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Lab Work Report

Introduction to Mobile App Design and Development
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Lab #1: Setting up Ionic Framework and Creating First App

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1 Github Repository

While there was no mention of Github in the Lab assignment, based off request for compulsory Github repository and that I have done it before, it was not a difficult task. I have also made sure the Github repo is public and provided an index table of contents on the README file for easier navigation for the future tasks. The link is: <https://github.com/konradszulc/konradszulc.introMobileLabs>

2 Learning Outcome and Reflection

Going into this course, there is a lot of excitement but also a bit of overwhelming information due to my limited experience of developing web applications and little to no experience of mobile apps. However, I love to learn new terminologies, technologies, applications and frameworks to constantly improve my IT skills. Especially with such a centric technology-based world, constant learning is important and working with mobile applications is quite future proof in the industry. I specifically have interest in UI design, as when building my own website last year, got me to appreciate and enjoy making intuitive and user-friendly designs. The content provided by Udacity really piqued my interest due to the hyper focus on the mobile platform and the viewpoint of the end user, especially understanding that good UI does not necessarily mean good UX. Additionally, the different type of scenarios and situations a mobile developer must consider from a mobile user perspective rather than just web development. To think about the different mobile constraints and the path a user will take to fulfil the task of the app. Potentially a career opportunity to keep an eye on. Going into this first task however did not intimidate me due to my experience with tinkering and downloading software on my own computer.

Before starting the tasks of downloading software, I began with the module 1 content. The content was exactly what I was looking forward to, as before installing programs, I also want to know more information about what is going into my computer. As well, to have a bit more knowledge about some of the skills needed for the future of the course and how to utilize some of these programs after the installation process. For example, Shad Sluiter (2021) provides useful basic information on the tools required to build mobile apps, and some of the advantages and disadvantages to those tools. While they do not go over Ionic, they provide useful information to beginners, why these programs are necessary and the sort of reasons to pick one over the other. Such as, the prospect of having one base for code rather than having to write code for two different native codes, which can feel disjointed when working with multiple teams or updating the app in the future.

Furthermore, my JavaScript experience is quite limited, but I do have some experience with coding in general. The video by Mosh Hamedani (2018) provides a quick and easy to follow way to setup the environment for JavaScript, while also showing the basics that are similar to concepts in other languages like python but just a bit different syntax. Obviously, the more complicated, the more different it will be,

but these are valuable resources I can continue to use throughout the course. Especially since I will continue to use this creator, for when developing my group's app, to better understand JavaScript.

The video by Academind (2019) helped to illustrate some of the key differences between the frameworks available, such as how versatile they are with one language or the ones that have a plentiful amount of component kits. From this video it clearly indicated to me why as students we are learning through Ionic first because it seems to be the more beginner friendly and versatile framework, while still being very viable in today's market. As for the video by Ionic (2022) providing a brief overview of the framework and the installation process, but also an in-depth look of how the framework functions in a straightforward way. A valuable piece of information I continued to use, while installing and dealing with Ionic based app, and will continue to use the Ionic material for the future.

The guide provided by Kalpana Rathod and Paresh Rathod (2025) gave a thorough process to execute the tasks swiftly and without much error. This allowed my execution of the tasks to go better, than if it were to do solely based off the videos, knowing exactly what the course requires. While I did not consult friends about downloading any of the software or creating the work environment/app, I did ask about the requirement for a GitHub repo, to verify we required one. I ended up making that easily on my own, as I have done before for other courses. I also confirmed all the tasks required, which was to go through the modules, create the work environment on a personal computer and start with creating the first app. Thus, I feel ready to start the next modules and continue in this course enthusiastically. I also feel confident, that if I need to setup a similar environment in a different computer or scenario, I will have no issues. Especially since most programs either have docs or a user-friendly approach to installing and using a software or framework. Nonetheless, this report may prove useful to notice different steps or tribulations I had before, to make the process even smoother or faster.

Overall, the entire process was simple, without much trouble, even when dealing with lots of new programs and methods of installation. Due to my experience of setting computers up from scratch and being hyper aware of what is installed on my machine, allowed for a smooth task. I hope this will continue to be the case for the rest of the course, to help my learning journey.

3 Installing NodeJS

This is my first time hearing of Node but thanks to the guide and videos, I understand why it is needed, and trust it to be run on my device. Therefore, I went to the links provided and got the LTS version of V22.19.0 on windows. I already had PowerShell on my device which allowed for a very smooth installation without any issues. Going forward with most screenshots in this report, I have included a text pad with my name on it if my name is nowhere else present and part of my desktop background to illustrate further these are my own screenshots. As seen in the

screenshots everything was fully installed, which to then confirm myself, used the CMD prompt of checking the correct version of Node and NPM was ready for use.

