



Underbranch

by

The Tater Tots

Ben Knobloch, Lauren Kibalo, Marcos Morales, Noah Spina

[Stevens.edu](https://www.stevens.edu)

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This document provides the instructions for the operation of Underbranch. The following table (Table 1) is updated by authors whenever major changes are made to the architecture design or new components are added. Most recent changes to the document should be seen first and the oldest last.

Table 1: Document Update History

Date	Updates
03/06/2025	BCK: <ul style="list-style-type: none">• Worked on user manual LSK: <ul style="list-style-type: none">• Worked on user manual MAM: <ul style="list-style-type: none">• Worked on user manual NJS: <ul style="list-style-type: none">• Worked on user manual

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Chapter 1

Introduction

– Ben Knobloch, Lauren Kibalo, Marcos Morales, Noah Spina

The leading LaTeX editors are costly and are solely reliant on in-house servers which can slow down the process of developing a document. In addition, they are restrictive with collaboration and other features unless users pay for a costly premium subscription. Students, specifically in software development, software engineers, and scientific or mathematical researchers are all suffering from this problem.

Underbranch is the solution as it is a locally based LaTeX editing software that does not restrict collaboration and does not come with a premium subscription. Users save anywhere between 200–400 on subscriptions for leading LaTeX editors and save time in developing the document due to its local environment.

Chapter 2

Developer Setup

– Ben Knobloch, Lauren Kibalo, Marcos Morales, Noah Spina

2.1 Underbranch Developer Setup

2.1.1 Downloading Docker

Docker is a required for Underbranch to work. Make sure you download Docker Desktop using this [link \(https://www.docker.com/get-started/\)](https://www.docker.com/get-started/) before proceeding. To see installation instructions, follow this [link \(https://docs.docker.com/desktop/setup/install/windows-install/\)](https://docs.docker.com/desktop/setup/install/windows-install/).

2.1.2 Cloning the Repository

To set up your development environment, you'll first need to clone the current Github repository at this [link \(https://github.com/beknobloch/overleaf-toolkit\)](https://github.com/beknobloch/overleaf-toolkit). Make sure to open the repository in an IDE of your choice. Below is a step by step process of running Underbranch in Webstorm (our IDE of choice).

Setup Steps for INITIAL (first time) Setup:

1. Open Webstorm
2. Click "Clone repository"
3. In the "Repository URL" section, copy and paste this link in there (<https://github.com/beknobloch/overleaf-toolkit>)
4. Identify a directory (folder or location on your machine) to save the repository to
5. Click "Clone"

See below for pictures of Setup:

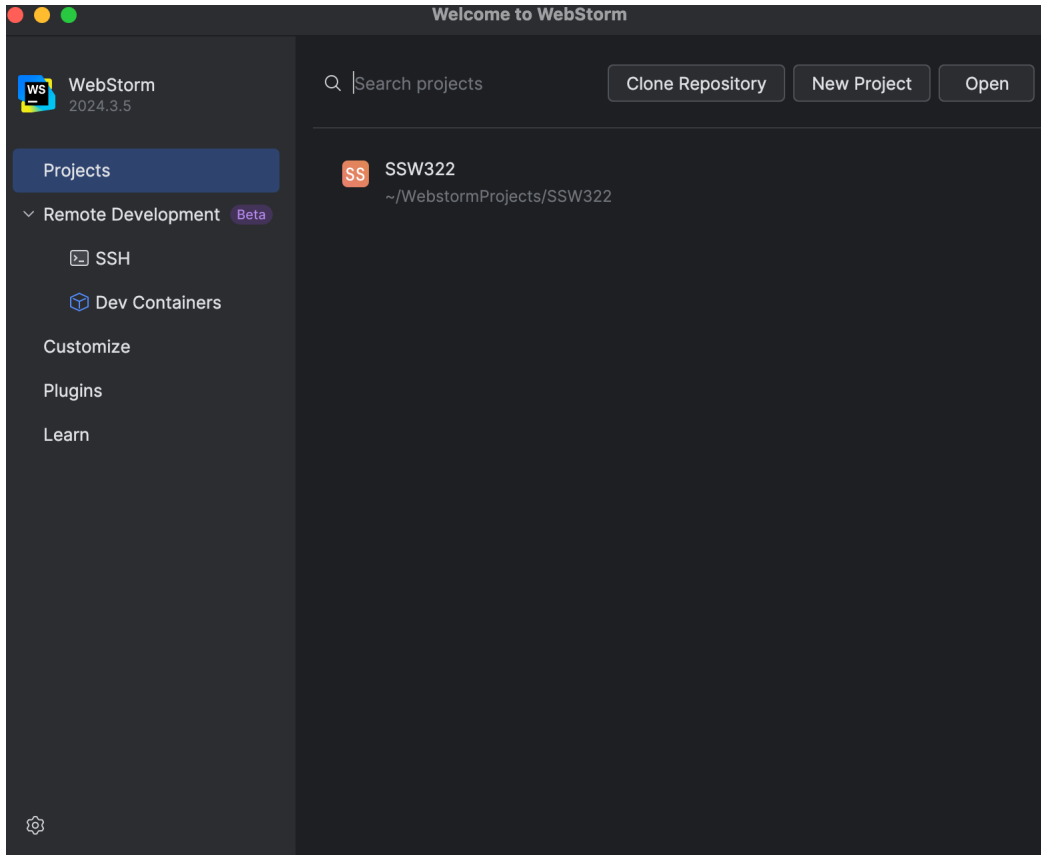


Figure 2.1: Step 1: Opening IDE

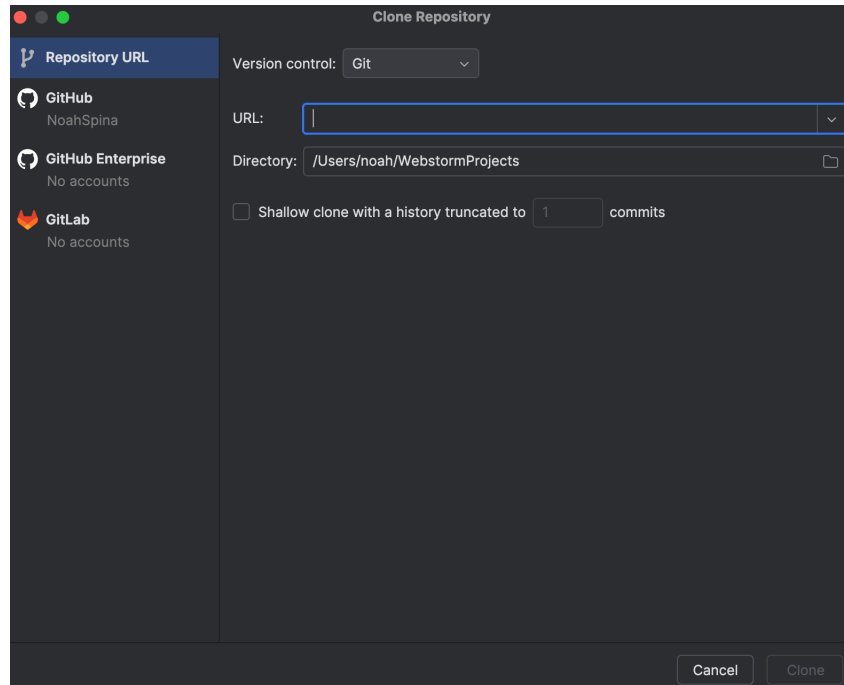


Figure 2.2: Step 2: Clone Repository Section

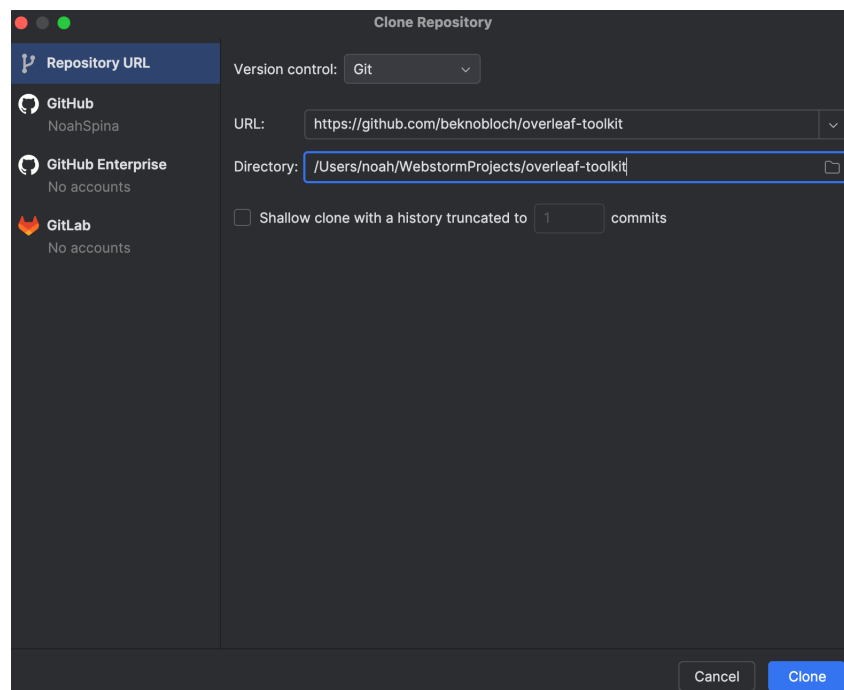


Figure 2.3: Step 3: Adding URL

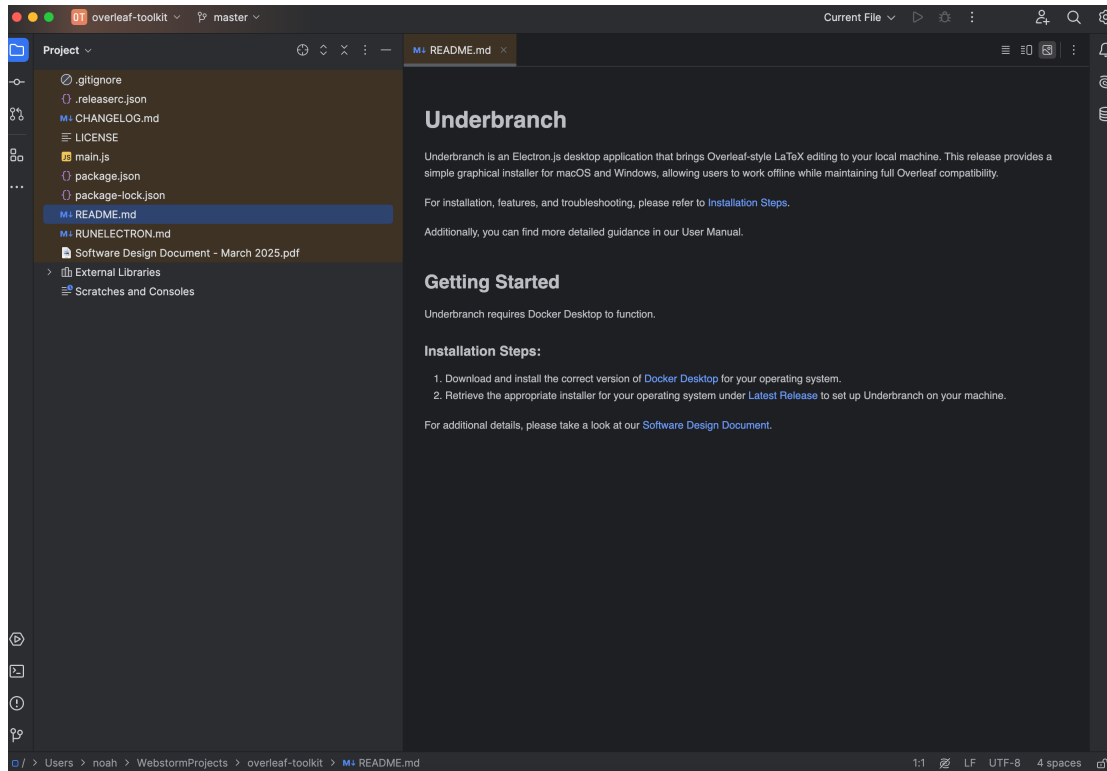


Figure 2.4: Step 6: Open Project

After step 6, feel free to make edits as you wish. Files with the UBR prefix are ones pertaining to Underbranch. `main.js` is the other important file developers will use. Every other file is a clone of the `overleaf-toolkit` library.

To run Underbranch, developers will need to run 3 commands in the terminal. (See above after step 6 or below)

2.1.3 Running Underbranch on MacOS

1 - (if you've built the project) See the following command :

```
1 $ rm -rf node_modules dist
```

2 - See the following command :

```
1 $ npm install
```

3 - See the following command :

```
1 $ npm run build
```

4 - See the following command :

```
1 $ npm start
```

After the fourth command, Underbranch should open in a local window on your computer. See below for pictures:

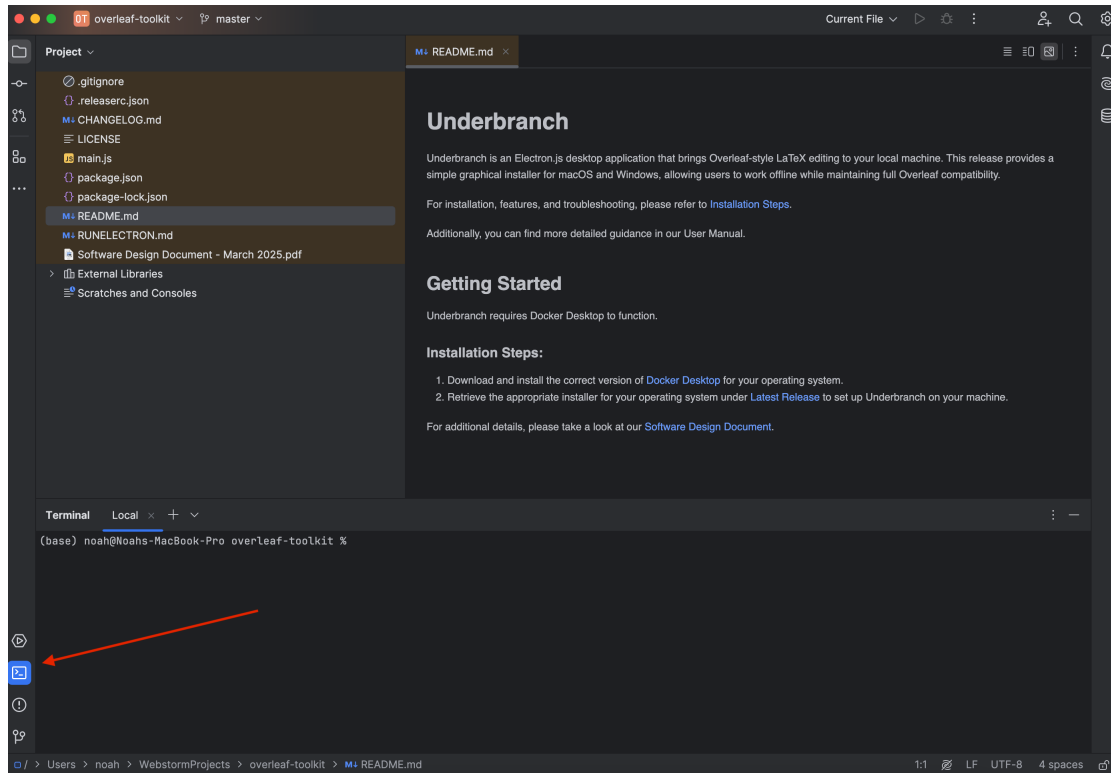


Figure 2.5: Step 0: Opening Terminal

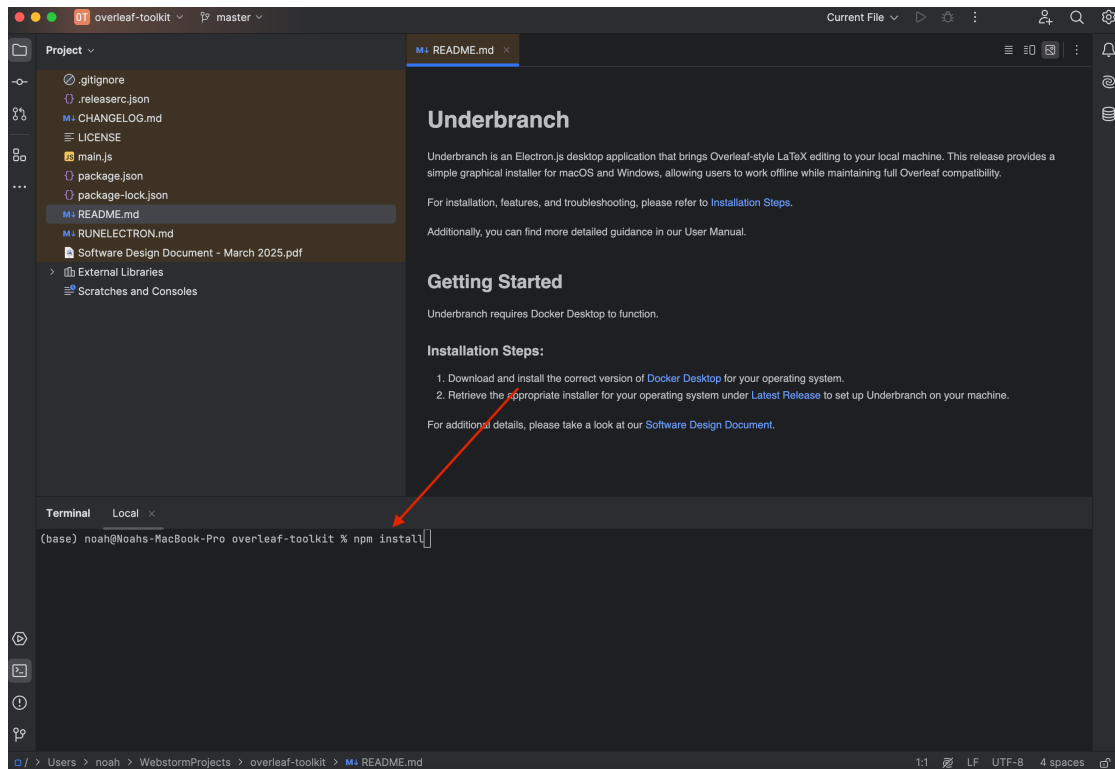
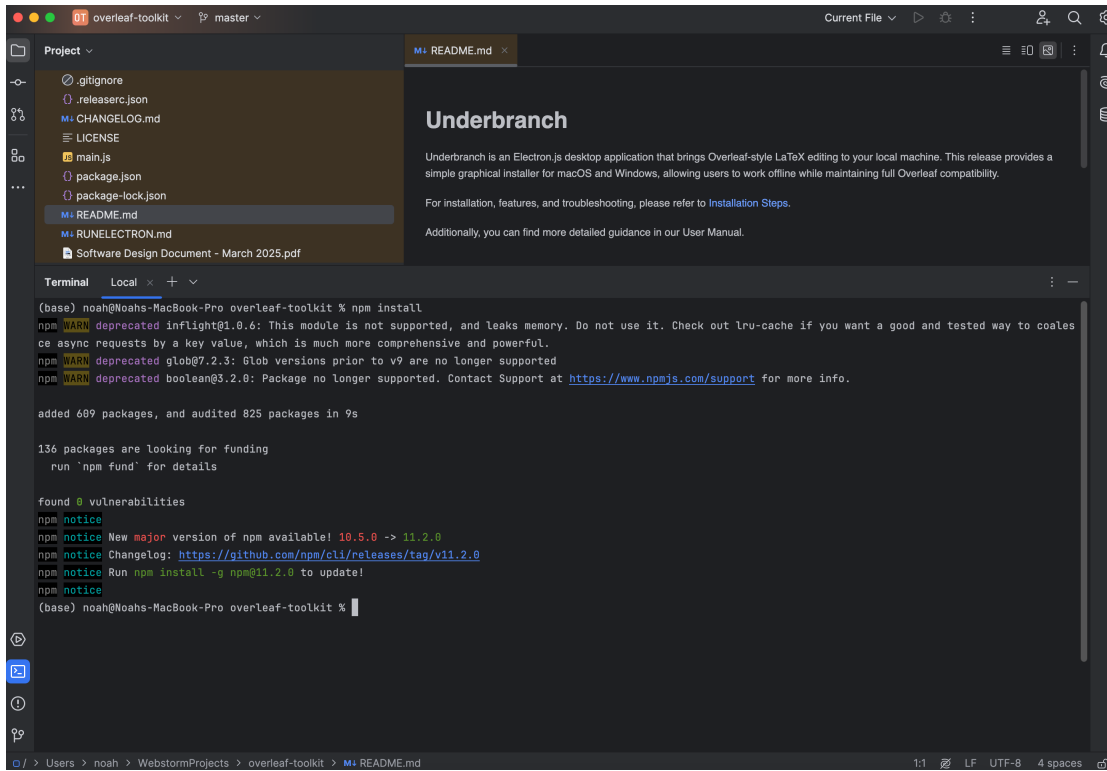


