

Group 10

Will Throm, Christian Watts, Timothy Harrington, Ting-Ting Yao, Wes Cook

## **Requirements**

## Requirements

Step 1:

- Identify the different types of Users of the software system
  - **Project Maintainer**
  - **Project Contributor**
  - **Corporation**

Step 2:

- For each identified User, identify the Activities they will perform with the software.

(These are User Requirements.)

- **Project Maintainer: log in/out, manage users, manage permissions, approve pull requests**
- **Project Contributor: log in/out, view repository, submit pull request**
- **Corporation: log in/out, view product, use product**

Step 3:

- For each identified Activity, identify...
- relevant data within the system. Data entities and attributes may be listed or you may construct a data model if it helps.
- constraints (non-functional) on the activity or the resultant state of the system

Activity	User	Data entities	Constraints
<b>Log in / Log out</b>	Maintainer, Contributor, Corporation	User credentials	User must not be able to log in if the credentials are wrong, credentials should have a certain length limit, credentials should contain only legal characters
<b>Manage groups/users/permissions</b>	Maintainer	Database tables	User and related data should be saved to tables that correspond logically
<b>Approve Pull Requests</b>	Maintainer	Github Data/Authentication	User should have proper authorization to submit approval
<b>Submit Pull Requests</b>	Contributor	Github Data/Authentication	User should have proper authorization to submit request
<b>View/Use Product</b>	Corporation	Github Data/Authentication	User should be logged in as proper entity

Step 4.

- Identify System constraints and requirements
  - Secure, robust database
  - System is dependant on Augur data
- i.e., hardware and necessary components
  - Device with web browser
  - Stable Internet connection

- Docker/Docker Compose
- System is limited to only 12GB of virtual RAM

Step 5.

- Identify metric requirements

Metrics Model	Metric	Requirements	Description
Development Responsiveness	Issue Response Time	1. Period of time 2. Average 3. Median	1. Start/finish date of period (days) 2. Average response time (days) 3. Median response time (days)
	Review Cycle Duration within a Change Request	1. Cycle Duration 2. Average 3. Median 4. Semi/fully abandoned processes	1. The time length of one review cycle within a single change request 2. Average review cycle duration 3. Median review cycle duration 4. Processes where the maintainer or submitter is slow in responding
	Change Request Duration	1. Period of time 2. Criteria for source code	1. Start/finish date of the period 2. Determining whether a file is part of source code
	Defect Resolution Duration	1. Time to change 2. Change fail rate 3. Deployments 4. Time to Restore	1. The median amount of time for a commit to be deployed 2. Number of failures per number of deployments 3. Number of deployments per day 4. Median amount of time between the deployment that caused the failure, and restoration
	Contribution Attribution	1. Contributor types 2. Ratio of contributor types 3. Quantity of contributions per type 4. Contribution types	1. Individual, organization, demographics, volunteer, sponsored, contributor role 2. Gender, sponsored, volunteer, blended 3. Number of contributions per type of contributor

Funding			4. Type of contribution being made by types of contributors
	Organizational Influence	1. Organizational contributors 2. Level/types of contributions 3. High activity organizations 4. Organizational contributor roles	1. How many organizational members are contributing to a project 2. Level of importance and type of contribution 3. Highlight active organizations in a project 4. Members that consist of the technical steering committee, governing board, project maintainers, sponsors
	Types of Contributions	1. How to define, quantify, track, and publicize contributions 2. Project demographics	1. Unique to each project, may include code submissions, code reviews, documentation authorship, etc 2. Align contributors with contributions to provide insight into diversity of a project
	Labor Investment	1. Number of contributions 2. Number of contributions by contributor type 3. Number of contributions by contribution type	1. (All) Allows organizations to understand labor costs during support of open source projects
	Organizational Diversity	1. Organizational contribution (%) 2. Time period	1. Contributor affiliations identify the organization they are employed/managed by 2. Time period of contributions