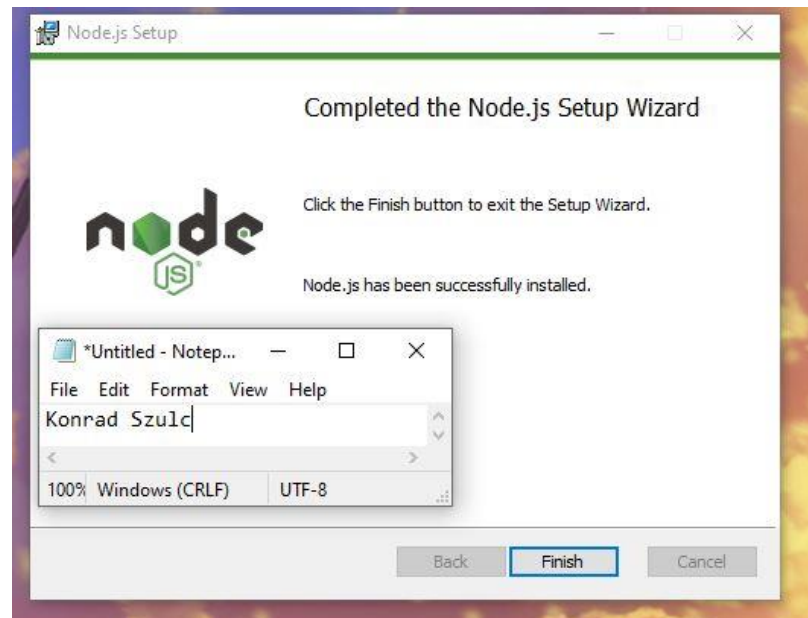


Figure 1 Node Installed

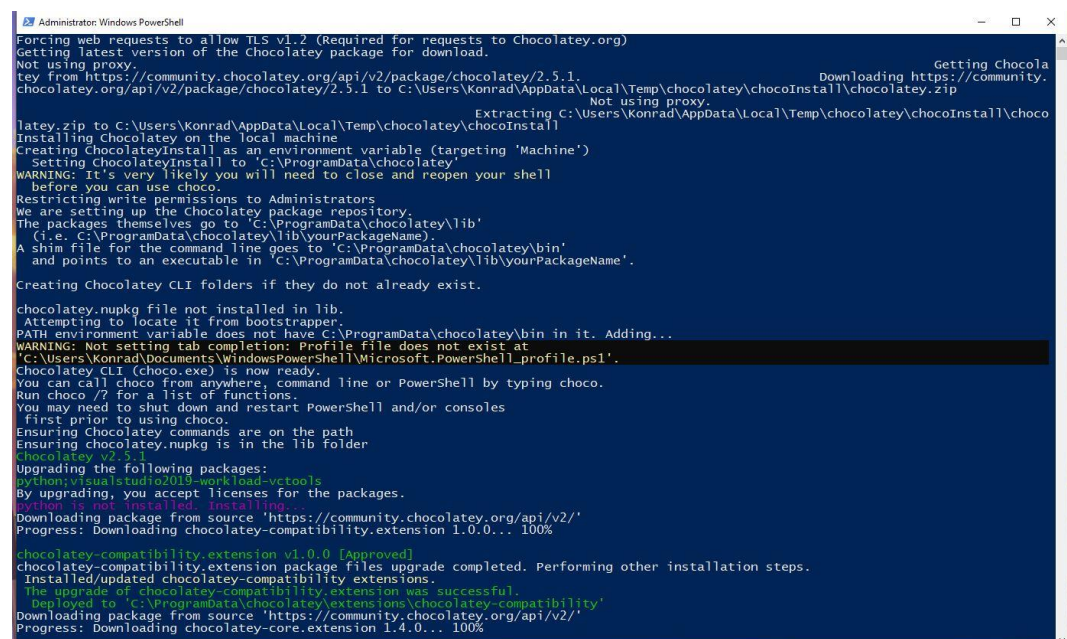
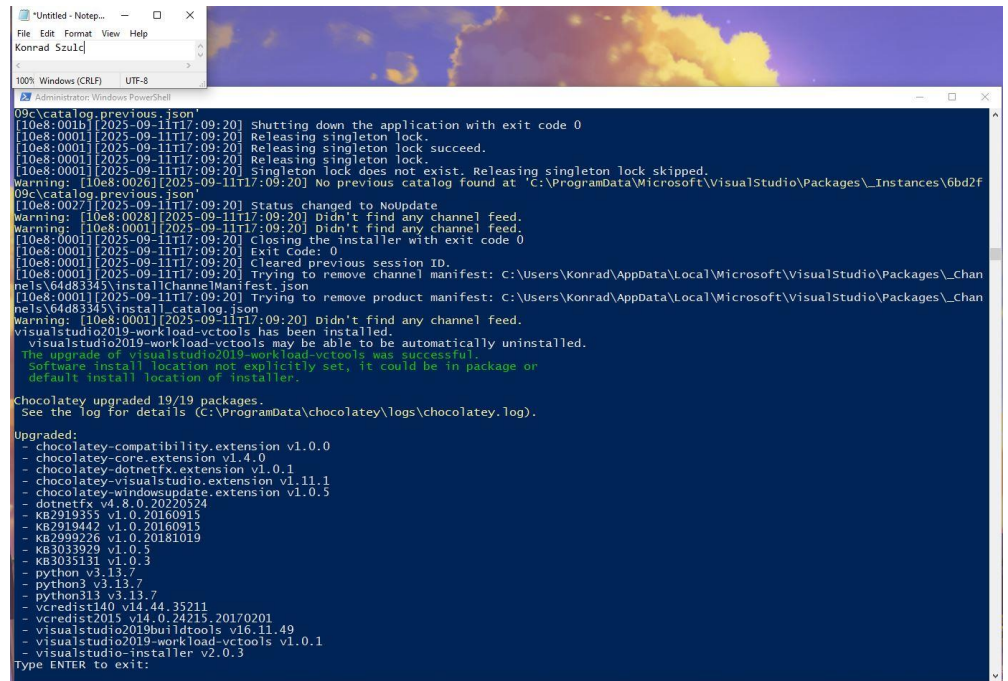


