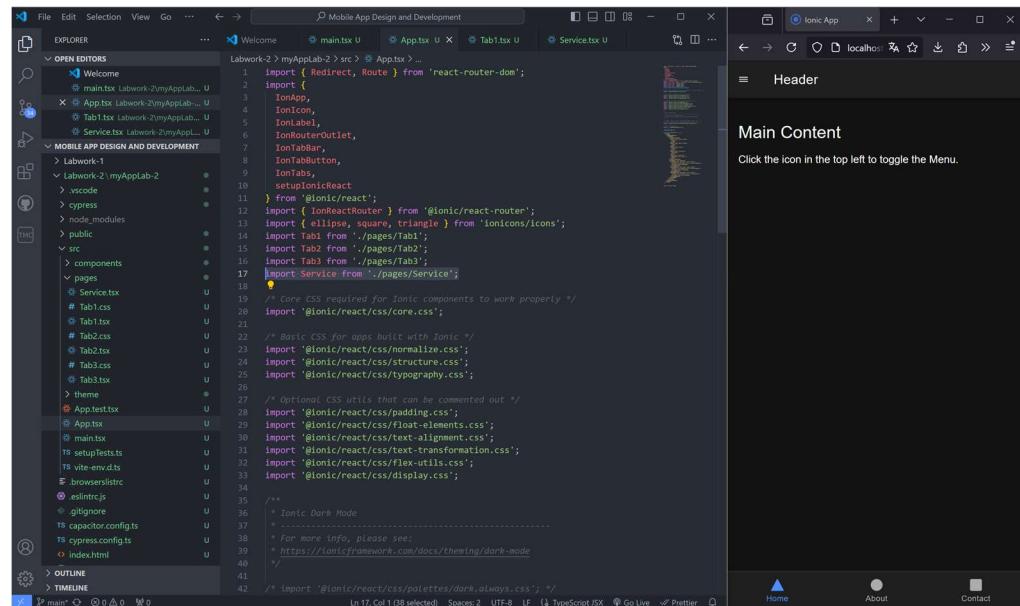
I edited the code in Tab1.tsx, to add a navigation menu to the Home tab.

A screenshot of a code editor interface showing the 'Tab1.tsx' file. The code imports components from 'ionicons' and defines a function that returns an 'IonApp' component containing an 'IonMenu' with a 'Home' tab and a 'Service' tab. The 'IonContent' of the app includes an 'IonPage' with an 'IonToolbar' and 'IonButtons' for navigating between tabs. The status bar at the bottom indicates the file is 'Tab1.tsx'.

