Team Sokka

Integrated Development Tools Project

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Instructor: Bolong Zeng

CptS 423 - Software Design Project II

March 8, 2021

Beta Prototype Description Updates

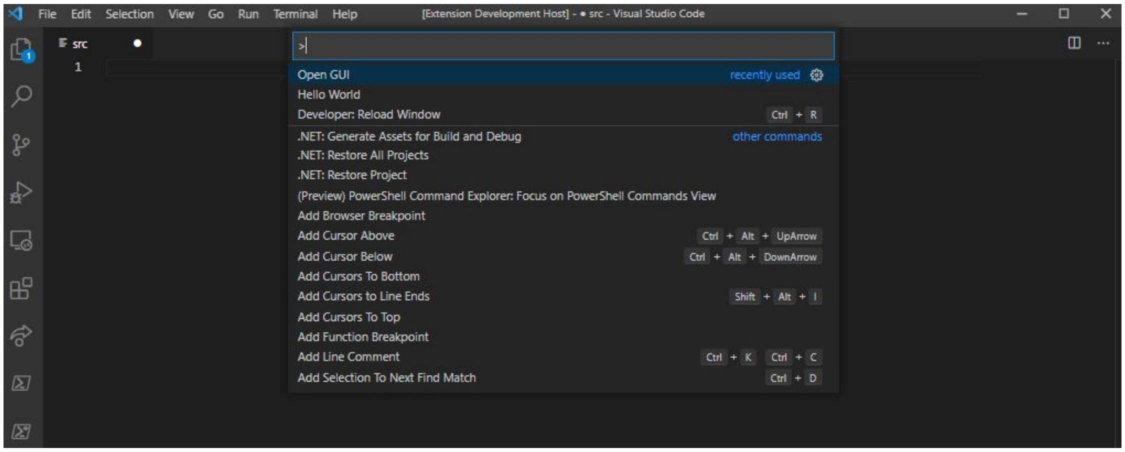
The beta prototype is in a state where the codebase view can be filtered between start/end dates, by authors, files, and commit hashes for commits in the repo where the Codebaseview executable runs in.

- The filtering section of the Codebase View is looking to be expanded to support filtering between multiple repositories and branches.
- Alongside that, the schema must be updated to support queries involving a repository's branches.
- The filtering section of the Codebase View is to allow a user to filter by author between multiple repositories.
- The current user-interface does not have room for this feature and a solution to this problem is to implement tab switching for the filtering section, one tab to filter between a single repository (what is currently the filtering section) and another tab to filter between multiple repositories.
- In order for these filtering features to be functional, there needs to be a way for the user to add multiple repositories to the Codebase View.
  - The proposed solution is to clone repositories in "C:/ProgramData" and parse the repositories from that directory and insert/update into the SQL database which can then provide data to be used by the filter tabs.
- The SQL database will eventually need to be relocated from the user's local machine to a cloud-based database such as AWS' Aurora.
- The CodeBase view currently displays the raw output of the 'git show <commit hash>' and colorizes the line number changes based on the '+' and '-' at the start of each line. The vision is to display line numbers and provide parsed output that only contains the contents of the changed files.