Figure 2 Installation of tools necessary to compile Node.js



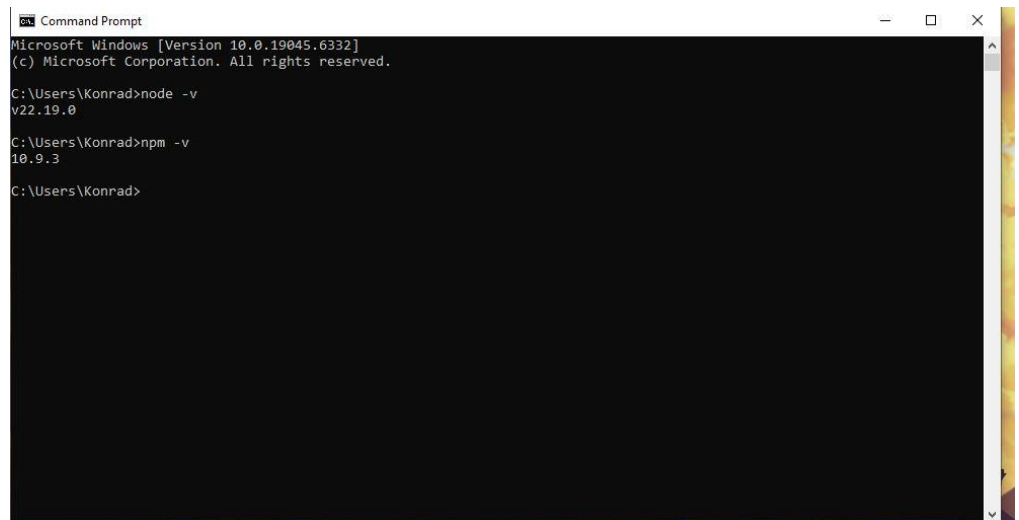
```
09c\catalog.previous.json'
[10e8:001b][2025-09-11T17:09:20] Shutting down the application with exit code 0
[10e8:0001][2025-09-11T17:09:20] Releasing singleton lock.
[10e8:0001][2025-09-11T17:09:20] Releasing singleton lock succeed.
[10e8:0001][2025-09-11T17:09:20] Releasing singleton lock.
[10e8:0001][2025-09-11T17:09:20] Singleton lock does not exist. Releasing singleton lock skipped.
warning: [10e8:0026][2025-09-11T17:09:20] No previous catalog found at 'C:\ProgramData\Microsoft\VisualStudio\Packages\_Instances\6bd2f
09c\catalog.previous.json'
[10e8:0027][2025-09-11T17:09:20] Status changed to NoUpdate
warning: [10e8:0028][2025-09-11T17:09:20] Didn't find any channel feed.
warning: [10e8:0001][2025-09-11T17:09:20] Didn't find any channel feed.
[10e8:0001][2025-09-11T17:09:20] Closing the installer with exit code 0
[10e8:0001][2025-09-11T17:09:20] Exit code: 0
[10e8:0001][2025-09-11T17:09:20] Cleared previous session ID.
[10e8:0001][2025-09-11T17:09:20] Trying to remove channel manifest: C:\Users\Konrad\AppData\Local\Microsoft\VisualStudio\Packages\_Chan
nels\64d83345\install_channel_manifest.json
[10e8:0001][2025-09-11T17:09:20] Trying to remove product manifest: C:\Users\Konrad\AppData\Local\Microsoft\VisualStudio\Packages\_Chan
nels\64d83345\install_catalog.json
warning: [10e8:0001][2025-09-11T17:09:20] Didn't find any channel feed.
visualstudio2019-workload-vctools has been installed.
visualstudio2019-workload-vctools may be able to be automatically uninstalled.
The upgrade of visualstudio2019-workload-vctools was successful.
Software install location not explicitly set, it could be in package or
default install location of installer.

Chocolatey upgraded 19/19 packages.
See the log for details (C:\ProgramData\chocolatey\logs\chocolatey.log).

Upgraded:
- chocolatey-compatibility.extension v1.0.0
- chocolatey-core.extension v1.4.0
- chocolatey-dotnetfx.extension v1.0.1
- chocolatey-visualstudio.extension v1.11.1
- chocolatey-windowsupdate.extension v1.0.5
- dotnetfx v4.8.0.20220524
- KB2918355 v1.0.20160915
- KB2919442 v1.0.20160915
- KB2999226 v1.0.20181019
- KB3033929 v1.0.3
- KB3035131 v1.0.3
- python v3.13.7
- python3 v3.13.7
- python313 v3.13.7
- vcredist140 v14.44.35211
- vcredist2015 v14.0.24215.20170201
- visualstudio2019buildtools v16.11.49
- visualstudio2019-workload-vctools v1.0.1
- visualstudio-installer v2.0.3

Type ENTER to exit:
```

Figure 3 Finished installing tools (ex. Chocolatey)



```
Microsoft Windows [Version 10.0.19045.6332]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Konrad>node -v
v22.19.0

C:\Users\Konrad>npm -v
10.9.3

C:\Users\Konrad>
```

Figure 4 Confirmed Versions installed

4 Installing Git and Updating Visual Studio Code

VS Code was already installed on my computer but was not running the latest version. Therefore, I screenshotted both the older version and new version to show I can check for updates and keep my programs up to date. As well, to show my readiness for this course, as with new updates come better features, performance and security improvements. Git, however, was new to me, but with VS Code preinstalled I expected no issues, thus proceeded with the full download from the link provided. The guide provided essential tips and left most of the selections as default selected except for a few different as illustrated through the screenshots. I also made sure to understand these terms to the best of my knowledge by simply googling the basic definition to know what I am installing into my computer. The most confusing was the Git Credential helper as that was not mentioned but figured to leave that as is to avoid potential future issues.

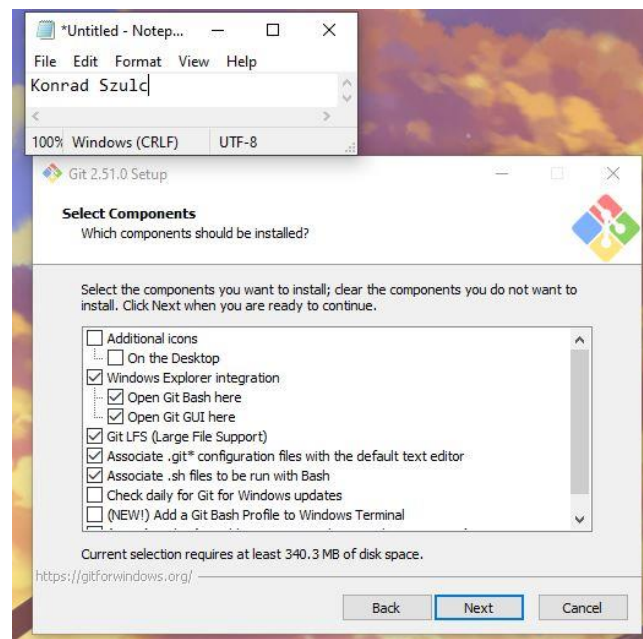


Figure 5 Default Settings Selected Git

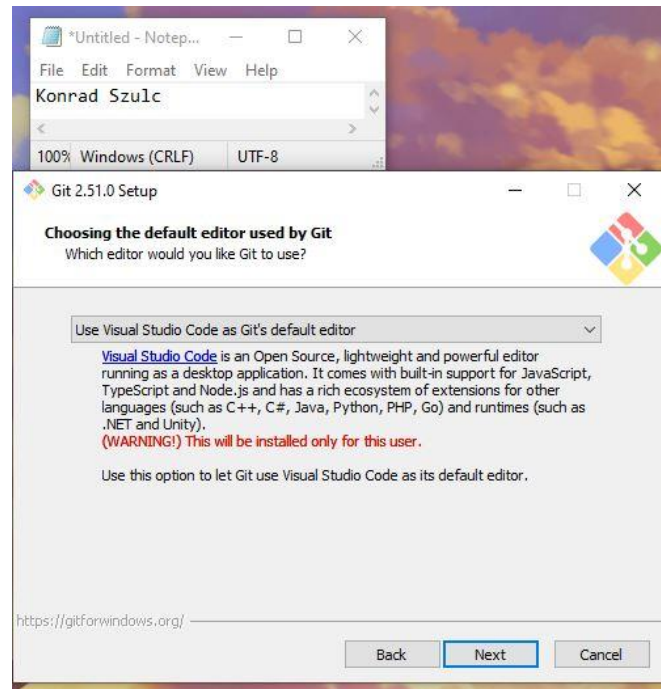


Figure 6 VS Code as git default editor.

