VisualGit: An Easy-to-Use Desktop Client for Git

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Project 86

Background

Managing different versions of files in a project can be very frustrating, especially when co-ordinating within a large team. Version Control Systems (VCS's) were created to enable software teams to work collaboratively on the same project. Git has quickly become the industry standard VCS, making it a crucial tool for all Software Engineering and Computer Science students to learn before graduating.

Git Clients were created to help smooth the steep learning curve of Git, but they are not aimed at students. They have many complex features which make them intimidating to learn, and lack visualisations to help understand what part of the project you are working on and how it has changed over time.

Student Survey

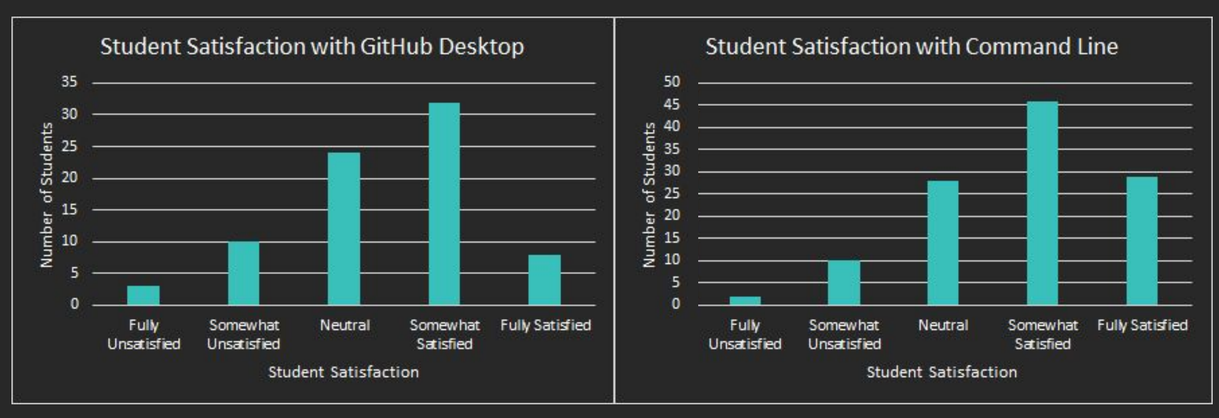
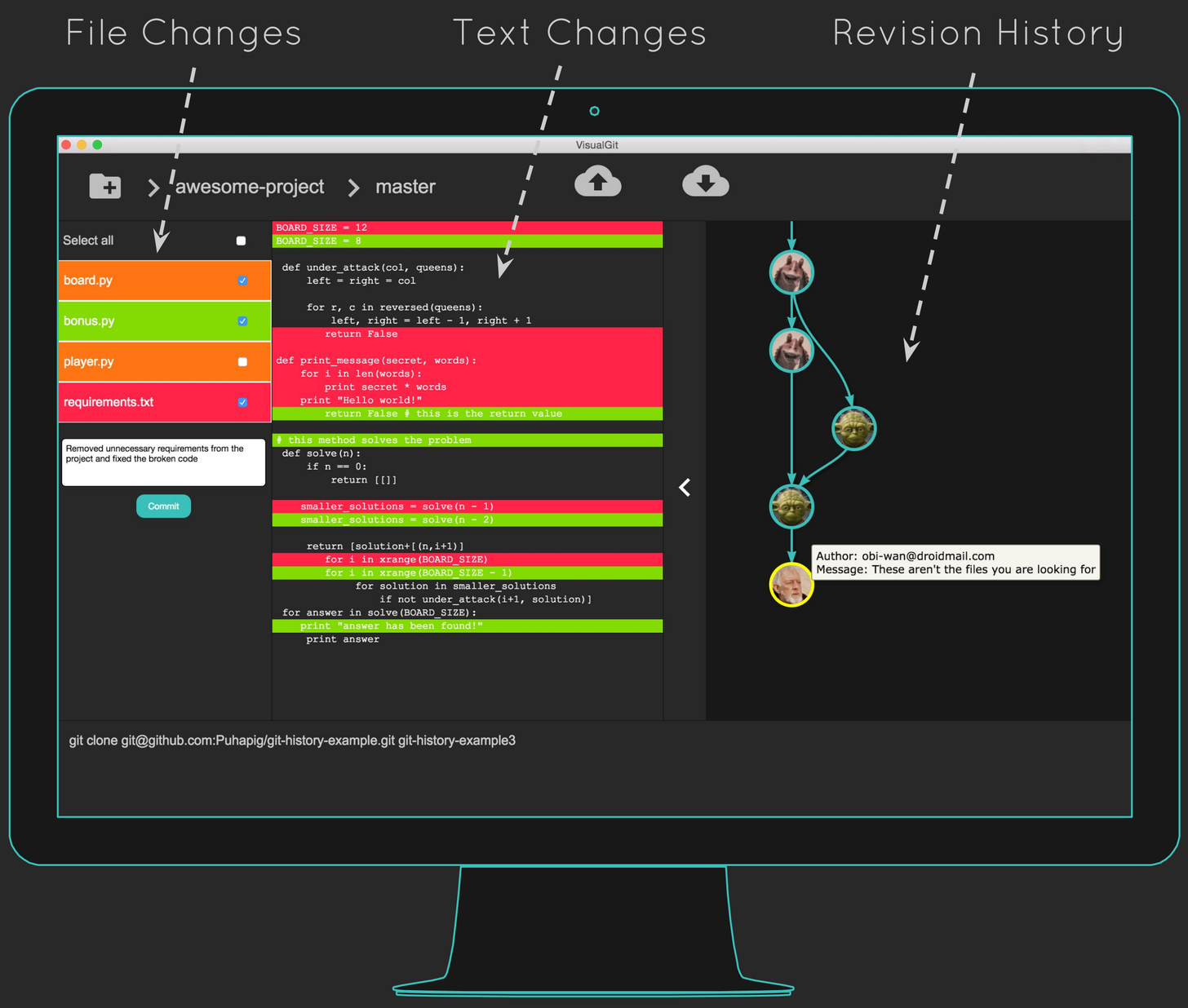