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I edited the App.tsx code to import the service page.



```
File Edit Selection View Go ... ← → ○ Mobile App Design and Development ⚡ Welcome main.tsx U App.tsx X Tab1.tsx U Service.tsx U

OPEN EDITORS
  Welcome
  main.tsx Labwork-2/myAppLab... U
  App.tsx Labwork-2/myAppLab... U
  Tab1.tsx Labwork-2/myAppLab... U
  Service.tsx Labwork-2/myAppLab... U

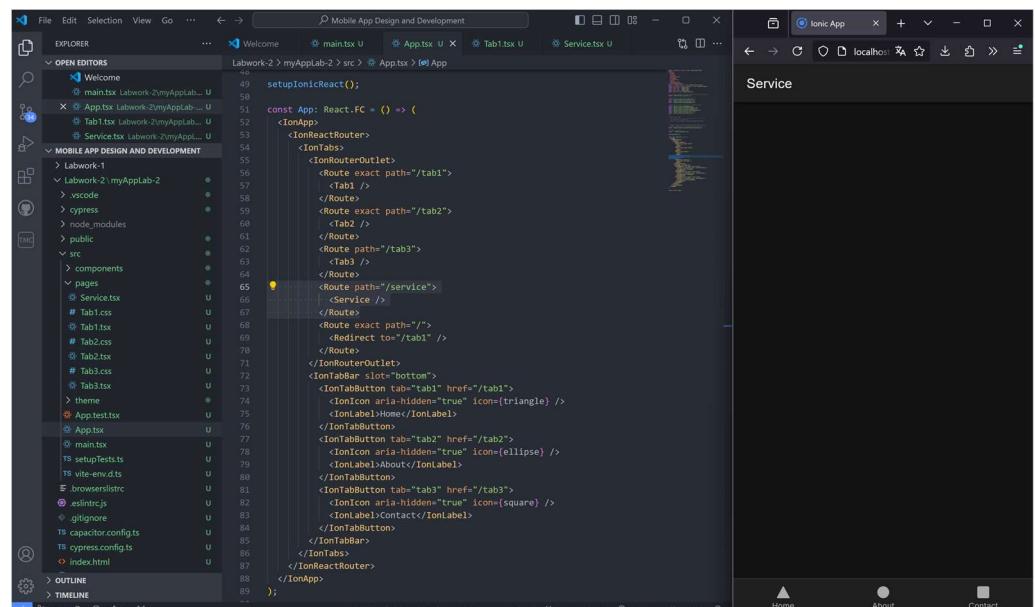
MOBILE APP DESIGN AND DEVELOPMENT
  > Labwork-1
  > Labwork-2/myAppLab-2
    > vscode
    > cypress
    > node_modules
    > public
    > src
      > components
        > pages
          > Service.tsx
          # Tab1.css
          # Tab1.tsx
          # Tab2.css
          # Tab2.tsx
          # Tab3.css
          # Tab3.tsx
        > theme
          > App.test.tsx
          # App.tsx
          # main.tsx
          TS setupTests.ts
          TS vite-env.ts
          browserlistrc
          # eslintrc.js
          # ignore
          TS capacitor.config.ts
          TS cypress.config.ts
          index.html

  > OUTLINE
  > TIMELINE

File Explorer Home About Contact
```

```
1 import { Redirect, Route } from 'react-router-dom';
2 import {
3   IonApp,
4   IonRouter,
5   IonLabel,
6   IonRouterOutlet,
7   IonTabBar,
8   IonTabButton,
9   IonTabs,
10  setupIonicReact
11 } from '@ionic/react';
12 import { IonReactRouter } from '@ionic/react-router';
13 import { ellipse, square, triangle } from 'ionicons/icons';
14 import { Tab1, Tab2, Tab3 } from './pages';
15 import { Tab1, Tab2, Tab3 } from './pages/Tab3';
16 import { Service } from './pages/Service';
17
18 /**
19  * Core CSS required for Ionic components to work properly
20  */
21 import '@ionic/react/css/core.css';
22 /**
23  * Basic CSS for apps built with Ionic
24  */
25 import '@ionic/react/css/normalize.css';
26 import '@ionic/react/css/structure.css';
27 import '@ionic/react/css/typography.css';
28
29 /**
30  * Optional CSS utils that can be commented out
31  */
32 import '@ionic/react/css/padding.css';
33 import '@ionic/react/css/float-elements.css';
34 import '@ionic/react/css/text-alignment.css';
35 import '@ionic/react/css/text-transformation.css';
36 import '@ionic/react/css/flex-utils.css';
37 import '@ionic/react/css/display.css';
38
39 /**
40  * Ionic Dark Mode
41  */
42 /**
43  * For more info, please see:
44  */
45  https://ionicframework.com/docs/theming/dark-mode
46
47 /**
48  * Ionic Dark Mode
49  */
50
51 const App: React.FC = () => (
52   <IonApp>
53     <IonReactRouter>
54       <IonTabBar>
55         <IonRouterOutlet>
56           <Route exact path="/tab1">
57             <Tab1 />
58           </Route>
59           <Route exact path="/tab2">
60             <Tab2 />
61           </Route>
62           <Route path="/tab3">
63             <Tab3 />
64           </Route>
65           <Route path="/service">
66             <Service />
67           </Route>
68           <Route exact path="/">
69             <Redirect to="/tab1" />
70           </Route>
71         </IonRouterOutlet>
72         <IonTabBar slot="bottom">
73           <IonTab tab="tab1" href="/tab1">
74             <IonIcon aria-hidden="true" icon={triangle} />
75             <IonLabel>About</IonLabel>
76           </IonTab>
77           <IonTab tab="tab2" href="/tab2">
78             <IonIcon aria-hidden="true" icon={ellipse} />
79             <IonLabel>About</IonLabel>
80           </IonTab>
81           <IonTab tab="tab3" href="/tab3">
82             <IonIcon aria-hidden="true" icon={square} />
83             <IonLabel>Contact</IonLabel>
84           </IonTab>
85         </IonTabBar>
86       </IonTabBar>
87     </IonReactRouter>
88   </IonApp>
89 )
```