Figure 2.6: Step 2: Running "npm install"



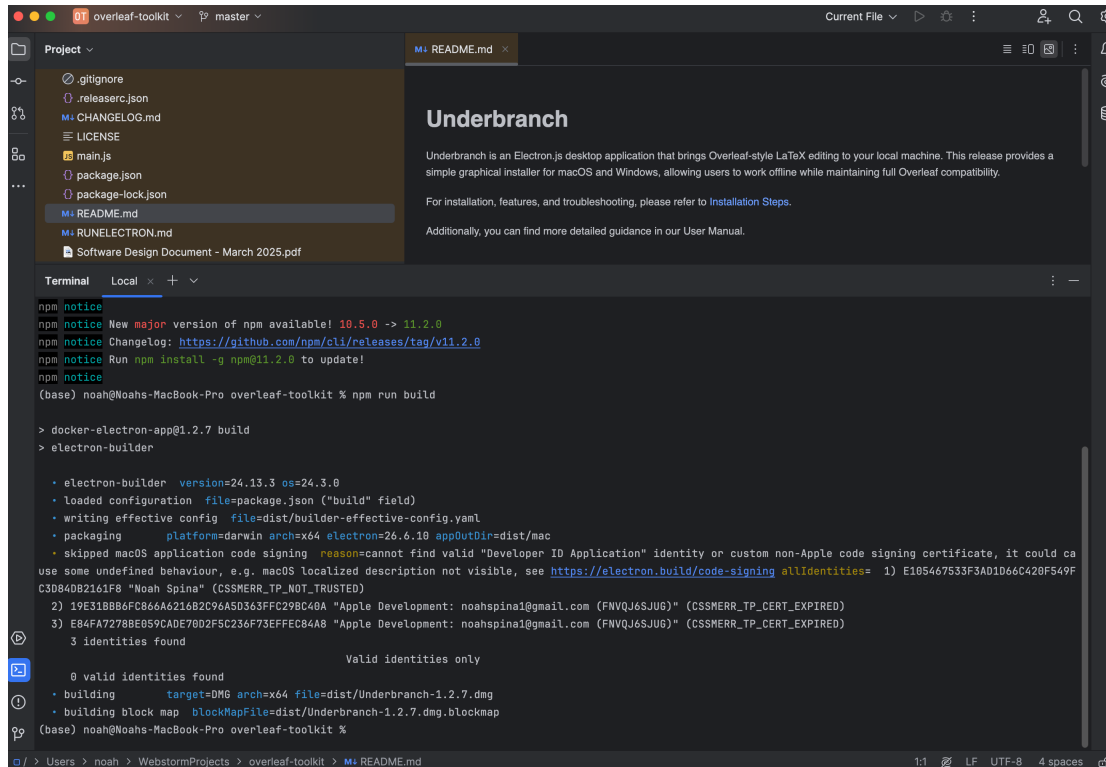
```
(base) noah@Noahs-MacBook-Pro overleaf-toolkit % npm install
npm WARN deprecated inflight@1.0.6: This module is not supported, and leaks memory. Do not use it. Check out lru-cache if you want a good and tested way to coalesce
async requests by a key value, which is much more comprehensive and powerful.
npm WARN deprecated glob@7.2.3: Glob versions prior to v9 are no longer supported
npm WARN deprecated boolean@3.2.0: Package no longer supported. Contact Support at https://www.npmjs.com/support for more info.

added 609 packages, and audited 825 packages in 9s

136 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
npm notice
npm notice New major version of npm available! 10.5.0 -> 11.2.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.2.0
npm notice Run `npm install -g npm@11.2.0` to update!
npm notice
(base) noah@Noahs-MacBook-Pro overleaf-toolkit %
```

