Professional Practice Assignment 2

Quality Management & Continuous Deployment

CSE 4283

Developers:
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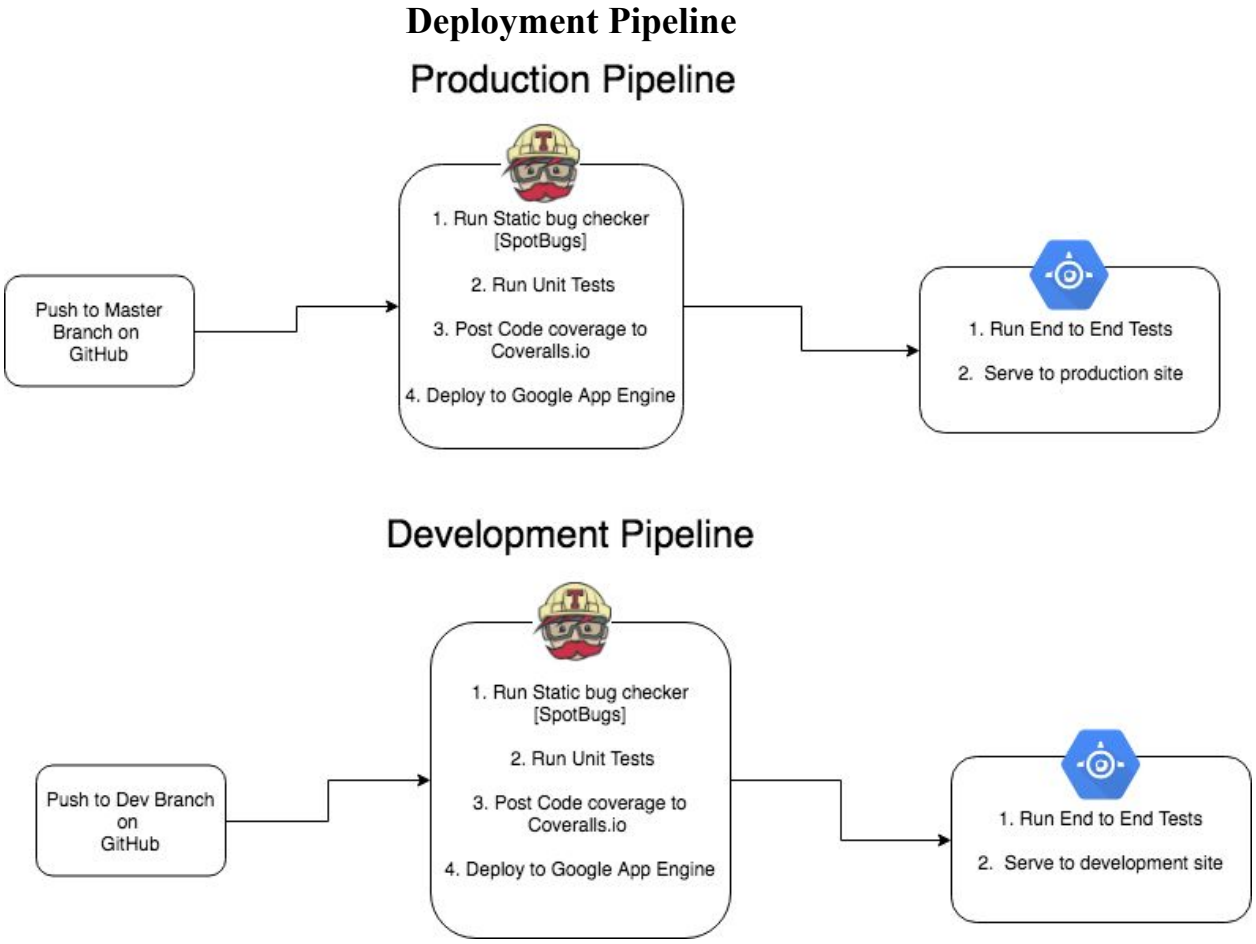
Zach Lott zkl6 GitHub: zacharylott94, zkl6

Deployment Pipeline

Our deployment pipeline was achieved by using GitHub, Travis CI, Google App Engine, Coveralls, Spotbugs and Cypress.