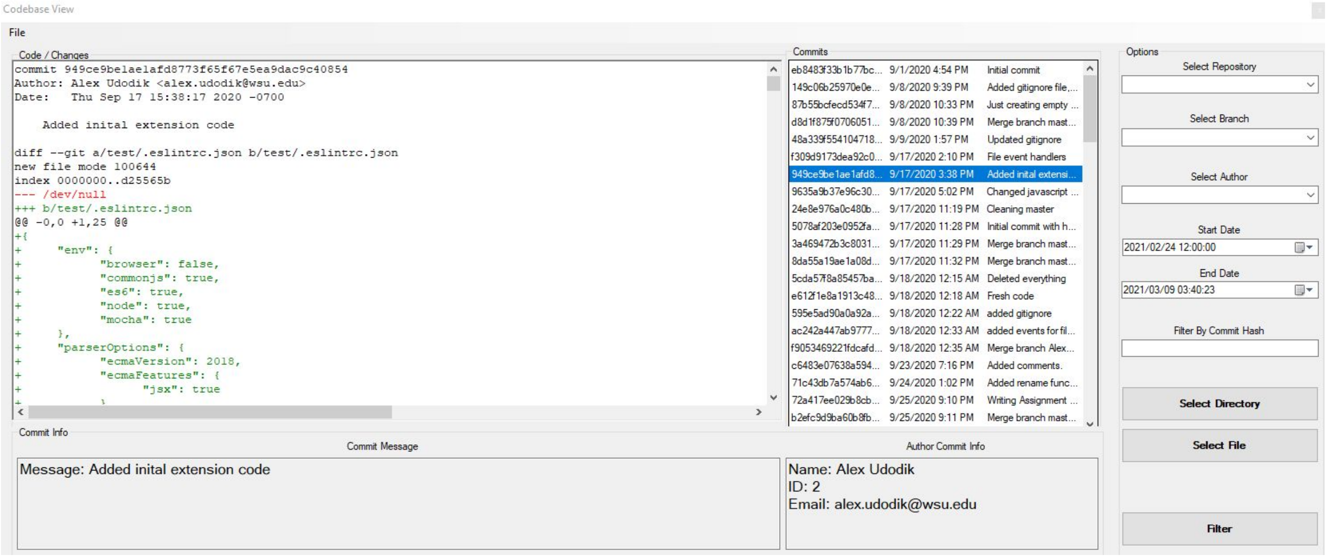
Beta Prototype Test Results

Malachi is the lead on testing, and as a team we're considering specific unit tests to and have done significant acceptance testing to verify our implementation.

- **GUI Components:** The GUI executes all of its features (selecting author, different date ranges, filtering by different commit hashes, and filter button executing all of the filtering) besides the repository selection and branch selection.
- **SQL Filtering:** All queries are executing the correct filtering. The GUI displays the results of the queries. The user can now filter commits from different authors, commit hashes, and different date ranges.
- **Repository & Branch Switching:** The Codebase view only displays the information from the current repository of the application. Does not switch between different branches and repositories.
- **Extension and GUI being launched in one Application** The Visual Studio Code extension has a command that runs an executable which allows users to run the codebase view concurrently with the extension (See Figure 1.0).



<u>Figure 1.0:</u> *Shows that the Visual Studio Code extension now has a command called “Open GUI” that runs an executable which opens the Codebase view.*



```
commit 949ce9be1ae1afd8773f65f67e5ea9dac9c40854
Author: Alex Udodik <alex.udodik@wsu.edu>
Date:   Thu Sep 17 15:38:17 2020 -0700

    Added inital extension code

diff --git a/test/.eslintrc.json b/test/.eslintrc.json
new file mode 100644
index 0000000..d25565b
--- /dev/null
+++ b/test/.eslintrc.json
@@ -0,0 +1,25 @@
+{
+     "env": {
+          "browser": false,
+          "commonjs": true,
+          "es6": true,
+          "node": true,
+          "mocha": true
+     },
+     "parserOptions": {
+          "ecmaVersion": 2018,
+          "ecmaFeatures": {
+               "jsx": true
```

eb8483f33b1b77bc...	9/1/2020 4:54 PM	Initial commit
149c06b25970e0e...	9/8/2020 9:39 PM	Added gitignore file,...
87b55bcfecd534f7...	9/8/2020 10:33 PM	Just creating empty ...
d8d1f875f0706051...	9/8/2020 10:39 PM	Merge branch mast...
48a339f554104718...	9/9/2020 1:57 PM	Updated gitignore
f309d9173dea92c0...	9/17/2020 2:10 PM	File event handlers
949ce9be1ae1afd8...	9/17/2020 3:38 PM	Added inital extensi...
9635a9b37e96c30...	9/17/2020 5:02 PM	Changed javascript ...
24e8e976a0c480b...	9/17/2020 11:19 PM	Cleaning master
5078af203e0952fa...	9/17/2020 11:28 PM	Initial commit with h...
3a469472b3c8031...	9/17/2020 11:29 PM	Merge branch mast...
8da55a19ae1a08d...	9/17/2020 11:32 PM	Merge branch mast...
5cda57f8a85457ba...	9/18/2020 12:15 AM	Deleted everything
e612f1e8a1913c48...	9/18/2020 12:18 AM	Fresh code
595e5ad90a0a92a...	9/18/2020 12:22 AM	added gitignore
ac242a447ab9777...	9/18/2020 12:33 AM	added events for fil...
f9053469221fdcafd...	9/18/2020 12:35 AM	Merge branch Alex...
c6483e07638a594...	9/23/2020 7:16 PM	Added comments.
71c43db7a574ab6...	9/24/2020 1:02 PM	Added rename func...
72a417ee029b8cb...	9/25/2020 9:10 PM	Writing Assignment ...
b2efc9d9ba60b8fb...	9/25/2020 9:11 PM	Merge branch mast...

