Requirements Analysis

Songxi Chen

Introduction

This requirements analysis document will specify the requirements and features of Augur. It will give an overview of the product, the system use and actor survey, system requirements, design constraints, purchased components, and interfaces.

Software product overview

This product is a set of metrics and a website for viewing these metrics of open source projects. The purpose of the product is to help technology companies and IT organizations assess which projects are healthy and sustainable and predict which projects will continue to be healthy in the future. Some examples of metrics that can be tracked are lines of code added over time, closed issues each week, and number of committers each week. These metrics can be viewed visually on a website or downloaded then used to assess the sustainability of a project.

System Use

Administrator:

An administrator can choose what project repositories will be tracked. All metrics will automatically be tracked for any repositories they choose. They administrator can also choose how the metrics will be visualized on the front end website.

User:

A user can query metrics of any tracked repository by using an http GET request. The data will be returned to the user as JSON. A user can also view graphs and other visualizations of the metrics. Any visualization can be downloaded as a PNG or SVG.

System Requirements

Use Cases:

1. Query metric

a. Description:

- A user can query the api using an http request to get information about a metric

b. Actor

- Primary: User

c. Pre-conditions

- The queried repository must exist

d. Flow of events

- User makes GET request to api
- api returns JSON to the user

2. Add visualization

a. Description

- An administrator can define and add a new way to visualize a specific metric such as a new type of graph.

b. Actor

- Primary: Administrator

c. Pre-conditions

- User must be logged in and have administrator privileges

d. Flow of events

- defines the specifications of the visualization
- choose specific metric
- choose which page on the front end to display new visualization

System functional specification:

1. get repository information

given a specific repository, get information about it such as its name, descriptions, and commit count.

2. get visualization

given a specific repository and metric, get a visualization of the data.

Non-functional requirements:

1. New user should be able to setup augur for a repository in under 20 minutes by

following a quick start guide

2. api requests should return data within 250 milliseconds

3. system should have >99% uptime

Design Constraints

1. api should be a REST api and support http GET requests

2. all api requests should have documentation

3. should be able to run on an EC2 t2.medium or smaller instance

4. website should be flask

5. augur must be able to run in a docker container

Purchased Components

1. Domain name

2. Recurring AWS EC2 payments

Interfaces

1. REST api interface

2. visual frontend flask application with visualizations