Deployment Pipeline Challenges

During set up of the our deployment pipeline some challenges were setting up auto-deploy to Google App Engine. This was a challenge because you had to do additional steps on Google App Engine to create Api Credentials in order for Travis CI to have access. Also, splitting traffic between our production and development environment was also a challenged because on each deployment from Travis CI it would keep allocating all traffic back to the production site. This was solved by doing a “no_promote: true” on our travis configuration file.

Test Cases for Manual Testing

Use Test Case Specification to specify 2 tests that should be performed during manual testing phase. Email Verification - This module was tested with the variable "abc@gmail.com" and the result was expected to be "This was a valid email." The actual results were the same as the expected results because the variable met all email format requirements. In a following test I used the variable "asd@@gmail.com" and the result was expect to be "Emails must cannot contain two @ symbols!" Again the actual results were the same as the expected results.

Split tip calculator - This module was tested with the following variables: 4 as the input for number of guests and $100 as the input for total cost. The result was expected to be $28.75 per person. The actual results were the same as the expected results. In a following test I used these variables: 2 was the input for number of guests and the string "fifty" was the input for total cost. The result was expected to be "That isn't a number!" Again the actual results were the same as the expected results.

Team member's role in project

Dillon Carley - Helped coordinate project by assigning tasks and organized deployment pipeline. Also helped set up initial Travis CI deployment code. Along with supporting other team members with blockers on tasks.

Britt Faulkner - Set up JSHint static analysis. Configured static analysis rules for warnings. Set up JSHint to run before the unit tests in the pipeline.

William Lee - Helped finish setting up the Travis CI deployment code and connecting travis to our Google App Engine. I had to make sure that Travis was only pushing changes that passed all of our tests first. In addition to Travis, I was in charge of screencasting a successful and unsuccessful code commit through gitHub.

Damon Stamps - Oversee end-to-end test for the project. Write the test using Cypress.io and ensure that the tool integrates with the pre-existing product and the product pasts all test that are written. Screencast proof of failed test turned successful.

Zach - Built the front end using the Vue framework. Helped with figuring out how to build Vue for production. Made a screencast of the front end development environment.

Tool Description

GitHub - Used to store code repo, keep track of issues, handle merges and conflicts. Setup involves creating and naming your repo, add files, committing your changes and pushing to a remote branch. On a push to master or dev it will trigger a Travis CI build on the new code.

Jest - Runs our unit tests on our modules (BMI Calculator, Retirement Calculator, Distance Calculator, Email Verifier), also generates a code coverage report. Travis CI runs Jest during the deployment pipeline

process. To set up on a repo you must have the Jest node module installed and create a test command to run unit tests.

Travis CI - A hosted continuous integration service that handles the deployment pipeline process. Travis CI runs our static bug checker, unit tests, code coverage tool and auto deploys to Google App Engine.

JSHint - Runs static analysis on all of the modules. Checks the code to see if it violates any of the preset analysis rules, which are set in .jshintrc in the main directory. An example rule is “no leading decimals”, which prevents decimal values that are less than 1 from starting with a decimal. Example: .15 raises a warning, but 0.15 does not.

Coveralls- Takes input from our code coverage report and displays relevant data on every Travis CI build. This takes place after all the unit tests are ran and the code coverage report is generated. To set up all you have to do is connect your GitHub account and pipe in your code coverage report in your test command.

Google App Engine - Used to host our production and development environments and run end to end tests on. After Travis CI has run the unit tests and generated code coverage reports it will auto deploy to the respected Google App Engine environment to be served. To enable Google App Engine you have to have an account, Google Admin Api credentials and Google Cloud credits.

Cypress - Cypress is an all-in-one testing tool that combines a framework, an assertion library, and has mocking and stubbing without the need of Selenium and additional libraries. It can be run in the browser or headlessly, allows app preview alongside a command log for all of your written tests, and makes the entire testing process simple.

Vue - Vue is a Javascript framework for creating reactive single page web applications.

Google Cloud Platform Usage

Google Cloud Platform for the most part was a straightforward process to initialize, but some challenges included navigating to relevant features of the platform, integrating Travis CI auto-deploy and initiating end-to-end tests. Specifically with Google App Engine, one challenge was solving out how keep traffic split between our production and development environments after each Travis CI build.