After that I also added the Service page route to our App page after the tab3 route.



```
File Edit Selection View Go ... ← → ○ Mobile App Design and Development ⚡ Welcome main.tsx U App.tsx X Tab1.tsx U Service.tsx U

OPEN EDITORS
  Welcome
  main.tsx Labwork-2/myAppLab... U
  App.tsx Labwork-2/myAppLab... U
  Tab1.tsx Labwork-2/myAppLab... U
  Service.tsx Labwork-2/myAppLab... U

MOBILE APP DESIGN AND DEVELOPMENT
  > Labwork-1
  > Labwork-2/myAppLab-2
    > vscode
    > cypress
    > node_modules
    > public
    > src
      > components
        > pages
          > Service.tsx
          # Tab1.css
          # Tab1.tsx
          # Tab2.css
          # Tab2.tsx
          # Tab3.css
          # Tab3.tsx
        > theme
          > App.test.tsx
          # App.tsx
          # main.tsx
          TS setupTests.ts
          TS vite-env.ts
          browserlistrc
          # eslintrc.js
          # ignore
          TS capacitor.config.ts
          TS cypress.config.ts
          index.html

  > OUTLINE
  > TIMELINE

File Explorer Home About Contact
```

```
1 import { Redirect, Route } from 'react-router-dom';
2 import {
3   IonApp,
4   IonRouter,
5   IonLabel,
6   IonRouterOutlet,
7   IonTabBar,
8   IonTabButton,
9   IonTabs,
10  setupIonicReact
11 } from '@ionic/react';
12 import { IonReactRouter } from '@ionic/react-router';
13 import { ellipse, square, triangle } from 'ionicons/icons';
14 import { Tab1, Tab2, Tab3 } from './pages';
15 import { Tab1, Tab2, Tab3 } from './pages/Tab3';
16 import { Service } from './pages/Service';
17
18 /**
19  * Core CSS required for Ionic components to work properly
20  */
21 import '@ionic/react/css/core.css';
22 /**
23  * Basic CSS for apps built with Ionic
24  */
25 import '@ionic/react/css/normalize.css';
26 import '@ionic/react/css/structure.css';
27 import '@ionic/react/css/typography.css';
28
29 /**
30  * Optional CSS utils that can be commented out
31  */
32 import '@ionic/react/css/padding.css';
33 import '@ionic/react/css/float-elements.css';
34 import '@ionic/react/css/text-alignment.css';
35 import '@ionic/react/css/text-transformation.css';
36 import '@ionic/react/css/flex-utils.css';
37 import '@ionic/react/css/display.css';
38
39 /**
40  * Ionic Dark Mode
41  */
42 /**
43  * For more info, please see:
44  */
45  https://ionicframework.com/docs/theming/dark-mode
46
47 /**
48  * Ionic Dark Mode
49  */
50
51 const App: React.FC = () => (
52   <IonApp>
53     <IonReactRouter>
54       <IonTabBar slot="bottom">
55         <IonTab tab="tab1" href="/tab1">
56           <IonIcon aria-hidden="true" icon={triangle} />
57           <IonLabel>About</IonLabel>
58         </IonTab>
59         <IonTab tab="tab2" href="/tab2">
60           <IonIcon aria-hidden="true" icon={ellipse} />
61           <IonLabel>About</IonLabel>
62         </IonTab>
63         <IonTab tab="tab3" href="/tab3">
64           <IonIcon aria-hidden="true" icon={square} />
65           <IonLabel>Contact</IonLabel>
66         </IonTab>
67       </IonTabBar>
68     </IonReactRouter>
69   </IonApp>
70 )
```

## 2.9 Step-9: Navigation with Menu

I navigated to ./src/pages folder and made the changes to Tab2.tsx and Tab3.tsx pages code, such as header names and titles.

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The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer (Left):** Shows the project structure:
  - File: main.tsx
  - File: App.tsx
  - File: Tab1.tsx
  - File: Tab2.tsx
  - File: Tab3.tsx
  - File: Service.tsx
  - File: Tab1.css
  - File: Tab1.tsx
  - File: Tab2.css
  - File: Tab2.tsx
  - File: Tab3.css
  - File: Tab3.tsx
  - Folder: theme
  - File: App.test.tsx
  - File: App.tsx
  - File: main.tsx
  - File: setupTests.ts
  - File: vite-env.d.ts
  - File: browserlistrc
  - File: eslintrc.js
  - File: .gitignore
  - File: capacitor.config.ts
  - File: cypress.config.ts
  - File: index.html
  - File: ionic.config.json
  - File: package-lock.json
  - File: package.json
  - File: tsconfig.json
  - File: tsconfig.node.json
- Editor (Center):** Displays the code for `Tab2.tsx`. The code uses the `IonPage`, `IonHeader`, and `IonToolbar` components from the `@ionic/react` library to create a tabbed interface. It also includes an `ExploreContainer` component.
- Terminal (Bottom Left):** Shows the command `npm start`.
- Status Bar (Bottom Right):** Shows the status "Mobile App Design and Development".

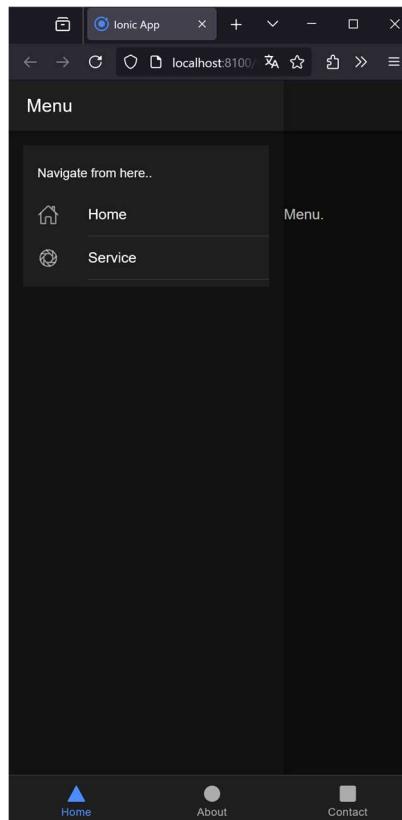


The screenshot shows the Visual Studio Code interface with the title bar "Mobile App Design and Development". The left sidebar is the Explorer view, showing the project structure. The main editor area contains the following Ionic React code for the Tab3 component:

```
1 import { IonContent, IonHeader, IonPage, IonTitle, IonToolbar } from '@ionic/react';
2 import ExploreContainer from '../components/ExploreContainer';
3 import './Tab3.css';
4
5 const Tab3: React.FC = () => {
6   return (
7     <IonPage>
8       <IonHeader>
9         <IonToolbar>
10           <IonTitle>Contact</IonTitle>
11           <IonToolbar>
12             <IonContent fullscreen>
13               <IonHeader collapse="condense">
14                 <IonToolbar>
15                   <IonTitle size="large">Contact Information</IonTitle>
16                 </IonToolbar>
17               </IonHeader>
18               <ExploreContainer name="Tab 3 page" />
19             </IonContent>
20           </IonPage>
21         );
22       );
23     );
24   };
25
26 export default Tab3;
```

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Here is the simple app view with Menu navigation!

