

Assignment 9

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Introduction

Chaoss is an open source project dedicated to monitoring the health of other open source projects. It can be very difficult for open source contributors to tell which projects are actively being worked on, or otherwise decide which projects need to be contributed to. Chaoss hopes to fix these issues by developing metrics, methodologies, and software for expressing open source project health and sustainability. Chaoss is made to allow contributors to know which communities to engage with in order to have an impact. Chaoss also helps open source projects by quantitatively showing the health of their project and proving that their project is a good project to work on. Overall, Chaoss provides a much needed way to determine the health of open source projects in order to improve the open source community as a whole.

Software product overview (hint: Augur is a good place to start

<http://augur.osshealth.io>)

Augur - Augur is a Flask web application, Python library, and REST server. It is able to display metrics that cover the health and sustainability of open source software development projects.

Cregit - Cregit is a framework of tools that facilitates the analysis and visualization of the evolution of source code stored in git repositories

GrimoireLab - GrimoireLab is a set of free, open source software tools for software development analytics. It functions by gathering data from a multitude of systems used in development, and merging it into a database. Once in the database, it is organized, and transformed into readable analytics such as visualizations and actionable dashboards. While it focuses on analyzing activity, community and processes, it can easily be tailored for other aims as well as it can be integrated with other tools.

System Use, including an actor survey

Users are able to create and use different metrics in order to measure the health of a specific project. This involves entering data into a database and applying the Chaoss system in order to analyze the metrics. These metrics are then able to be turned into visualizations of the data in order to get an easily readable answer to the overall health of the project.

Actor Survey

Development Team - Responsible for developing and maintaining Chaoss. Needs to ensure that the system is constantly running and working properly as well as write documentation for users and create databases for Chaoss to utilize.

User - The majority of actors are going to be users. The user's role is to utilize Chaoss in order to analyze the health of different projects that are relevant to them. They will be

grabbing the data from the different repositories, plugging it into Chaoss and creating visualizations in order to compare different projects.

System Requirements (including 2 use cases, a system functional specification, and a list of non-functional requirements)

Use Case 1: User inputs repo data into Augur and Augur returns analyzed data about the health of the system

Use Case 2: User has received analyzed data and uses Chaoss to create visualizations for the data

System functional specification: Users should be able to create a metric to analyze data, enter information from a repository into Chaoss, create a visualization based on the metrics they specified, and update previously entered data at a later point.

Non-functional Requirements: Users could compare different repository healths, see how the repository health has changed over time, be able to plug Chaoss into other software.

Design Constraints (at least 5)

- Works on all standard web browsers
- Is able to run with PostgreSQL
- Works with Linux
- Augur must be able to run as a Flask application on a REST server
- GrimoireLab must be able to gather data from multiple systems

Purchased Components (at least 1)

Chaos would need a web server such as AWS in order to run the website.

Interfaces (at least 1)

The system must interface with a PostgreSQL database server as well as with Vue.js.