Screencasts

Code commit initiates a build that passes - show CI Tool output
https://github.com/drbyron-github-classroom/ppa-1-sw-testing-qa-spring-2018-official-team-4/blob/master/screencasts/Build_Test_Passed_Travis.mp4

Code commit that violates static analysis rule --> commit that fixes the rule
https://github.com/drbyron-github-classroom/ppa-1-sw-testing-qa-spring-2018-official-team-4/blob/master/screencasts/Static%20Analysis%20Screencast.mp4

Code commit that fails a unit test --> commit that fixes code to pass the test
https://github.com/drbyron-github-classroom/ppa-1-sw-testing-qa-spring-2018-official-team-4/blob/master/screencasts/Fail-Succeed-Code.mp4

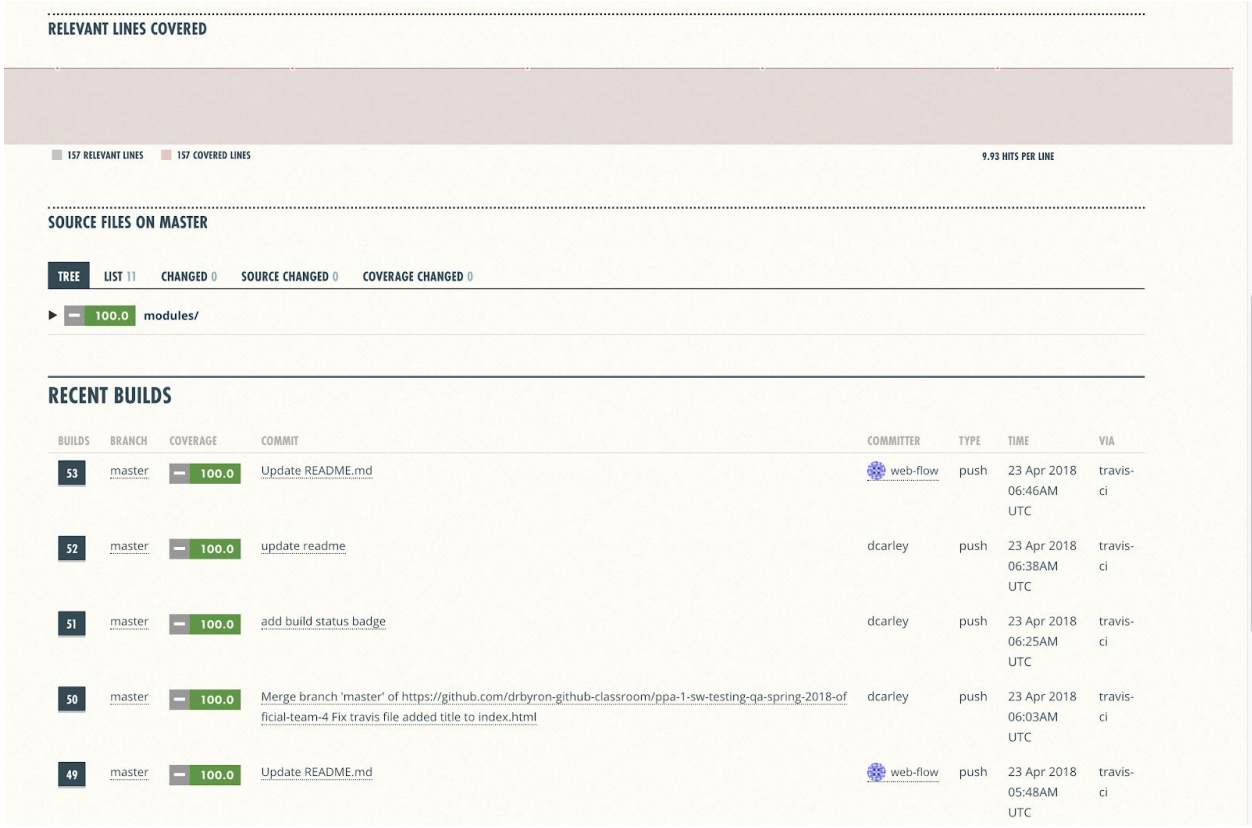
Code commit that fails an acceptance / end-to-end test --> commit that fixes code to pass the test
https://github.com/drbyron-github-classroom/ppa-1-sw-testing-qa-spring-2018-official-team-4/blob/master/screencasts/End2EndExample.mp4

Code running in staging environment
https://github.com/drbyron-github-classroom/ppa-1-sw-testing-qa-spring-2018-official-team-4/blob/master/screencasts/devEnvironmentScreencast.mov