### 3 Hands-on Practice-2 (Git)

#### 3.1 Step 1: Checking Git version and dependencies configured

Checkin Git version was easy, but the guide had a space between the dashdash and therefore the command `git - -version` did not work if copied directly from the guide (correct: `git --version`).

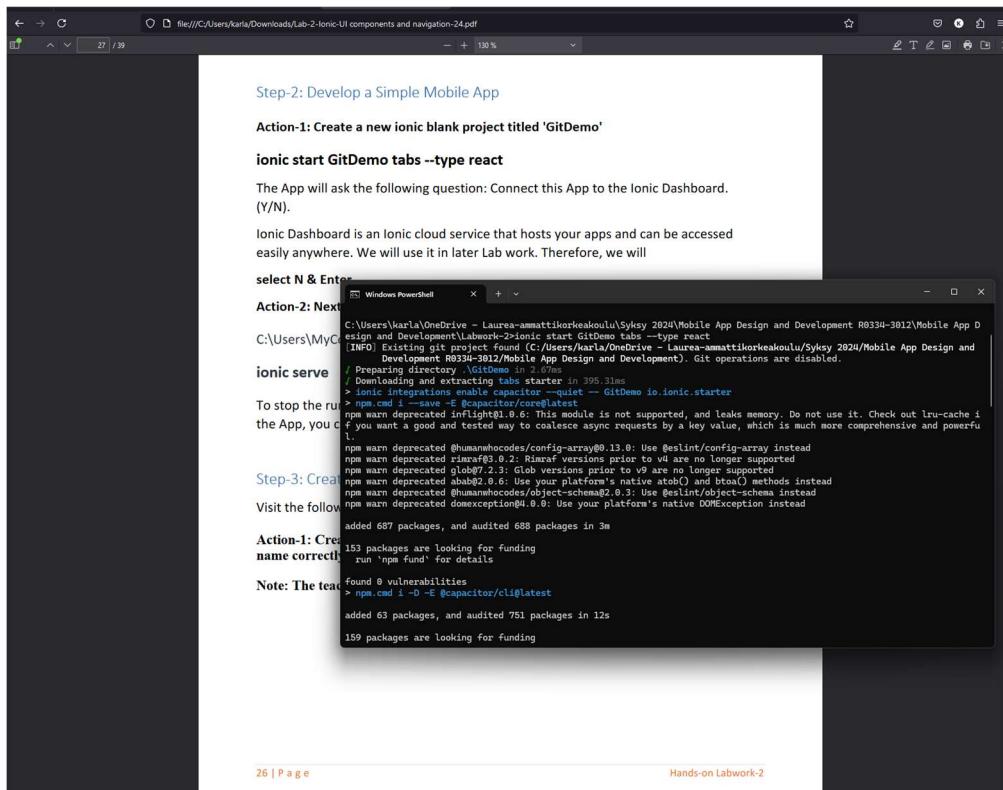
```
C:\Users\karla>git --version
git version 2.39.2.windows.1
```

#### 3.2 Step 2: Develop a Simple Mobile App

I created the new app to my Labwork-2 repository using command `ionic start GitDemo tabs --type react`

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Hands-on Labwork-2



Using ionic serve we can see the new app running.

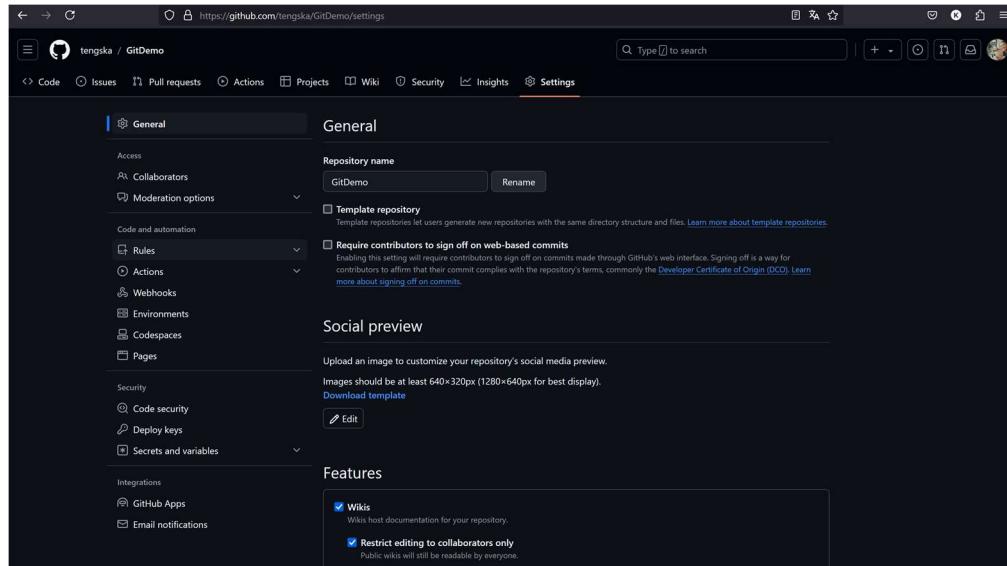
### 3.3 Step 3: Create a GitHub account and project to store the repository online