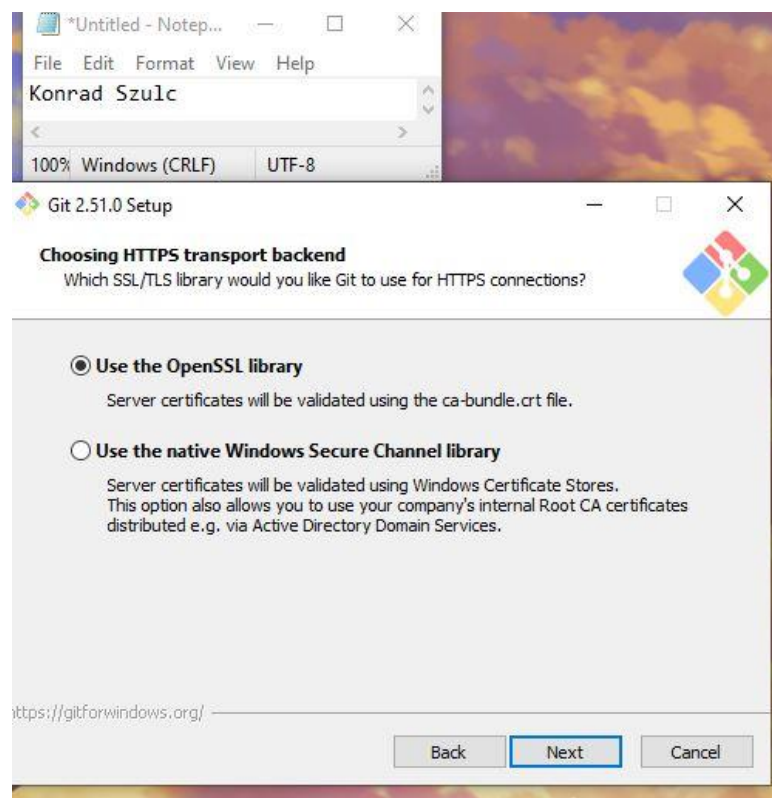


Figure 7 Default settings as directed for git installation (OpenSSL Library)

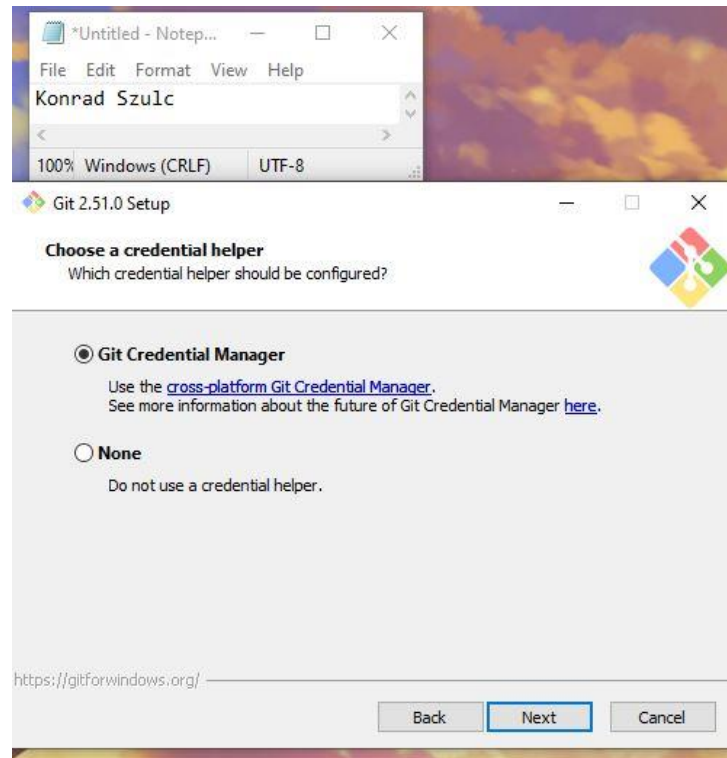


Figure 8 Git Credential Manager selected.