Smoke and manual tests in Staging
https://github.com/drbyron-github-classroom/ppa-1-sw-testing-qa-spring-2018-official-team-4/blob/master/screencasts/Smoke%20Test.mp4

Application pushed to production —> Smoke test production app
https://github.com/drbyron-github-classroom/ppa-1-sw-testing-qa-spring-2018-official-team-4/blob/master/screencasts/Smoke_test_production.mp4

Code Coverage Report



RELEVANT LINES COVERED

157 RELEVANT LINES 157 COVERED LINES 9.93 HITS PER LINE

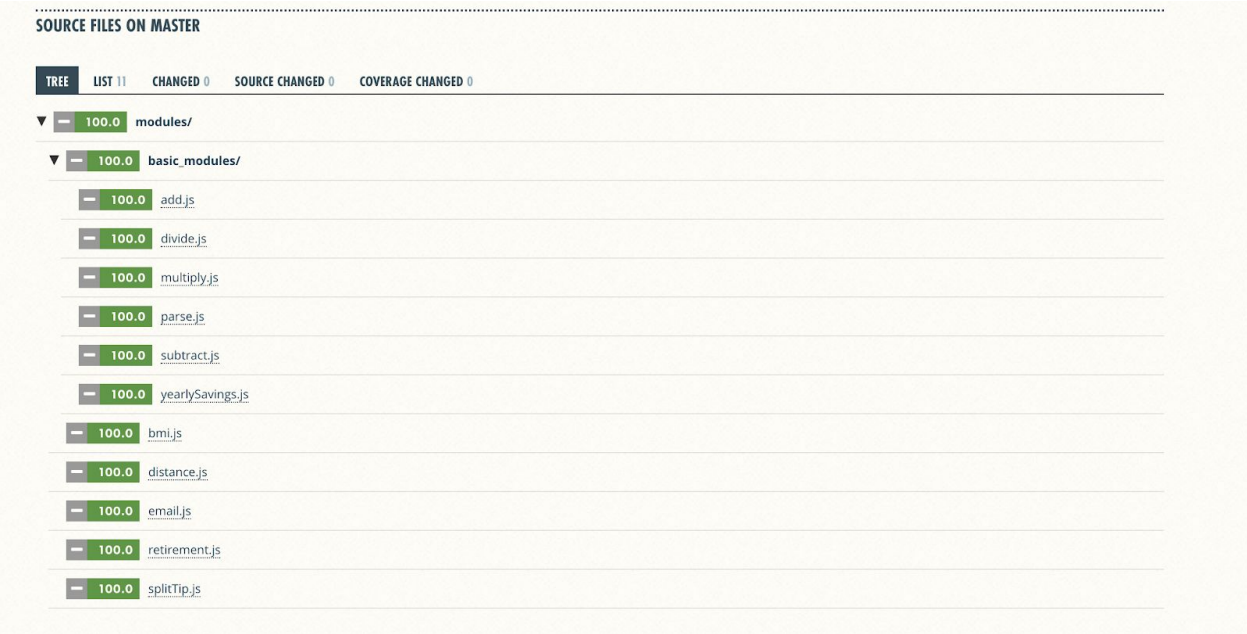
SOURCE FILES ON MASTER

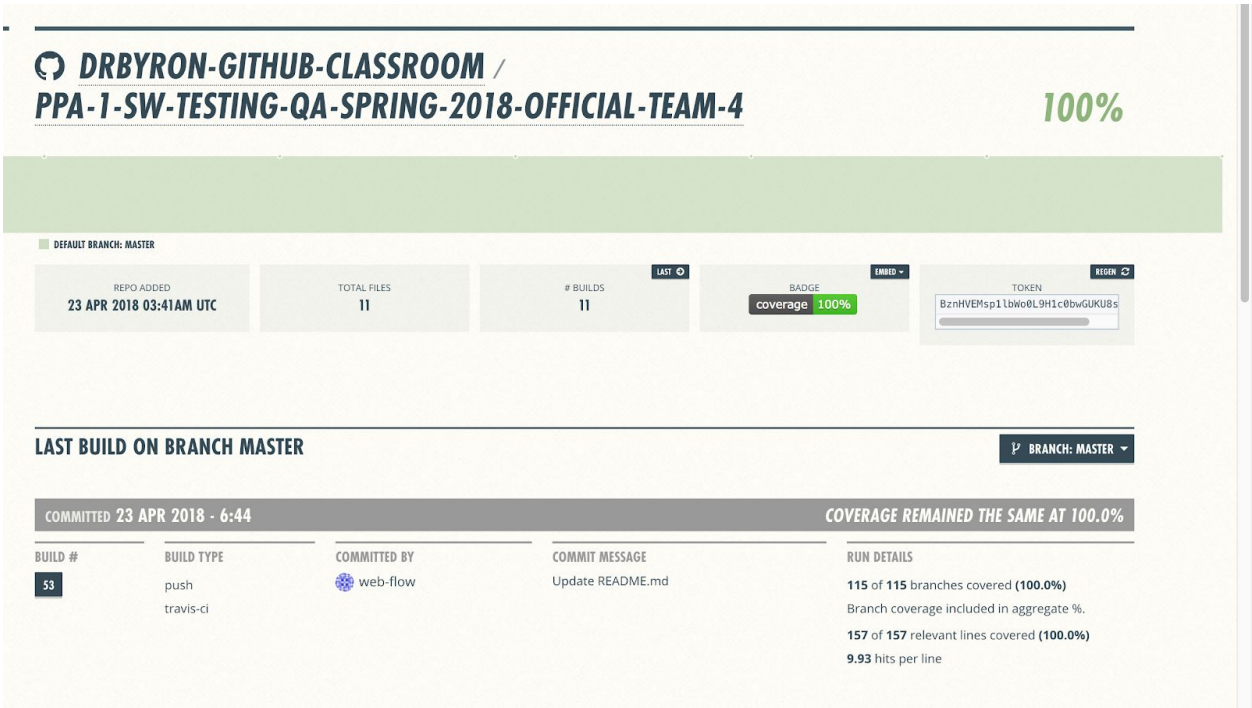
TREE LIST 11 CHANGED 0 SOURCE CHANGED 0 COVERAGE CHANGED 0

▶ 100.0 modules/

RECENT BUILDS

BUILDS	BRANCH	COVERAGE	COMMIT	COMMITTER	TYPE	TIME	VIA
53	master	100.0	Update README.md	web-flow	push	23 Apr 2018 06:46AM UTC	travis-ci
52	master	100.0	update readme	dcarley	push	23 Apr 2018 06:38AM UTC	travis-ci
51	master	100.0	add build status badge	dcarley	push	23 Apr 2018 06:25AM UTC	travis-ci
50	master	100.0	Merge branch 'master' of https://github.com/drbyron-github-classroom/ppa-1-sw-testing-qa-spring-2018-official-team-4 Fix travis file added title to index.html	dcarley	push	23 Apr 2018 06:03AM UTC	travis-ci