I have already created an account earlier as I have worked with Github on other studies before this course. I skipped the account creating part.

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I created a repository named GitDemo in my GitHub account.



### 3.4 Step 4: Copy (add) the local Ionic project repository to GitHub online repository

I used several commands as guided: *git init*, *git status*

```
C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2\GitDemo>git init
Initialized empty Git repository in C:/Users/karla/OneDrive - Laurea-ammattikorkeakoulu/Syksy 2024/Mobile App Design and Development R0334-3012/Mobile App Design and Development/Labwork-2/GitDemo/.git/

C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2\GitDemo>git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    .browserslistrc
    .eslintrc.js
    .gitignore
    .vscode/
    capacitor.config.ts
    cypress.config.ts
    cypress/
    index.html
    ionic.config.json
    package-lock.json
    package.json
    public/
    src/
    tsconfig.json
    tsconfig.node.json
    vite.config.ts

nothing added to commit but untracked files present (use "git add" to track)
```

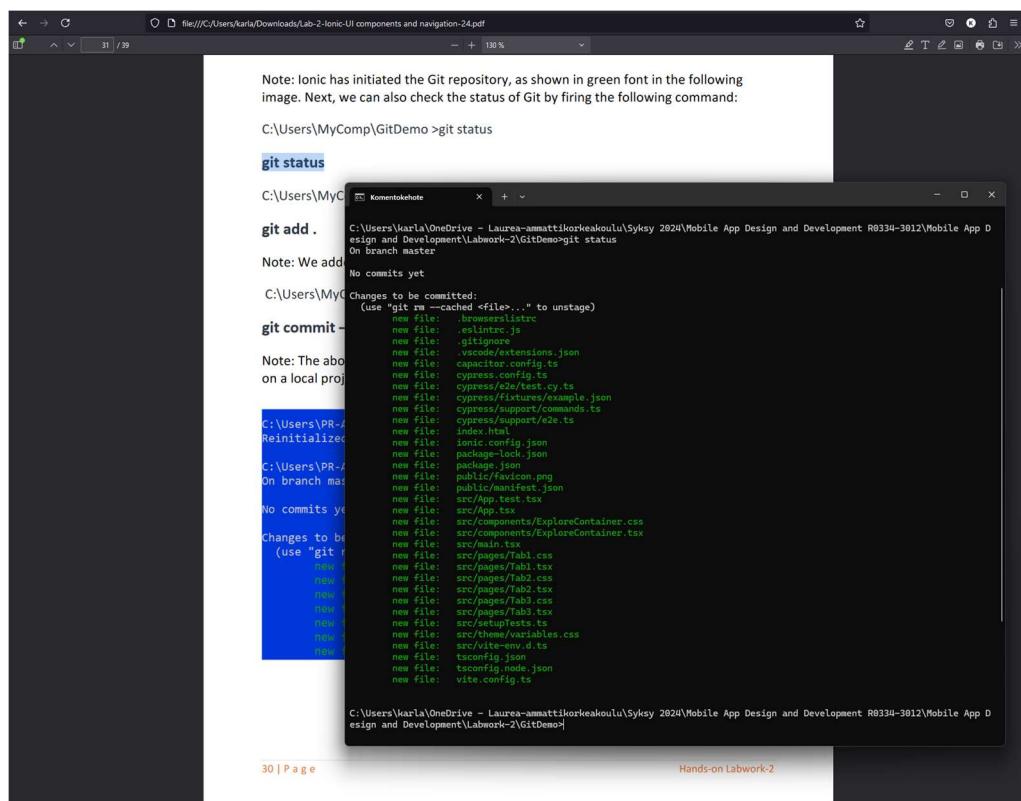
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Next step was to command `git add .`. I don't know what went wrong or did anything go wrong. The "problem" was that after I used the git add command, my computer slowed down dramatically, and it took about 90min to produce several warnings:

```
C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2\GitDemo>git add .
warning: in the working copy of '.browserslistrc', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of '.eslintrc.js', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of '.gitignore', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of '.vscode/extensions.json', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'capacitor.config.ts', LF will be replaced by CRLF the next time Git touches it
|
```