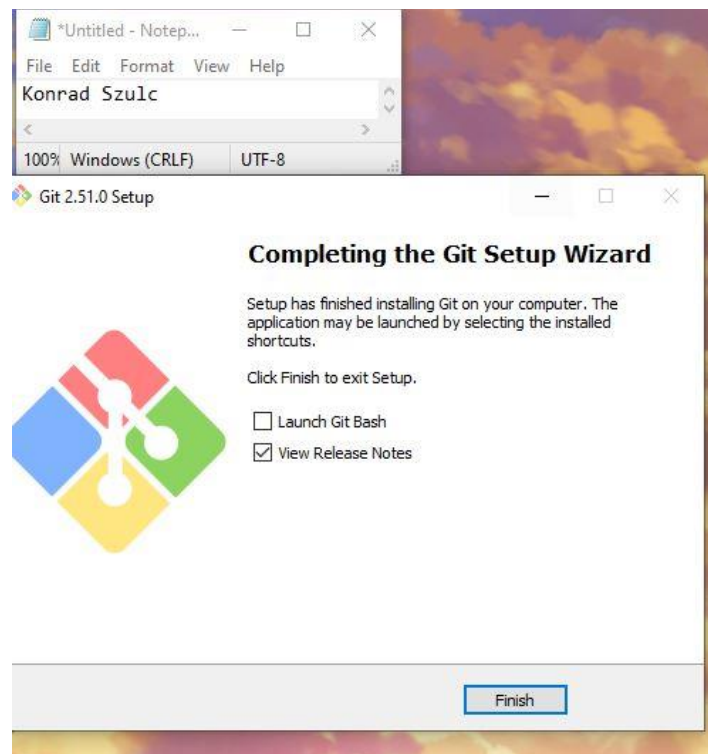


Figure 9 Git Installed Successfully

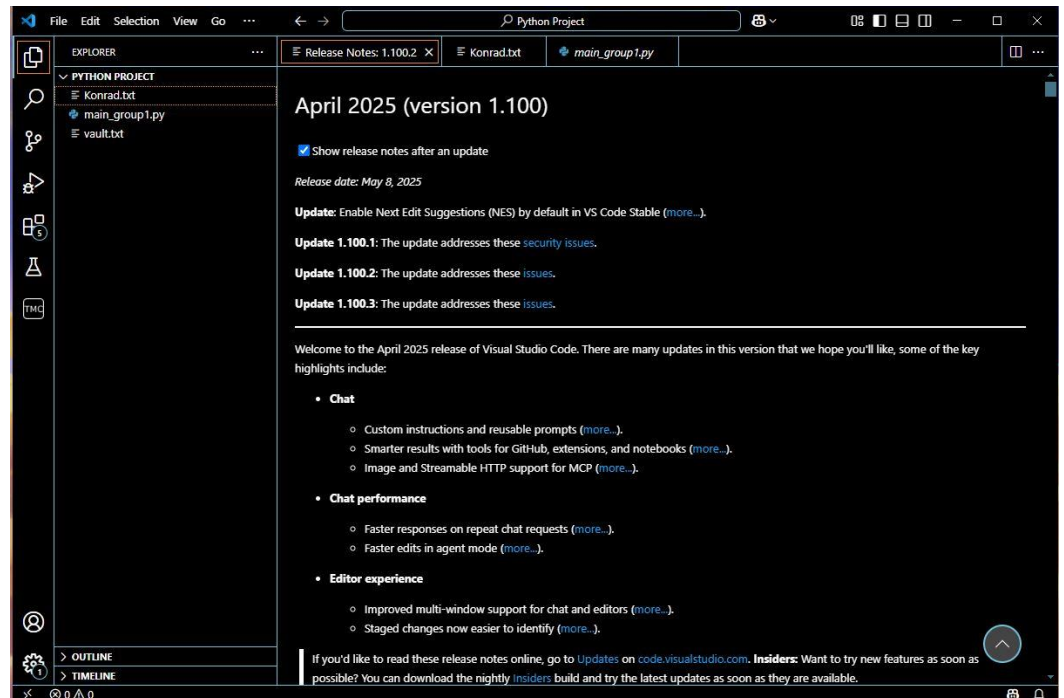


Figure 10 Old version VS Code

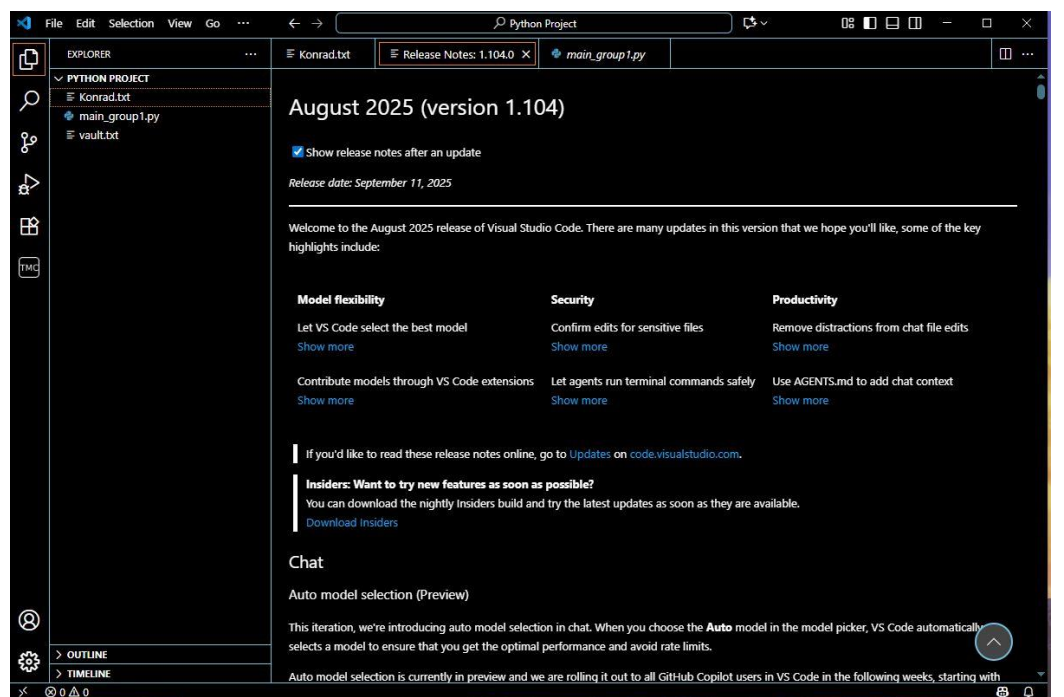


Figure 11 Updated VS Code

5 Installing Java JDK and Adding Environmental Variables

Since I have made my own computer and done fresh installs of most programs, I knew I did not have JDK installed already. However, just to double check if any bloatware from other programs may have downloaded it, I used CMD prompt to check if I had a version, which I did not as shown in the first screenshot. After confirming, I then proceeded to the website link provided and got the latest version which was JDK 24. Everything was selected as default, for an easy installation, with paying attention to the correct path for the files to make the environmental elements step easier. I noticed in the guide provided there was a screenshot of the bin path created as well, but no mention in the actual steps, so since I figured it couldn't ruin the work environment, except provide more access to change if needed I added both paths, and double checked CMD prompt had Java installed as in the last 2 screenshots.