49	master	100.0	Update README.md	web-flow	push	23 Apr 2018 05:48AM UTC	travis-ci


SOURCE FILES ON MASTER
TREE
LIST 11
CHANGED 0
SOURCE CHANGED 0
COVERAGE CHANGED 0
100.0 modules/
100.0 basic_modules/
100.0 add.js
100.0 divide.js
100.0 multiply.js
100.0 parse.js
100.0 subtract.js
100.0 yearlySavings.js
100.0 bmi.js
100.0 distance.js
100.0 email.js
100.0 retirement.js
100.0 splitTip.js


DRBYRON-GITHUB-CLASSROOM /
PPA-1-SW-TESTING-QA-SPRING-2018-OFFICIAL-TEAM-4
100%
DEFAULT BRANCH: MASTER
REPO ADDED
23 APR 2018 03:41AM UTC
TOTAL FILES
11
BUILDS
11
LAST
BADGE
coverage 100%
EMBED
TOKEN
BznHVEMsp1lbWo0L9H1c0bwGUKU8s
REGEN
LAST BUILD ON BRANCH MASTER
BRANCH: MASTER
COMMITTED 23 APR 2018 - 6:44
COVERAGE REMAINED THE SAME AT 100.0%
BUILD #
53
BUILD TYPE
push
travis-ci
COMMITTED BY
web-flow
COMMIT MESSAGE
Update README.md
RUN DETAILS
115 of 115 branches covered (100.0%)
Branch coverage included in aggregate %.
157 of 157 relevant lines covered (100.0%)
9.93 hits per line