EE / CprE / SE 491 – sdmay20-43
Analysis of GitLab projects using BOA
Bi-weekly Report 2

1/30/2020 - 2/13/2020
Client: Simanta Mitra
Faculty Advisor: Simanta Mitra

Team Members
Diego Realpe - Team Leader | Test Engineer
Adrian Hamill - Test Engineer
Megan Miller - Test Engineer | Website Manager
Benjamin Carland - Test Engineer
Yi-Hsien Tan - Test Engineer | Organizer | Website Manager

Bi-weekly Overview
- These two weeks we began looking at specific Boa queries that we would like to develop and came up with a list containing them and the different types of things that those queries might encompass.
- We reviewed our query ideas with our client and were able to come up with a solid compilation of a variety of types of queries that should be useful in our meeting with him on 1/30/2020. He also provided some ideas and helped us break the queries down into categories during this meeting.
- On 2/6/2020 Megan and Ben met with Mitra to discuss possible options for the more hands-on queries that we need to write, involving design quality and code quality. He showed us some of the things stan4j can do as an example of what he would like to see.
- We had a meeting on 2/10/2020 to meet with a Boa Team member: Sumon Biswas to ask him about running Boa queries locally, about running the backend on operating systems other than MacOS and different options for how we might access the source code from the repositories to run quality diagnostics on it.
- After the meeting the consensus was that we were going to try and move forward with trying to integrate SpotBugs into our solution.

Past Weeks' Accomplishments
- Yi-Hsien, Ben and Megan each came up with a list of queries that seemed like a good starting point to go from.

- Adrian and Diego began to brainstorm ways to implement bash scripts that invoke both the JAR files discussed with Biswas to analyze the repos and run BOA queries against the SequenceFiles produced
- Diego researched on the new SpotBugs and how to call it as a different process from the BOA queries
- Diego looked into using a popular python package called "Click" for making the command line interface that Dr. Mitra was wanting to have

Pending Issues

- Boa tool currently doesn't analyze private repositories
- Adrian's Laptop with some of the files used last semester died so it set us back for a couple of days while he extracts the hard drive and gets the files.

Individual Contributions

Name	Contributions	Bi-weekly Hours	Total Hours
Diego Realpe	I looked at how to call SpotBugs via command line and other shell investigation as the backend team is the most comfortable with Linux. Tested package named "Click" to start developing bash interface	7	77
Adrian Hamil		10	116.5
Megan Miller	I looked into how the boa plugin called queries to the website and talked with one of the Boa researchers about how the API works.	11	91
Benjamin Carland	I researched the more current tools that might be used instead of using the AST Tree provided by Boa. Things like stan4j, FindBugs and the one that seems most probable, SpotBugs. I also began the process of writing some of the queries on the list we created.	12	83
Yi-Hsien Tan	I researched AST in Boa to help us create better Boa queries.	12	95

Plans For Upcoming Week

- Data Pipeline: Adrian Hamil & Diego Realpe

- Meet up and start experimenting with some of the BOA team's queries. Hopefully accomplish our first complete runs against student code
- Boa Research: Ben Carland & Megan Miller & Yi-Hsien Tan
  - Continue writing queries that don't rely heavily on the source code. These are mostly productivity and Teamwork related queries so they shouldn't be too difficult
  - Some or all of the Boa Research team may switch over to Data Pipeline to assist with the possible addition of SpotBugs to the pipeline.