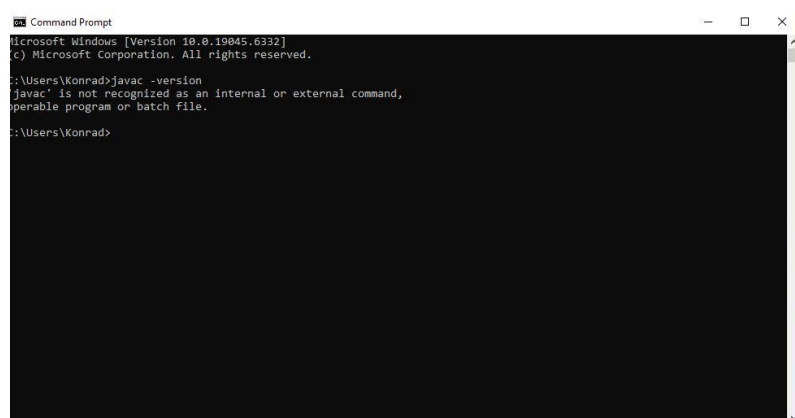


Figure 12 No previous versions of JDK currently in system.

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JDK 24 binaries are free to use in production and free to redistribute, at no cost, under the Oracle No-Fee Terms and Conditions (NFTC).
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Product/File description	File size	Download
x64 Compressed Archive	229.62 MB	https://download.oracle.com/java/24/latest/jdk-24_windows-x64_bin.zip (sha256)
x64 Installer	205.86 MB	https://download.oracle.com/java/24/latest/jdk-24_windows-x64_bin.exe (sha256)
x64 MSI Installer	204.61 MB	https://download.oracle.com/java/24/latest/jdk-24_windows-x64_bin.msi (sha256)

Figure 13 JDK latest version 24

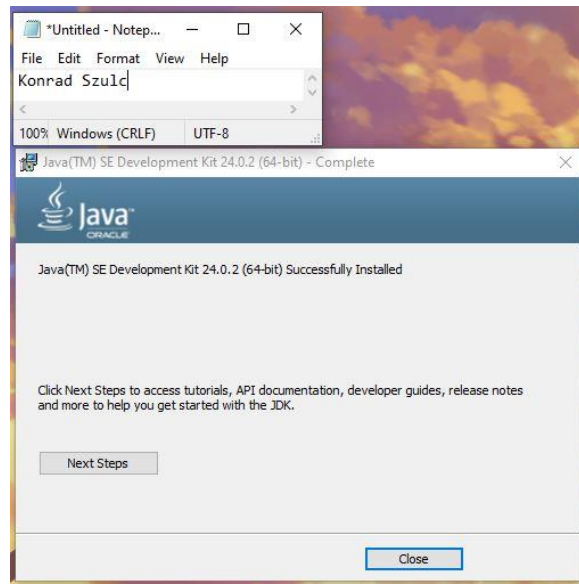


Figure 14 Complete JDK installation

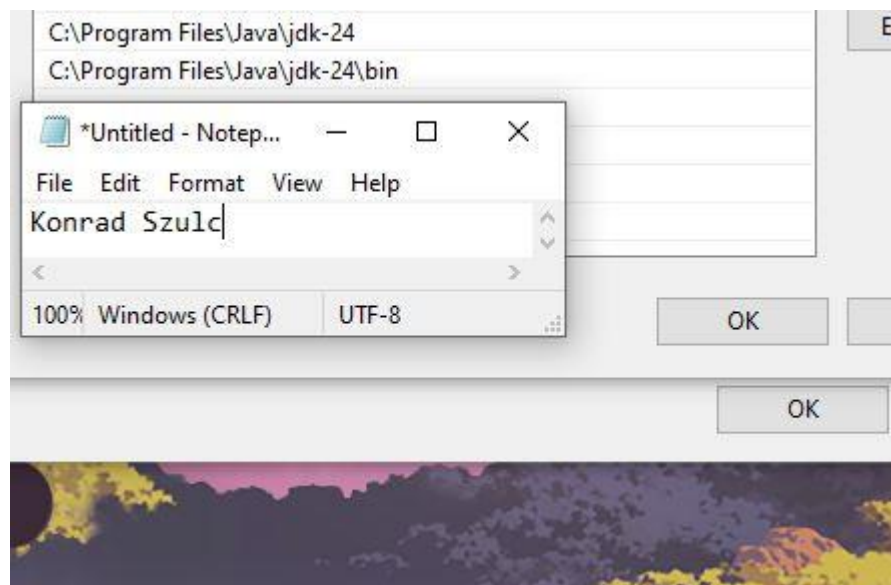
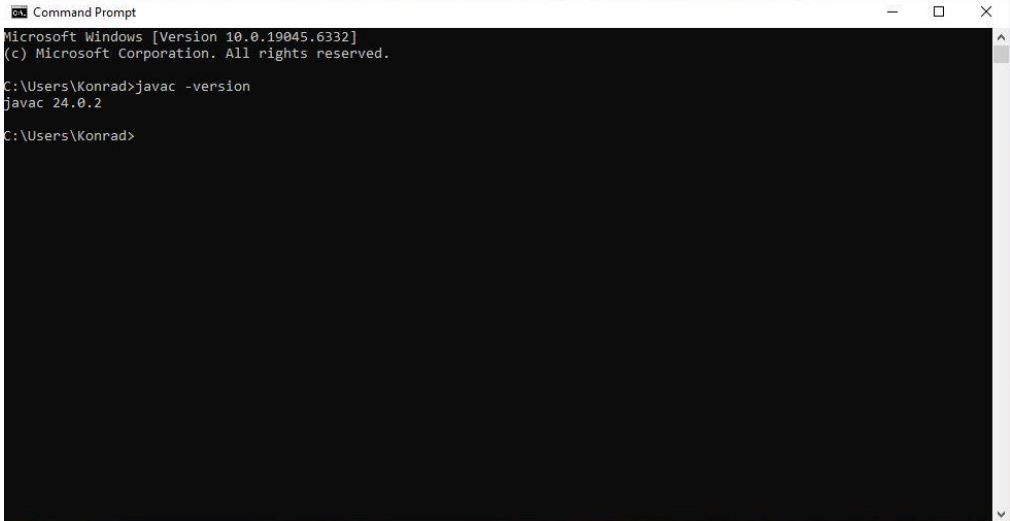


