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CS 4320
Assignment 8
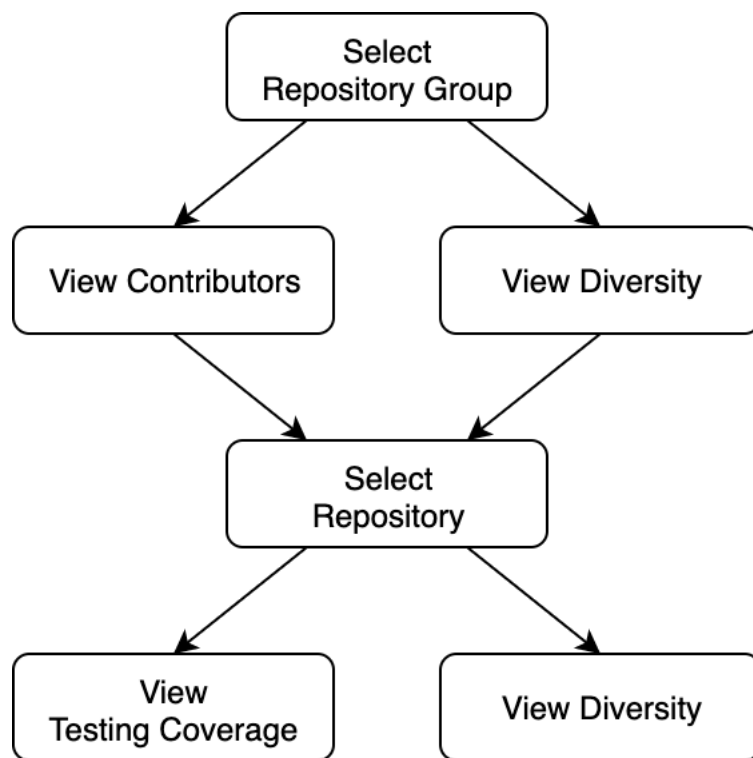11-04-2019

Introduction
Create new metrics with existing data in the augur database to analyze the health of open source projects on GitHub

Software Product Overview
Give a value of health on the repository group and repositories based on newly defined and computed metrics

System Use
Users will be able to view contributors in a repository group on a map and their information along with testing coverage of repositories and gender and ethnic diversity among contributors based on repository or repository group
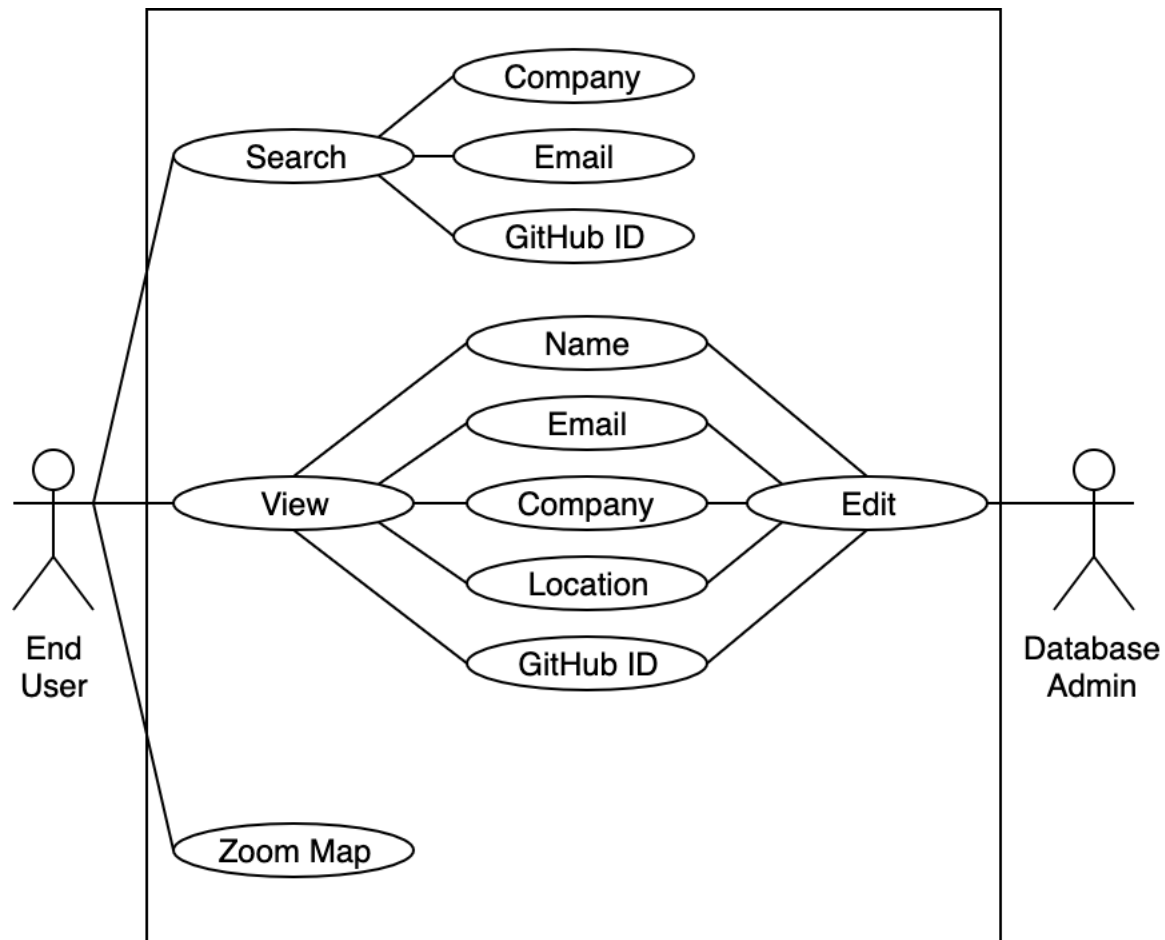