Start Date: 2021/02/24 12:00:00

End Date: 2021/03/09 03:40:23

Filter By Commit Hash:

Message: Added inital extension code

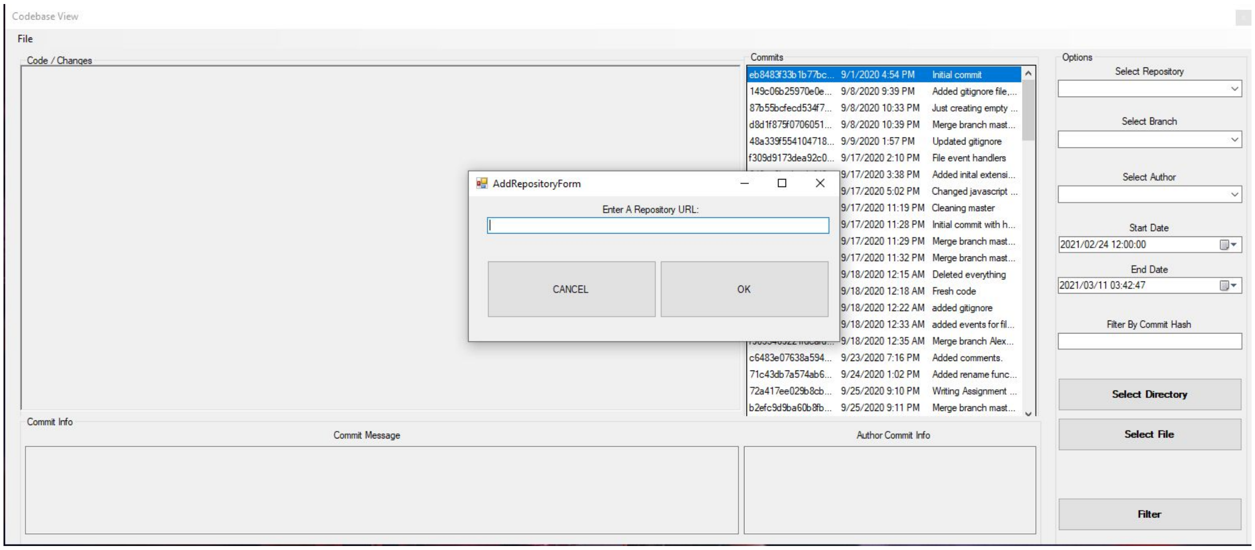
Name: Alex Udodik
ID: 2
Email: alex.udodik@wsu.edu

<u>Figure 2.0:</u> *Shows the changed GUI design, with new options on the right-hand side, and showing all the changes to code on the left-hand side*

<u>Beta Prototype Validation Results</u>

- **<u>GUI Components:</u>** The GUI is approaching completion, and is designed to give the user a clear and easy to use experience. The GUI includes a large window showing code changes with red or green coloring to show lines that have been added/removed. This output window clearly shows the user relevant code changes for a specific commit. To the right of the code changes is a list of commits that each show their commit hash, date, and commit message. This list of commits allows the user to quickly scroll through commits to find a commit of interest. Further changes will still need to be made to some of the GUI elements to help with overall usability.
- **<u>SQL Filtering:</u>** Currently the user can filter commits from different authors, commit hashes, and different date ranges and the GUI properly updates to show the user the results of the query.

- **Repository & Branch Switching:** The user cannot currently switch between different repositories and branches, it only shows commits from the local repository. The codebase view can add repositories to the program data folder (see Figure 3.0), but does not display that repository's commits to the GUI, or add repository information to the database. We are planning to add a new table to our database schema that tracks branches. This will enable the user to switch between branches and further improve repository features.
- **Extension and GUI being launched in one application:** The extension now has an “Open GUI” command which now has the codebase view running along with the extension. Connecting the GUI to the extension makes it much easier for the user to use both the extension and the GUI simultaneously.

