Documentation

Motive

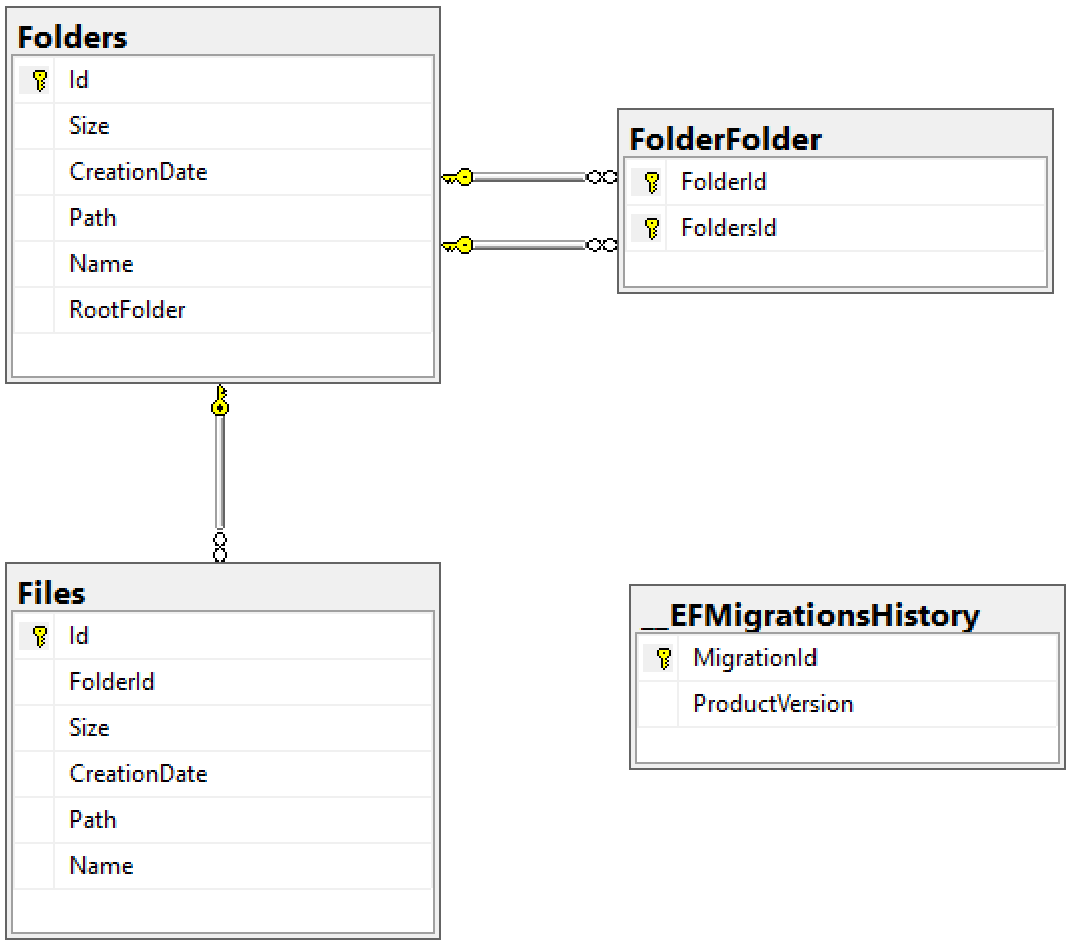
This Tool is made to scan UNC Paths recursively with the following requested features:

1. Scan UNC Paths (Files and Folders) and save the result to the database.
2. display the Top Month with the most and biggest files created in that month.
3. display a bar diagram of the top 10 folders with the biggest sizes.
4. display Tree Structure of the folder.

> Please Note That this document is not a full documentation of the project but snippets from different parts of the project because the time is not enough.

Access Layer

Diagram



Models Notes

- It's worth noticing that a because a folder has folders inside it, it will have to reference itself. this explains the extra FolderFolder table.
- Folders has a rootFolder Field which means only the scanned paths by the user will be marked as RootFolder to simplify the view.

Logic

Path Scanning

To scan the paths I used a Recursive function that register all files and folders.

Top Month (most + biggest files)

Achieved by searching through all folders and registering the needed information and counting the files depending on the month.

> Note: I didn't register the year, because the question is not clear if the month depend on the year or not. Therefore I didn't implement the year but it should be an easy task by adding the year to the `UNCMonthDetails.cs` class and making sure to register the year when searching through the folders.

> Note2: the month name is german, i didn't have time to change the `CultureInfo` to receive the English name instead.

Top 10 Biggest Folders Bar Diagram

Achieved by Sorting only the top level folders after size.

> Note: I didn't took subFolders with the rootLevel folders because all subFolders will have less or same size as it's parent folder.

Folder Tree structure

Achieved by printing the files and folders recursively.

User Interface

I used the C# Console application to display the tool as it is easier to use and setup than a Graphical interface.