System Requirements
- Storage
- Memory
- Server
- CPU
- API
- Browser
- Internet connection

When user selects a repository group, contributors will be pinned on the map along the diversity health. When user clicks on a pin, the contributors profile will be displayed. On the same page, the user will be prompted to select a repository which will return the testing coverage and the diversity of the repository.
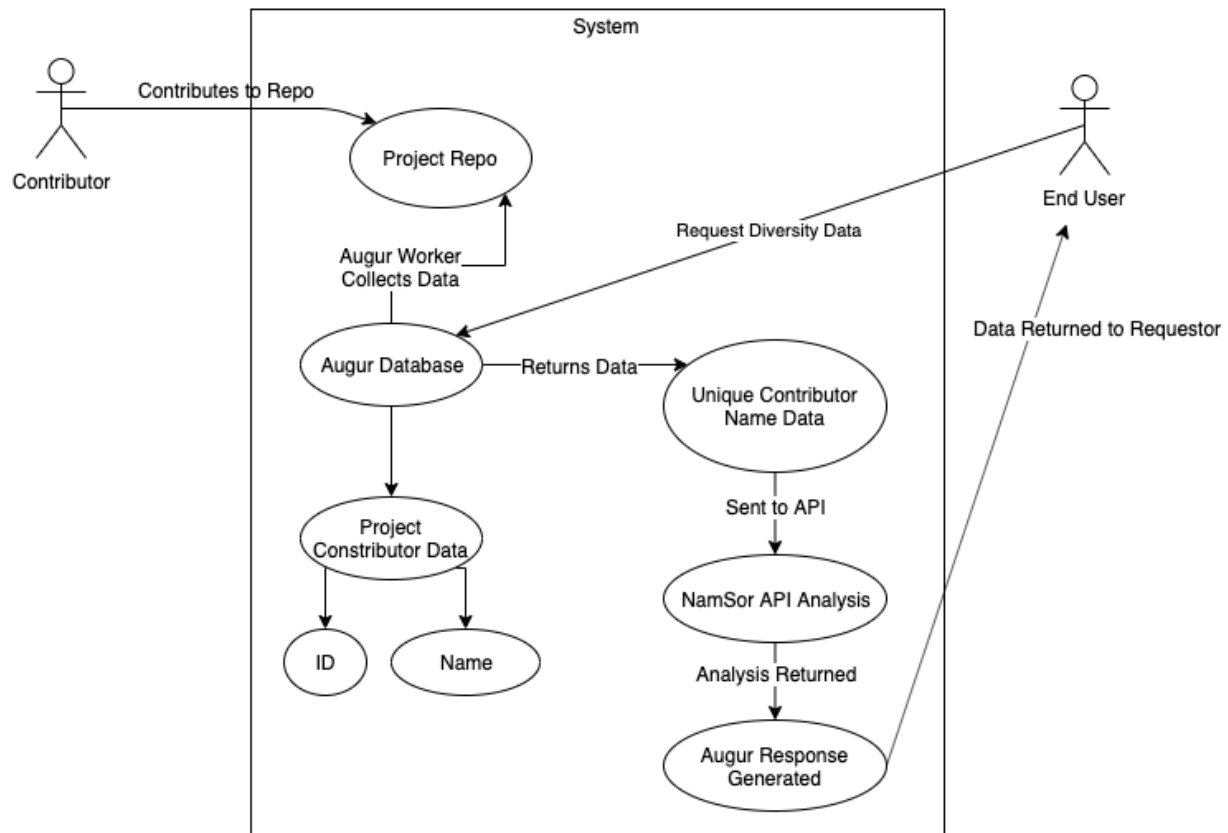
Non-Functional Requirements
- Response time of repositories population, this was noticed in the previous project
- Readability and visualization of data to end users

Use Case Diagram of Interactive Map

Use Case Diagram of Gender and Ethnic Diversity Among Committers

Contributor Diversity is a CHAOSS metric that uses the NamSor API and the contributor's names to predict the gender and ethnic diversity of the contributors to a particular repo or repo group. This allows administrators to evaluate pinpoint perspectives that may not be present within the project and resolve any resulting blindspots.

Design Constraints
- Limited memory to store in database
- Limited work time
- Pictures of contributors may not be available for profiles
- Users are able to access website from any machine with Internet
- Users must not be able to alter data, only the database admin
- Populate repositories in a short period of time or make user aware of load time

Purchased Components
- Google Maps
- JavaScript API
- Server

Interfaces
- Tabs for repository groups
- Map
- Selection boxes or modules