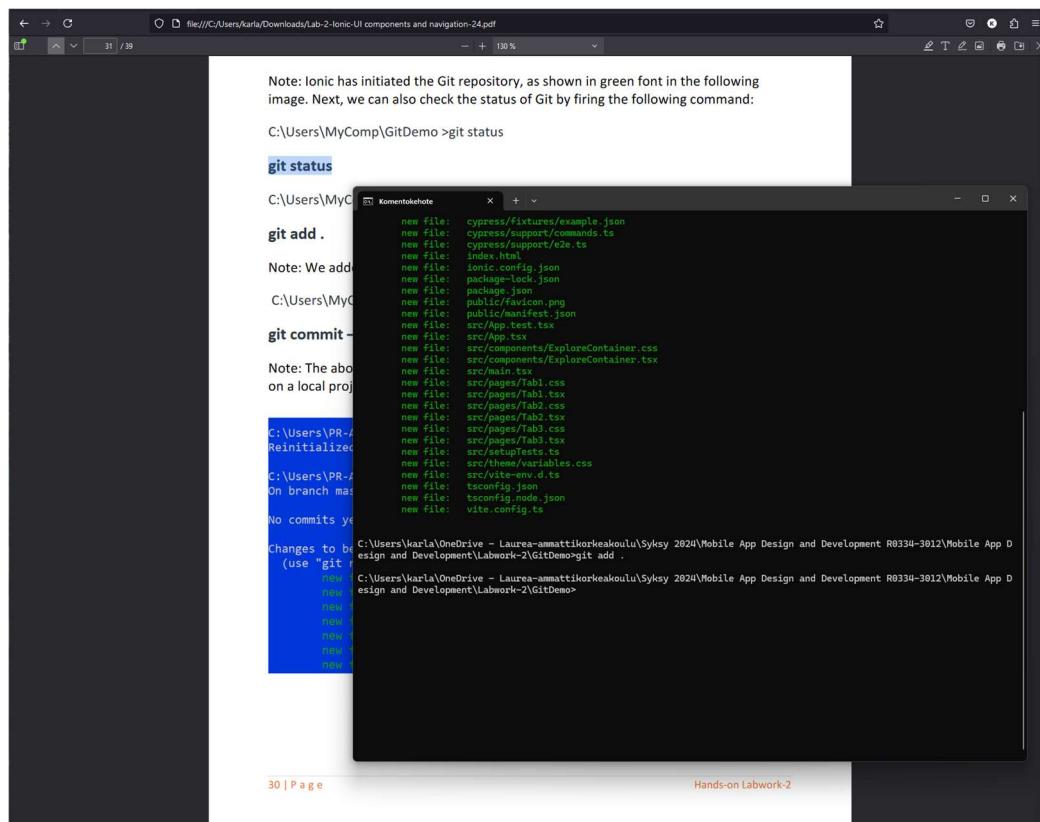
The process was still ongoing... After a full night of waiting I decided to stop. My Labworks are in a directory that is connected to OneDrive and I suspected that the issue was somewhere in there. I configured the folder not to be backed up to OneDrive and store them only locally. It seemed to help with my issues, at least for now. At least when firing command `git status`, the results are corresponding with guide images.



`git add .` command worked also as expected.

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```
file:///C:/Users/karla/Downloads/Lab-2-Ionic-UI components and navigation-24.pdf
Note: Ionic has initiated the Git repository, as shown in green font in the following image. Next, we can also check the status of Git by firing the following command:
C:\Users\MyComp>git status
git status
C:\Users\MyComp>
git add .
Note: We added 1 new file to be committed.
C:\Users\MyComp>
git commit -m "Initial Commit"
Note: The above commit has not been pushed to any of your local repositories.
On branch main
nothing to commit, working tree clean
C:\Users\PR-REINITIALIZED>
Reinitialized from C:\Users\PR-REINITIALIZED>
C:\Users\PR-REINITIALIZED>
On branch main
nothing to commit, working tree clean
No commits yet
Changes to be committed:
  (use "git add" to include in what will be committed)
    new file: cypress/fixtures/example.json
    new file: cypress/support/commands.ts
    new file: cypress/support/e2e.ts
    new file: index.html
    new file: ionic.config.json
    new file: package-lock.json
    new file: package.json
    new file: public/favicon.png
    new file: public/manifest.json
    new file: src/App.test.tsx
    new file: src/App.tsx
    new file: src/components/ExploreContainer.css
    new file: src/components/ExploreContainer.tsx
    new file: src/main.tsx
    new file: src/pages/Tab1.tsx
    new file: src/pages/Tab1.css
    new file: src/pages/Tab2.tsx
    new file: src/pages/Tab2.css
    new file: src/pages/Tab3.tsx
    new file: src/pages/Tab3.css
    new file: src/public/styles.css
    new file: vite-env.d.ts
    new file: tsconfig.json
    new file: tsconfig.node.json
    new file: vite.config.ts
C:\Users\karla\OneDrive - Laure-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2>git add .
C:\Users\karla\OneDrive - Laure-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2>git commit -m "Initial Commit"
error: pathspec '-m' did not match any file(s) known to git
error: pathspec 'Initial Commit' did not match any file(s) known to git
C:\Users\karla\OneDrive - Laure-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2>
```

Firing command `git commit -m "Initial Commit"` did not work as expected. Errors appeared:

```
error: pathspec '-m' did not match any file(s) known to git
error: pathspec 'Initial Commit' did not match any file(s) known to git
```

I tried a few things, but command `git commit -m "Initial Commit"` did not seem to work. I tried `git commit` and it opened a vim interface - which I had a hard time to get out from (sorry, no pictures from that one...)! After that I tried the `git commit -m "Initial Commit"` command again and this time it worked out.

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```
C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2\GitDemo>git commit -m "Initial Commit"
git commit -m "Initial Commit"

Note: The above command will commit any changes. Whenever you update anything on a local project, it is better to fire above command.

C:\Users\PR-ACADEMY\GitDemo-1>Reinitialized existing Git repository in C:/Users/PR-ACADEMY/GitDemo-1/
On branch master
No commits yet
Changes to be committed:
  (use "git rm --cached <file>" to unstage)
  new file:   .gitignore
  new file:   angular.json
  new file:   browserlistrc
  new file:   capacitor.config.json
  new file:   cypress.config.js
  new file:   cypress.example.json
  new file:   cypress/support/e2e.ts
  new file:   index.html
  new file:   ionic.config.json
  new file:   package-lock.json
  new file:   package.json
  new file:   public/favicon.png
  new file:   public/manifest.json
  new file:   tsconfig.app.json
  new file:   tsconfig.json
  new file:   tsconfig.spec.json
  new file:   vite.config.js
  new file:   vite.config.ts

30 | Page

Check the status again
C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2\GitDemo>git status
On branch master
nothing to commit, working tree clean
On branch master
C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2\GitDemo>
nothing to commit, working tree clean
```

I could not get the git to push, always got an error:

```
C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2\GitDemo>git push -u origin main
error: src refspec origin does not match any
error: src refspec main does not match any
error: failed to push some refs to '-u'
```

After trying as guided from VS Code:

```
File Edit Selection View Go Run Terminal Help <- > Mobile App Design and Development
EXPLORER OPEN EDITORS
MOBILE APP DESIGN AND ... main.tsx U App.tsx U Tab1.tsx U Tab2.tsx U Tab3.tsx U index.html X Service.tsx U
Labwork-2 > GitDemo
myAppLab-2
Labwork-3
Labwork-4
Labwork-5
Labwork-6
README.md

1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="utf-8" />
5      <title>Ionic App</title>
6
7      <base href="/" />
8
9      <meta name="color-scheme" content="light dark" />
10     <meta name="viewport" content="viewport-fit=cover, width=device-width, initial-scale=1.0, minimum-scale=1.0, maximum-scale=1.0, user-scalable=no" />
11     <meta name="format-detection" content="telephone=no" />
12     <meta name="msapplication-tap-highlight" content="no" />
13
14     <link rel="manifest" href="/manifest.json" />
15     <link rel="shortcut icon" type="image/png" href="/favicon.png" />
16
17     <!-- add to homepage for ios -->
18     <meta name="apple-mobile-web-app-capable" content="yes" />
19     <meta name="apple-mobile-web-app-title" content="Ionic App" />
20     <meta name="apple-mobile-web-app-status-bar-style" content="black" />
21
22 </head>
23 <body>
24     <div id="root"></div>
25     <script type="module" src="/src/main.tsx"></script>
26 </body>
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS
PS C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2\GitDemo>git push -u origin main
error: src refspec origin does not match any
error: src refspec main does not match any
error: failed to push some refs to '-u'
PS C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2\GitDemo>git clone https://github.com/tengska/GitDemo.git
Cloning into 'GitDemo'...
warning: You appear to have cloned an empty repository.
PS C:\Users\karla\OneDrive - Laurea-ammattikorkeakoulu\Syksy 2024\Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2\GitDemo>
```

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It did not help, as from cmd the result were still the same errors. After copying and firing these commands from GitHub:

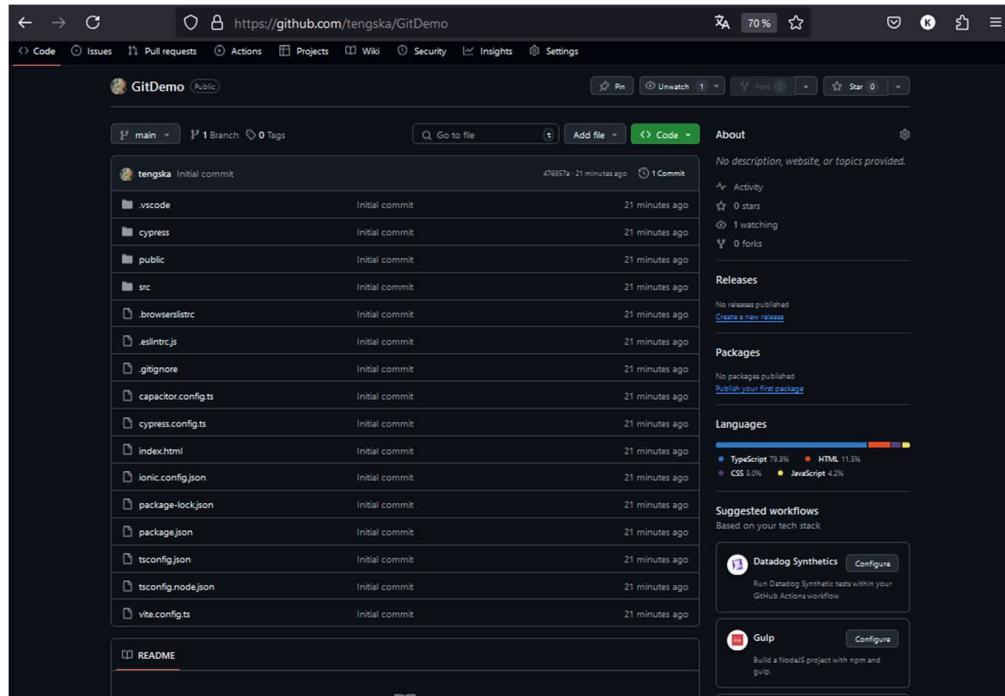
```
git remote add origin https://github.com/tengska/GitDemo.git
```

```
git branch -M main
```

```
git push -u origin main
```