Figure 15 Created 2 pathing for JDK.



```
Command Prompt
Microsoft Windows [Version 10.0.19045.6332]
(c) Microsoft Corporation. All rights reserved.

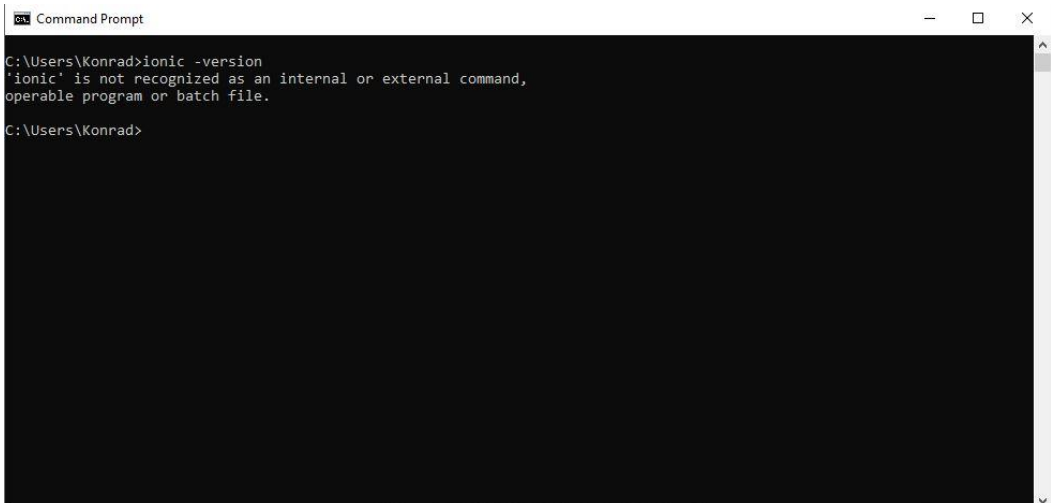
C:\Users\Konrad>javac -version
javac 24.0.2

C:\Users\Konrad>
```

Figure 16 Confirmation of JDK in system.

6 Setting up Ionic and Creating First App

Though I felt confident in most of the program installations, I took extra time with Ionic installation because it was the newest to me installing through CLI. Thus, I took my time to confirm the right commands were used and spelt correctly. As well, checking CMD prompt to make sure there are no other installations with ionic -version. Then being patient during this installation is quite important because there were quite delays in the process, almost feeling like nothing was happening. Nonetheless, eventually the successful prompt came up and I disregarded some of the warnings as shown in the screenshots. Going forward, I created the ionic account and my first base app with the CMD prompt utilizing Ionic, creating more enthusiasm for the rest of the course.

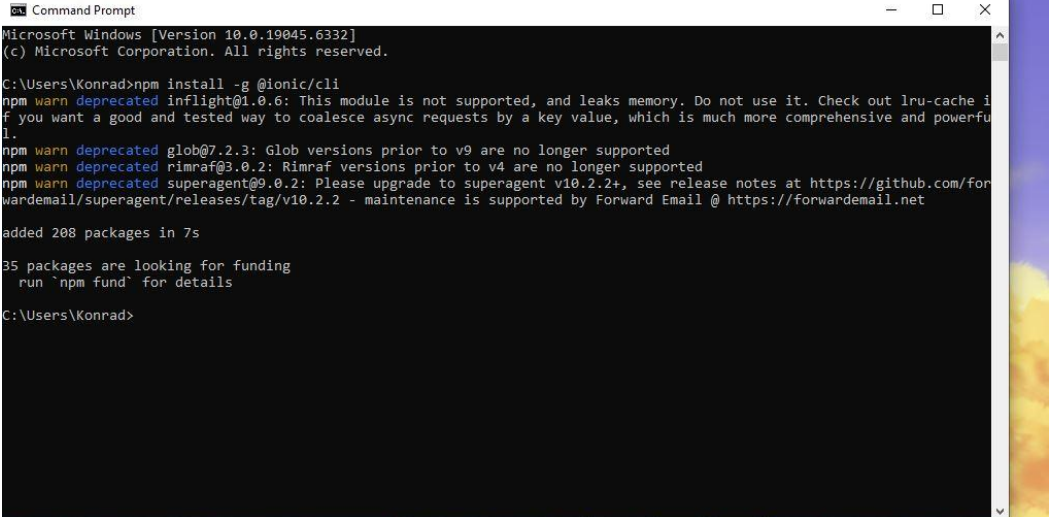


```
Command Prompt

C:\Users\Konrad>ionic -version
'ionic' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\Konrad>
```

Figure 17 no prior Ionic installs.



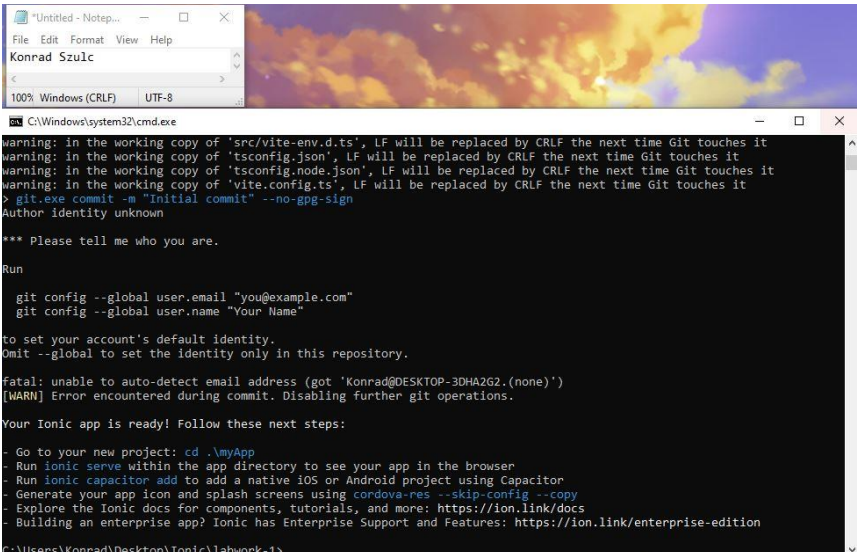
```
Microsoft Windows [Version 10.0.19045.6332]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Konrad>npm install -g @ionic/cli
npm warn deprecated inflight@1.0.6: This module is not supported, and leaks memory. Do not use it. Check out lru-cache if
if you want a good and tested way to coalesce async requests by a key value, which is much more comprehensive and powerfu
1.
npm warn deprecated glob@7.2.3: Glob versions prior to v9 are no longer supported
npm warn deprecated rimraf@3.0.2: Rimraf versions prior to v4 are no longer supported
npm warn deprecated superagent@9.0.2: Please upgrade to superagent v10.2.2+, see release notes at https://github.com/for
wardemail/superagent/releases/tag/v10.2.2 - maintenance is supported by Forward Email @ https://forwardemail.net

added 208 packages in 7s
35 packages are looking for funding
  run `npm fund` for details

C:\Users\Konrad>
```