To add a beautiful style to the console and make it as interactive as possible without having to spend a lot of time implementing such mechanisms, I Used `Spectre Console`. `Spectre.Console` is an easy to use console library which supports required features like:

1. `Selection Menu` => so the user can choose from a menu instead of having to write the same word to choose a menu option.
2. `Status (Spinner)` => indicate loading of data.
3. `Text Prompt` => Input of a path to scan
4. `Tree` => To display Tree view
5. `Bar Chart` => To display Bar diagram

6. `Markdown` => To easily change style and color of the text.

> Note: I could use Commands to handle the selection menu instead of handling numbers, but creating commands needs more time. (which I don't have)

user Tests

Scan Path

Errors Testing 21.02.2023-14:20

1. Entering Invalid Path like: `test` which will result in a message pointing the user to enter a valid Path.
2. Not existing Path like: `C:\Users\xxx\source\repos\UNCPath\invisible` which doesn't exist will result in a message pointing the user to enter a valid Path.

Success Testing 21.02.2023-14:23

The scan will succeeded when the path is correct. a loading spinner will be displayed and the folders / files will be saved to the database.

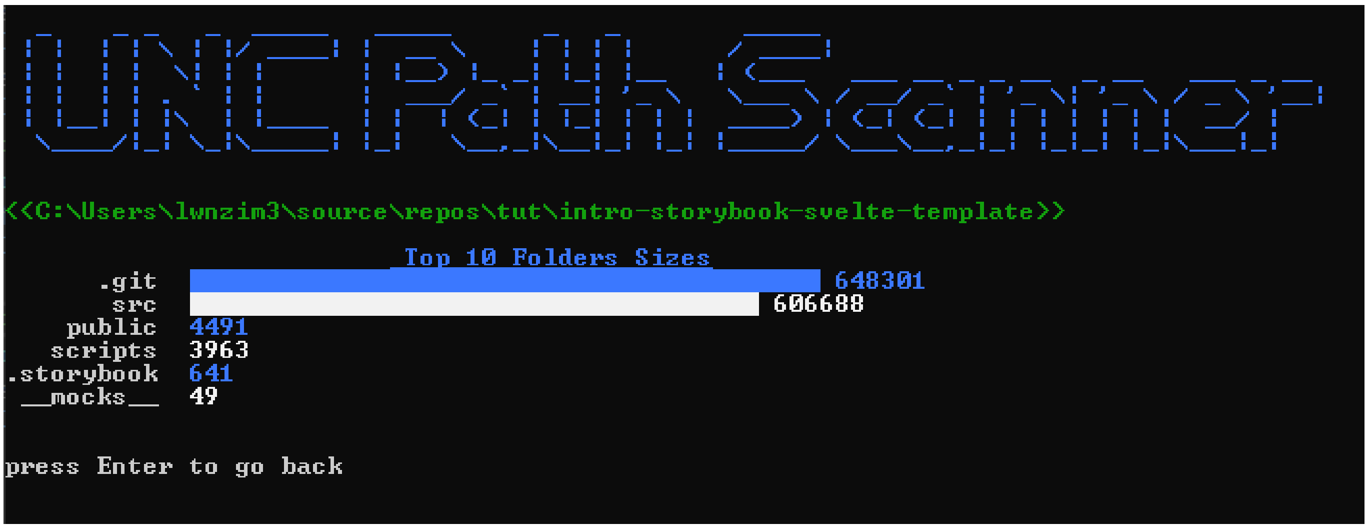
Getting a Path Top Month

Success Testing 21.02.2023-14:26

Received Message: Top Month (size + files created): January

Getting The Bar Diagram

Success Testing 21.02.2023-14:29



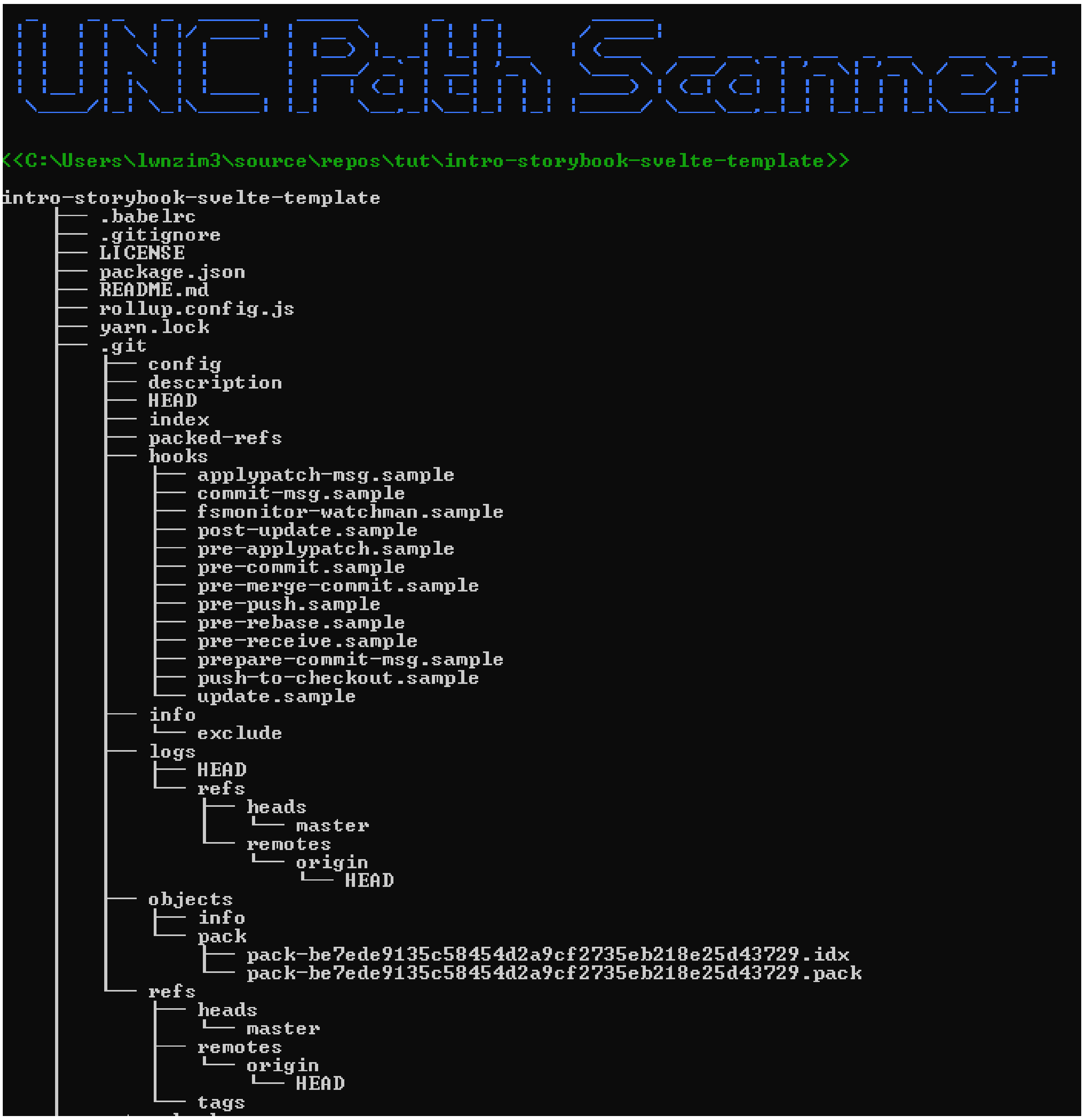
```
<<C:\Users\lwnzim3\source\repos\tut\intro-storybook-svelte-template>>

                        Top 10 Folders Sizes
      .git   ████████████████████████████████████████ 648301