the push seemed to work properly, and the content appeared in

<https://github.com/tengska/GitDemo>



One funny thing... I had the GitDemo directory under Labwork-2 directory - and as we previously remotely pushed it to GitHub under its own directory (tengska/GitDemo), I cannot push local ...Mobile App Design and Development R0334-3012\Mobile App Design and Development\Labwork-2\GitDemo directory to GitHub as it is already synced to its own directory. So in case you are browsing in my [Labwork-2 repo](#) in GitHub and wondering, why the GitDemo directory does not open there - the reason is the above. If you have some way to resolve this I would appreciate (could the resolution be to delete the tengska/GitDemo repo and then syncing the GitDemo to under the Labwork-2 repo?).

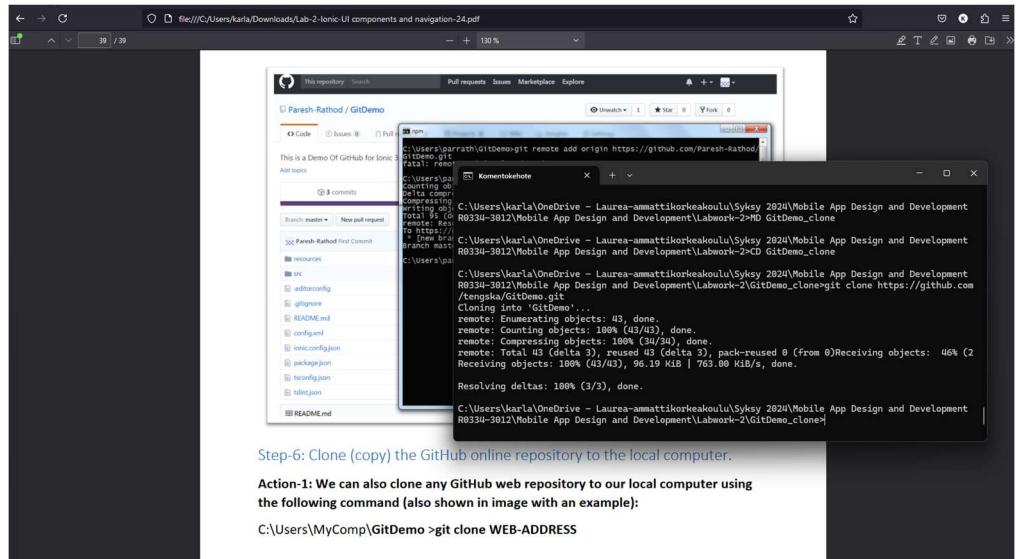
### 3.5 Step 5: Clone (copy) the GitHub online repository to the local computer

I did not understand the guide for this section.

I created a new directory called *GitDemo\_clone* using MD command and moved to the directory using CD command. After that I used *git clone https://github.com/tengska/GitDemo.git* command to clone the repo from GitHub. The clone repo can be found also from here ([link](#)).

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## Sources

### Electric sources

Grimm, S. (2022). Building an Ionic React Side Menu Navigation. [YouTube video]. [Accessed 25.9.2024]. Available: <https://www.youtube.com/watch?v=XrUrkofuAxw>

Ionic Framework. Getting started. [Accessed 23.9.2024]. Available: <https://ionicframework.com/docs>

Ionic Framework. Developing. [Accessed 23.9.2024]. Available: <https://ionicframework.com/docs/developing/startng>

Ionic Framework. Layout. [Accessed 23.9.2024]. Available: <https://ionicframework.com/docs/layout/structure>

Ionic Framework. Theming. [Accessed 24.9.2024]. Available: <https://ionicframework.com/docs/theming/basics>

Ionic Framework. React. [Accessed 24.9.2024]. Available: <https://ionicframework.com/docs/react>

Rathod, K. (2024). Ionic with Git: Creating Simple Tabs Mobile App with Menu Navigation. HANDS-ON LAB-WORK-2. [pdf document]. [Accessed 26.9.2024].