Figure 2.7: Step 3: Running "npm run build"



```

Project
├── .gitignore
├── .releaserc.json
├── CHANGELOG.md
├── LICENSE
├── main.js
├── package.json
├── package-lock.json
├── README.md
├── RUNELECTRON.md
└── Software Design Document - March 2025.pdf

Underbranch

Underbranch is an Electron.js desktop application that brings Overleaf-style LaTeX editing to your local machine. This release provides a simple graphical installer for macOS and Windows, allowing users to work offline while maintaining full Overleaf compatibility.

For installation, features, and troubleshooting, please refer to Installation Steps.

Additionally, you can find more detailed guidance in our User Manual.

Terminal
Local
npm notice
npm notice New major version of npm available! 10.5.0 -> 11.2.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.2.0
npm notice Run npm install -g npm@11.2.0 to update!
npm notice
(base) noah@Noahs-MacBook-Pro overleaf-toolkit % npm run build

> docker-electron-app@1.2.7 build
> electron-builder

  electron-builder version=24.13.3 os=24.3.0
  • Loaded configuration file=package.json ("build" field)
  • writing effective config file=dist/builder-effective-config.yaml
  • packaging platform=darwin arch=x64 electron=26.6.10 appOutDir=dist/mac
  • skipped macOS application code signing reason=cannot find valid "Developer ID Application" identity or custom non-Apple code signing certificate, it could ca
use some undefined behaviour, e.g. macOS localized description not visible, see https://electron.build/code-signing allIdentities= 1) E18546753F3AD1D66C420F549F
C3D840B2141F8 "Noah Spina" (CSSMERR_TP_NOT_TRUSTED)
  2) 19E318BB6FC866A6216B2C96A50363FFC298C40A "Apple Development: noahspina1@gmail.com (FNVCJ6SJUG)" (CSSMERR_TP_CERT_EXPIRED)
  3) E84FA7278BE859CADE78D2F5C236F73EFFEC84A8 "Apple Development: noahspina1@gmail.com (FNVCJ6SJUG)" (CSSMERR_TP_CERT_EXPIRED)
  3 identities found

    Valid identities only

    0 valid identities found
  • building target=DMG arch=x64 file=dist/Underbranch-1.2.7.dmg
  • building block map blockMapFile=dist/Underbranch-1.2.7.dmg.blockmap
(base) noah@Noahs-MacBook-Pro overleaf-toolkit %
  
```

Figure 2.8: Step 3.5: See Output for "npm run build"

