Phase I
Project Scoping

Deliverable 1

1.1 GitHub - An Overview

GitHub is a collaborative site for sharing and working on software projects based around the *Git Version Control System.* It is beneficial when used individually or as a group as it allows for members to use a web-based graphical interface to interact with the command line tool git.

Github's advantages are its ability to provide easy interaction between members working on the same project, and its ease of use compared to working from the command line. Github allows for easy management of wikis, bug tracking and feature requests.

GitHub allows for the sharing of small code snippets (Gists) which act like normal repositories, so that they can be changed by the author (managed by Git version control on the website) and forked (making a separate copy of the project) by other users. Users are able to make changes to their projects locally and then push their changes to GitHub, but also can make changes directly on GitHub.

Deliverable 2

2.1 Vision Statement

To create a website which interfaces with GitHub's API that allows more advanced searching of repositories and improves a user's experience of viewing a project, both in an overview manner and in a more detailed view, linking relevant sections of code with documentation from the project's wiki

2.2 General Goals

- Develop an advanced search system to find more readily available contributable open source projects.

- Provide and display in an intuitive way enough relevant information such as average input per contributor and merges to aid users with choosing new open source projects.

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2.3   Group/Team Goals

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2.4   Individual Team Member Goals

1. Josh -

2. Daniel - Develop a system to aid users in selecting a project by display relevant statistics such as average input per contributor.

3. Paul -

4. Sanjay - Implementing methods for connecting functions from user code to the wiki. Also to oversee development of our project documentation using LaTeX .

5. Robert -

Deliverable 3

3.1   Problem Statements

At the current state, GitHub:

1. Does not have more advanced searching of repositories to find more readily contributable open source projects.

2. Does not display enough statistics (e.g. Average input per contributor) to aid with choosing a new project.

3. Does not have a visual way to view a whole project (e.g. how all the classes/files interact, UML diagrams generated from code).

4. Does not link documentation from a repository's wiki with the relevant functions/lines in the project's code.

5. Does not allow functions/blocks of code to be collapsed for easy targeted viewing online.

3.2   Inference for Problem Statements

Inference for our problem statements stemmed from previous work and experience with GitHub. With a moderate level of knowledge of GitHub, we were able to identify a lack of features prevalent within usage of the system. Those of us who had lacked experience with usage of GitHub were quick to investigate and understand some important features to be missing.

Our first problem statement was brought up as a way to encourage younger or novice programmers to take part in contribution to open-source projects. Finding and aiding in projects that are large, cumbersome and complex are oft-not viable for programmers starting out in the field. Hence we proposed developing a more refined search feature that allows to find more readily contributable open source projects. Essentially, we would be enhancing resources available for the user.

The lack of a diverse set of statistics (such as average contribution per user) was a driving factor for our second problem statement, complementing our first problem statement. The availability of a greater set of statistical resources would be beneficial to aid individuals in finding suitable projects to work on. This was our inference for our second problem statement.

We also observed, explored and identified the absence of a visual aspect within the GitHub system. We realised the lack of a holistic view of code on GitHub. Previous work with software development prompted us to understand the need for a more visual aspect to viewing the relationships, connections and associations with other files in the repository.

The absence of a link between *code*, (be it the functions within the code or only certain lines of code) and its respective *documentation* was also another feature which we believe would he helpful. Prior work with coding and looking up relevant documentation for a function prompted us to list this fourth problem statement.

Our final statement was also another visual aspect. Once again, due to previous coding experience we realised the ability to collapse sections of code would provide a more pleasing, aesthetic look. As opposed to a large, clumsy, confusing code layout, we believe this feature would allow the end-user to focus their attention on a particular section.

All in all, we derived the essence of our problem statements based upon problems that we had previously encountered. We also formulated the problem statements for features and resources that we believed would enhance the user experience of the GitHub system.