Figure 18 Package installation, ignoring warnings, and patience.



```
Warning: in the working copy of 'src/vite-env.d.ts', LF will be replaced by CRLF the next time Git touches it
Warning: in the working copy of 'tsconfig.json', LF will be replaced by CRLF the next time Git touches it
Warning: in the working copy of 'tsconfig.node.json', LF will be replaced by CRLF the next time Git touches it
Warning: in the working copy of 'vite.config.ts', LF will be replaced by CRLF the next time Git touches it
> git.exe commit -m "Initial commit" --no-gpg-sign
Author identity unknown

*** Please tell me who you are.

Run

  git config --global user.email "you@example.com"
  git config --global user.name "Your Name"

to set your account's default identity.
Omit --global to set the identity only in this repository.

fatal: unable to auto-detect email address (got 'Konrad@DESKTOP-3DHA2G2.(none)')
[WARN] Error encountered during commit. Disabling further git operations.

Your Ionic app is ready! Follow these next steps:

- Go to your new project: cd .\myApp
- 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\Konrad\Desktop\Ionic\labwork-1>
```

Figure 19 Ionic Installation complete

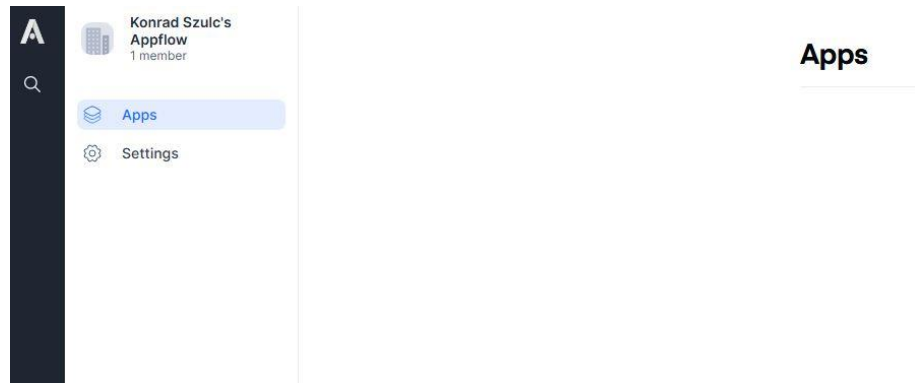


Figure 20 Created Ionic Account

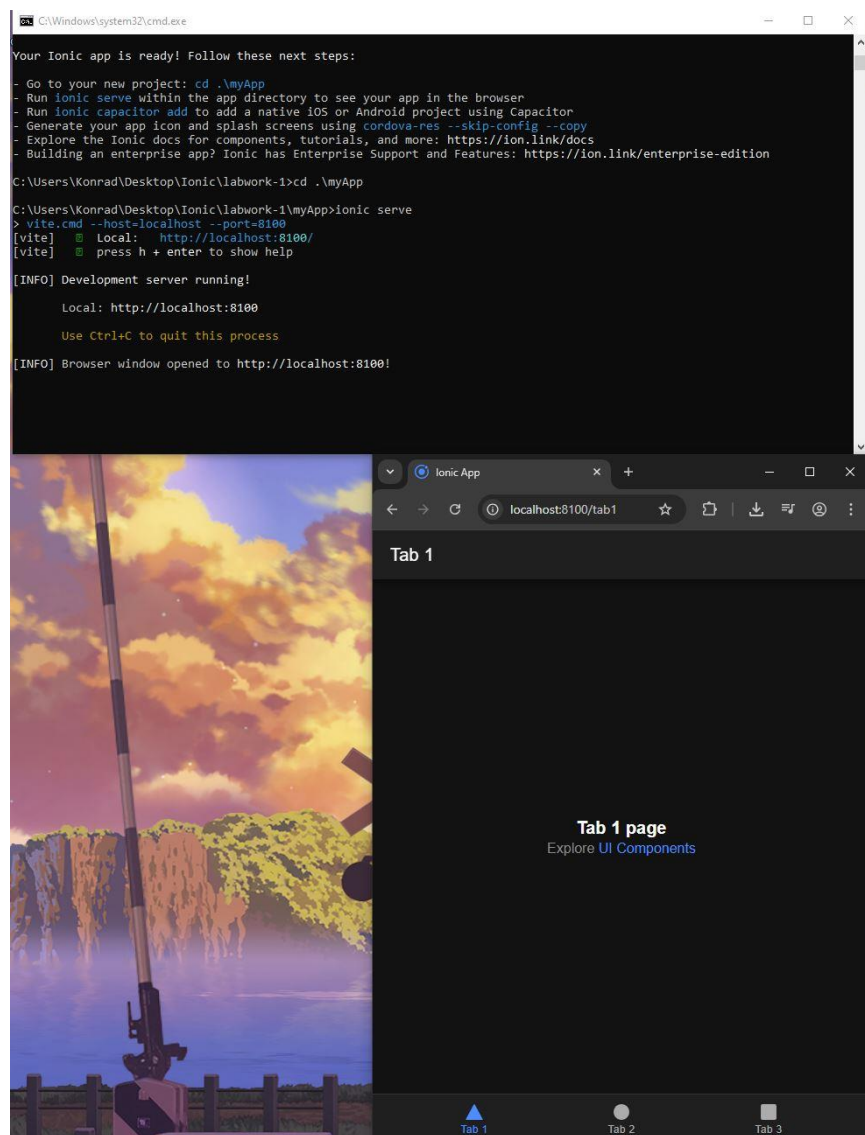


Figure 21 First App created in Ionic.

References

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