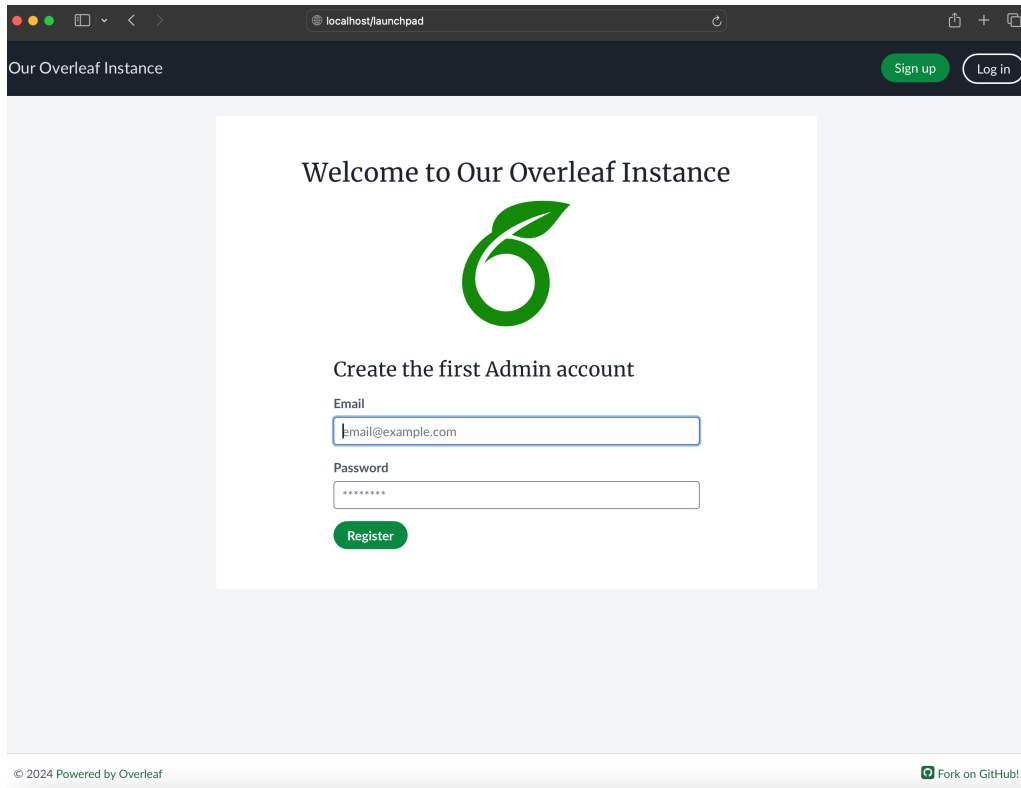


Figure 2.9: Step 4: Running "npm start"

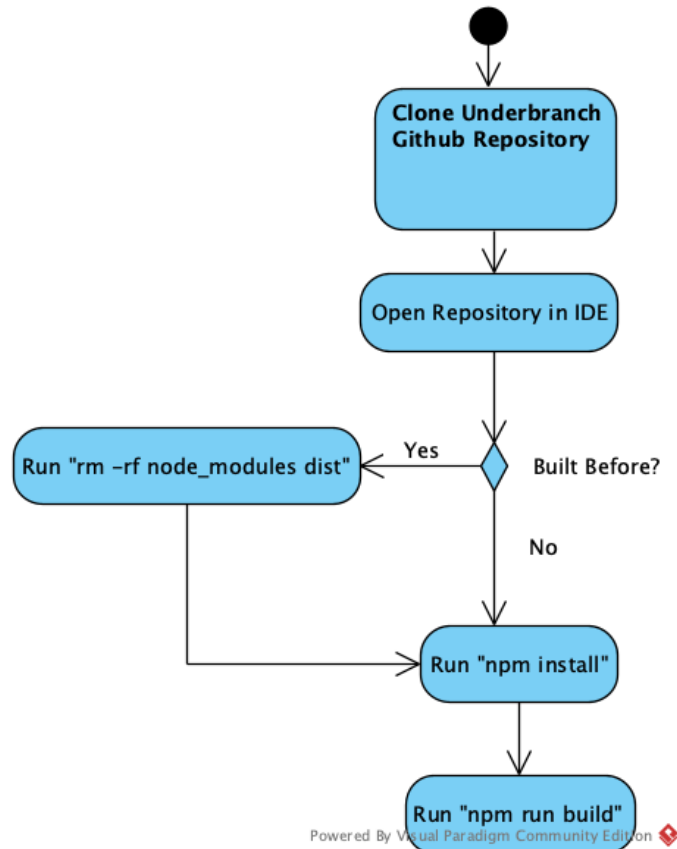


Figure 2.10: Activity diagram for running Underbranch on MacOS.

2.1.4 Running Underbranch on Windows

1 - (if you've never built the project) See the following command :

```
1 $ rm -rf node_modules dist
```