       src   ████████████████████████████████████ 606688
    public   4491
   scripts   3963
.storybook   641
 __mocks__   49

press Enter to go back
```

Getting the Tree structure

Success Testing 21.02.2023-14:39



```
<<C:\Users\lwnzim3\source\repos\tut\intro-storybook-svelte-template>>

intro-storybook-svelte-template
    ├── .babelrc
    ├── .gitignore
    ├── LICENSE
    ├── package.json
    ├── README.md
    ├── rollup.config.js
    ├── yarn.lock
    ├── .git
    │   ├── config
    │   ├── description
    │   ├── HEAD
    │   ├── index
    │   ├── packed-refs
    │   ├── hooks
    │   │   ├── applypatch-msg.sample
    │   │   ├── commit-msg.sample
    │   │   ├── fsmonitor-watchman.sample
    │   │   ├── post-update.sample
    │   │   ├── pre-applypatch.sample
    │   │   ├── pre-commit.sample
    │   │   ├── pre-merge-commit.sample
    │   │   ├── pre-push.sample
    │   │   ├── pre-rebase.sample
    │   │   ├── pre-receive.sample
    │   │   ├── prepare-commit-msg.sample
    │   │   ├── push-to-checkout.sample
    │   │   └── update.sample
    │   ├── info
    │   │   └── exclude
    │   ├── logs
    │   │   ├── HEAD
    │   │   └── refs
    │   │       ├── heads
    │   │       │   └── master
    │   │       └── remotes
    │   │           └── origin
    │   │               └── HEAD
    │   ├── objects
    │   │   ├── info
    │   │   └── pack
    │   │       ├── pack-be7ede9135c58454d2a9cf2735eb218e25d43729.idx
    │   │       └── pack-be7ede9135c58454d2a9cf2735eb218e25d43729.pack
    │   └── refs
    │       ├── heads
    │       │   └── master
    │       ├── remotes
    │       │   └── origin
    │       │       └── HEAD
    │       └── tags
```

Mahmoud Zino