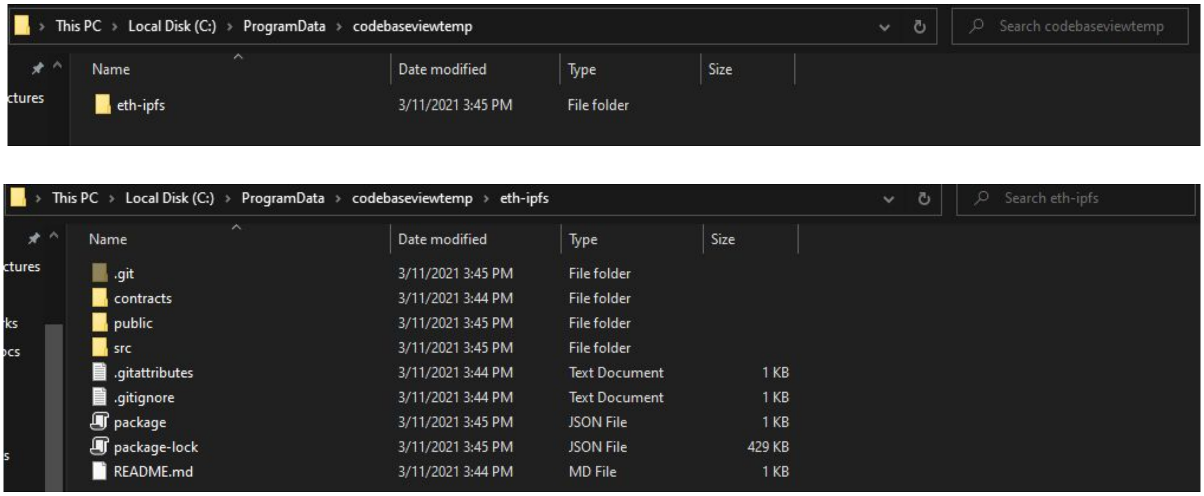


Start Date: 2021/02/24 12:00:00

End Date: 2021/03/11 03:42:47

eb8483f33b1b77bc...	9/1/2020 4:54 PM	Initial commit
149c06b25970e0e...	9/8/2020 9:39 PM	Added gitignore file,...
87b55bcfecd534f7...	9/8/2020 10:33 PM	Just creating empty ...
d8d1f875f0706051...	9/8/2020 10:39 PM	Merge branch mast...
48a339f554104718...	9/9/2020 1:57 PM	Updated gitignore
f309d9173dea92c0...	9/17/2020 2:10 PM	File event handlers
	9/17/2020 3:38 PM	Added inital extensi...
	9/17/2020 5:02 PM	Changed javascript ...
	9/17/2020 11:19 PM	Cleaning master
	9/17/2020 11:28 PM	Initial commit with h...
	9/17/2020 11:29 PM	Merge branch mast...
	9/17/2020 11:32 PM	Merge branch mast...
	9/18/2020 12:15 AM	Deleted everything
	9/18/2020 12:18 AM	Fresh code
	9/18/2020 12:22 AM	added gitignore
	9/18/2020 12:33 AM	added events for fil...
[illegible]	9/18/2020 12:35 AM	Merge branch Alex...
c6483e07638a594...	9/23/2020 7:16 PM	Added comments.
71c43db7a574ab6...	9/24/2020 1:02 PM	Added rename func...
72a417ee029b8cb...	9/25/2020 9:10 PM	Writing Assignment ...
b2efc9d9ba60b8fb...	9/25/2020 9:11 PM	Merge branch mast...

Figure 3.0: *Shows that a separate window that opens when the user selects the “add repository” button.*



This PC > Local Disk (C:) > ProgramData > codebaseviewtemp

Name	Date modified	Type	Size
eth-ipfs	3/11/2021 3:45 PM	File folder	

This PC > Local Disk (C:) > ProgramData > codebaseviewtemp > eth-ipfs

Name	Date modified	Type	Size
.git	3/11/2021 3:45 PM	File folder	
contracts	3/11/2021 3:44 PM	File folder	
public	3/11/2021 3:45 PM	File folder	
src	3/11/2021 3:45 PM	File folder	
.gitattributes	3/11/2021 3:44 PM	Text Document	1 KB
.gitignore	3/11/2021 3:44 PM	Text Document	1 KB
package	3/11/2021 3:45 PM	JSON File	1 KB
package-lock	3/11/2021 3:45 PM	JSON File	429 KB
README.md	3/11/2021 3:44 PM	MD File	1 KB

Figure 4.0: *Shows that a repository was cloned into the program data folder under “codebaseviewtemp” and showing all of the items within the cloned repository.*

Summary of Work Remaining This Semester

- **GUI:** The GUI can perform most of its main features, the GUI can filter between different authors, filter through different commit hashes, allows the user to copy the commit hash, filter commits within different date ranges, as well as cloning a repository in the program data folder. The remaining work for the GUI is being able to switch between different repositories and show commits from that selected repository, fix the hanging commit problem (if a huge commit is selected, it freezes the codebase view), and being able to switch between branches from that repository and see the commits from the selected branch.
- **Repository / Branch Switching & Filtering:** Repositories can only be cloned into the program data folder. What is left is to add those repositories to the database along with its commits and branches. So users can switch between different repositories along with that repository's branches. The plan is to create another data table in the database that tracks branches mapped to different repositories.
- **SQL Schema:** The current schema currently supports authors, files, commits within multiple repositories. The schema will be expanded upon to support multiple branches within a particular repository.
- **API Development:** The API only has a rough sketch of what it can potentially be. Right now, the main focus is to finish the codebase view and work on the API after. The main plan for the API is still to research how it will function with the extension and code base view as well as using the windows event log to monitor all of the events that happen when the extension and the codebase view are being used. The log will be the main data for the API. Which will track how much the extension and code base view are being used.