2 - See the following command :

```
1 $ npm install
```

3 - See the following command :

```
1 $ npm run build --win
```

4 - See the following command :

```
1 $ npm start
```

```

C:\Users\laure\Desktop>cd overleaf-toolkit
C:\Users\laure\Desktop\overleaf-toolkit>rm -rf node_modules dist
C:\Users\laure\Desktop\overleaf-toolkit>npm install
npm WARN EBADENGINE Unsupported engine {
npm WARN EBADENGINE   package: '@semantic-release/commit-analyzer@13.0.1',
npm WARN EBADENGINE   required: { node: '>=20.8.1' },
npm WARN EBADENGINE   current: { node: 'v18.18.0', npm: '9.8.1' }
npm WARN EBADENGINE }
npm WARN EBADENGINE Unsupported engine {
npm WARN EBADENGINE   package: '@semantic-release/github@11.0.1',
npm WARN EBADENGINE   required: { node: '>=20.8.1' },
npm WARN EBADENGINE   current: { node: 'v18.18.0', npm: '9.8.1' }
npm WARN EBADENGINE }
npm WARN EBADENGINE Unsupported engine {
npm WARN EBADENGINE   package: '@semantic-release/npm@12.0.1',
npm WARN EBADENGINE   required: { node: '>=20.8.1' },
npm WARN EBADENGINE   current: { node: 'v18.18.0', npm: '9.8.1' }
npm WARN EBADENGINE }
npm WARN EBADENGINE Unsupported engine {
npm WARN EBADENGINE   package: 'execa@9.5.2',
npm WARN EBADENGINE   required: { node: '>=20.5.0 || >=20.8.1' },
npm WARN EBADENGINE   current: { node: 'v18.18.0', npm: '9.8.1' }
npm WARN EBADENGINE }
npm WARN EBADENGINE Unsupported engine {
npm WARN EBADENGINE   package: '@semantic-release/release-notes-generator@14.0.3',
npm WARN EBADENGINE   required: { node: '>=20.8.1' },
npm WARN EBADENGINE   current: { node: 'v18.18.0', npm: '9.8.1' }
npm WARN EBADENGINE }
npm WARN EBADENGINE Unsupported engine {
npm WARN EBADENGINE   package: 'import-from-esm@2.0.0',
npm WARN EBADENGINE   required: { node: '>=18.20.1' },
npm WARN EBADENGINE   current: { node: 'v18.18.0', npm: '9.8.1' }
npm WARN EBADENGINE }
npm WARN EBADENGINE Unsupported engine {
npm WARN EBADENGINE   package: 'semantic-release@24.2.3',
npm WARN EBADENGINE   required: { node: '>=20.8.1' },
npm WARN EBADENGINE   current: { node: 'v18.18.0', npm: '9.8.1' }
npm WARN EBADENGINE }
npm WARN EBADENGINE Unsupported engine {
npm WARN EBADENGINE   package: 'execa@9.5.2',
npm WARN EBADENGINE   required: { node: '>=20.5.0 || >=20.8.1' },
npm WARN EBADENGINE   current: { node: 'v18.18.0', npm: '9.8.1' }
npm WARN EBADENGINE }
npm WARN deprecated inflight@1.0.6: 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 glob@7.2.3: Glob versions prior to v9 are no longer supported
npm WARN deprecated boolean@3.2.0: Package no longer supported. Contact Support at https://www.npmjs.com/support for more info.
added 596 packages, and audited 812 packages in 2m
135 packages are looking for funding
  run `npm fund` for details
found 0 vulnerabilities

```

Figure 2.11: Windows Step 1 and Step 2: Administrator Command Prompt Terminal View

```

C:\Users\laure\Desktop\overleaf-toolkit>npm run build --win
> docker-electron-app@1.2.4 build
> electron-builder

• electron-builder version=24.13.3 os=10.0.19045
• loaded configuration file=package.json ("build" field)
• writing effective config file=dist\builder-effective-config.yaml
• packaging platform=win32 arch=x64 electron=26.6.10 appOutDir=dist\win-unpacked
• building target=MSI arch=x64 file=dist\Underbranch 1.2.4.msi
• building target=nsis file=dist\Underbranch Setup 1.2.4.exe archs=x64 oneClick=false perMachine=true
• building block map blockMapFile=dist\Underbranch Setup 1.2.4.exe.blockmap

C:\Users\laure\Desktop\overleaf-toolkit>

```

Figure 2.12: Windows Step 3: Administrator Command Prompt Terminal View

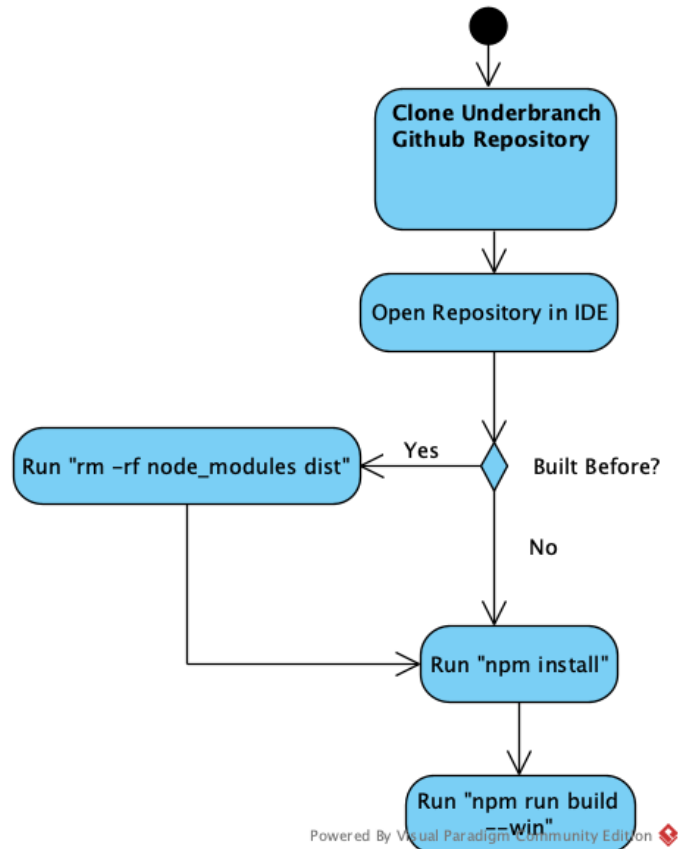


Figure 2.13: Activity diagram for running Underbranch on Windows.

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