Fig 1. Student satisfaction with popular Git tools - survey conducted on over 150 Software Engineering and Computer Science students. Results show that students prefer using the Command Line over popular Git clients.

"Students prefer using the Command Line over popular Git clients that were specifically created to help beginners understand Git - there needs to be a better solution."



Our Solution

VisualGit is a lightweight, visually-oriented desktop Git client that aims to smooth out the learning curve for using Git. We present Git in a basic, simple way aimed at accommodating beginners and students before they enter the workplace. Our application is designed to work alongside other editors as a review stage before saving work revisions and sharing them with others.

Features

File Changes

Changes to files since the last revision (commit) are shown on the left column, with different colours used to distinguish between different types of changes:

- *Green - Added*
- *Orange - Modified*
- *Red - Deleted*

Text Changes

This panel shows the difference in lines added and lines deleted when a specific file is selected. It allows users to see the specific changes that were made line by line.

Revision History

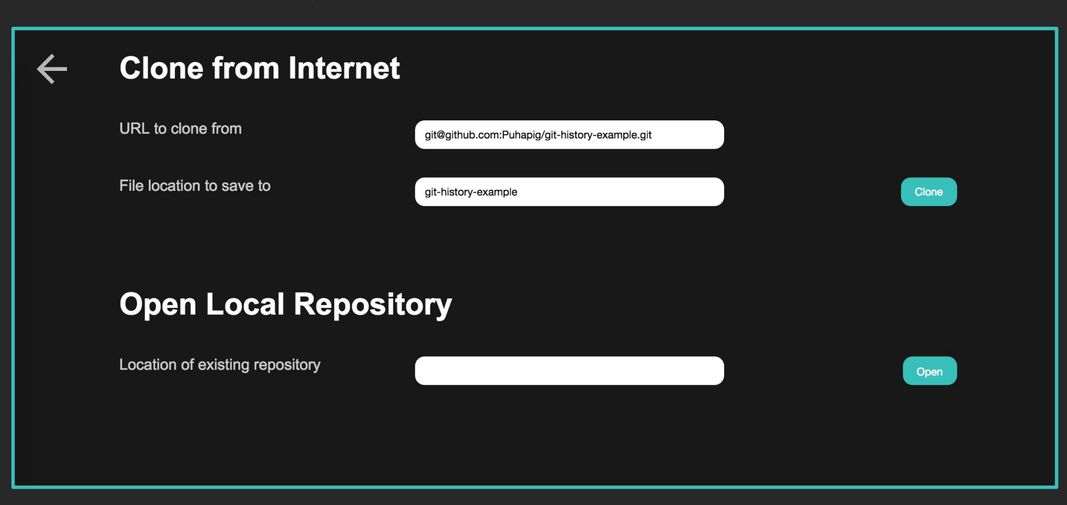
The graph panel shows the revisions (commits) which have been made. It allows users to see the history of changes in a visual manner which will simplify understanding of changes over time.

When changes are committed, the graph will update with the new node and it can be pushed to a remote repository to be shared with others.

Add/Open Repository

Clone a new repository or add an existing one.

Add/Open Repository Screen



Conclusions

VisualGit can be an incredibly valuable tool for students and beginners who are working on their first projects using Git. It is an ideal 'first step' while learning to use Version Control Systems (VCS's)

By using VisualGit, users will develop confidence using Git and collaborating in real-time with others. This will benefit them in their future careers and personal development.

Future Work

The current VisualGit client shows what a beginner-targeted Git client could look like.

Future development would focus on covering some of Git's slightly more advanced features (e.g. branching and rebasing), while preserving the client's visual appeal and clarity.

VisualGit

Developed with:

ELECTRON

node.js

nodegit

HTML JS CSS

Image Credits
GitHub: https://octodex.github.com/images/octobiwan.jpg