

Build System and Build Reproducibility

Authors: Garrett Phillips, Benjamin Boardley, Jack Gardner

Course: ECE49595O - Spring 2024

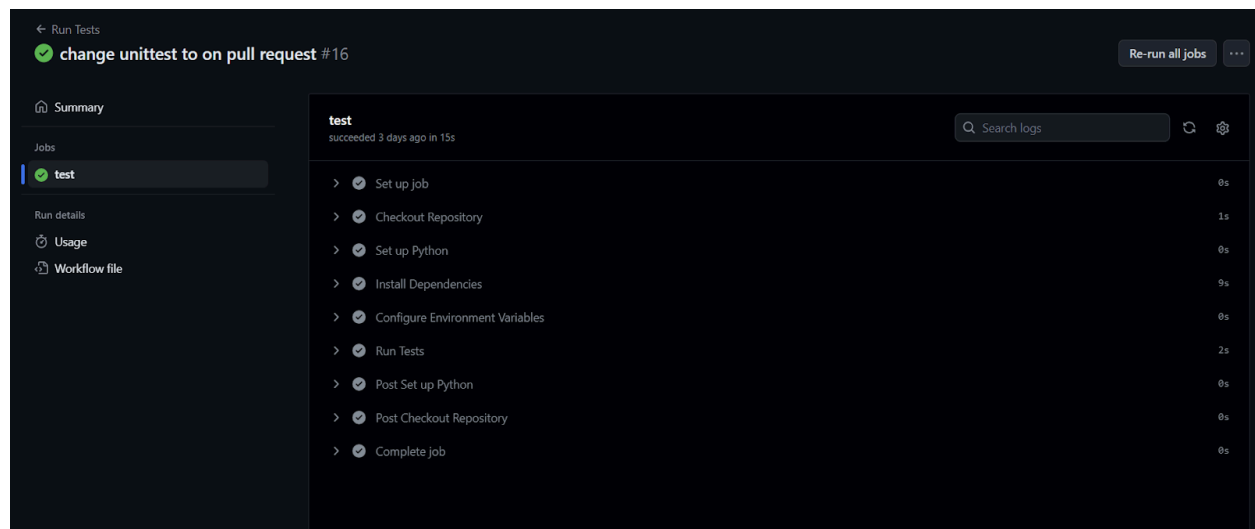
Date: 01/31/2024

Continuous Integration

Our CI is through GitHub actions where we run unit tests on each aspect of our code. We have been working on our proof-of-concept, which does not include implementation of our front end, React Native. The Diffoscope image shown below is from the React Native npx expo build, which has minimal components as of now. Dependency tracking takes place within our package.json file that npx creates. This will allow us to monitor our dependencies during development. We have this CI pipeline in place so that as we continue to add features our application can continue to be tested.

We also set up github actions with basic python unit tests for our Proof of Concept. These unit tests were very baseline and trivial however they set the foundation for our testing integration and verification that our program is working as intended. Here is a snapshot of the Unit test taking place on merge to our development branch. **Note:** we hammered the spotify API with 20,000+ requests accidentally so the tests failed because of hitting the rate limit.

Public log of our build:



Diffoscope:

Here is a snapshot of our diffoscope for 2 different React Native builds.

a/web-build-1.zip vs.
b/web-build-2.zip

12.8 KB

zipinfo {}		5.86 KB	
offset 1, 30 lines modified		offset 1, 30 lines modified	
1	Zip file size: 713057 bytes, number of entries: 28	1	Zip file size: 713057 bytes, number of entries: 28
2	-rw-rw-rw-rw- 3.0 unx 564 tx defN 24-Jan-26 17:03 web-build-1/asset-manifest.json	2	-rw-rw-rw-rw- 3.0 unx 564 tx defN 24-Jan-26 17:05 web-build-2/asset-manifest.json
3	-rw-rw-rw-rw- 3.0 unx 749 bx stor 24-Jan-26 17:03 web-build-1/favicon-16.png	3	-rw-rw-rw-rw- 3.0 unx 749 bx stor 24-Jan-26 17:05 web-build-2/favicon-16.png
4	-rw-rw-rw-rw- 3.0 unx 1976 bx stor 24-Jan-26 17:03 web-build-1/favicon-32.png	4	-rw-rw-rw-rw- 3.0 unx 1976 bx stor 24-Jan-26 17:05 web-build-2/favicon-32.png
5	-rw-rw-rw-rw- 3.0 unx 14510 bx defN 24-Jan-26 17:03 web-build-1/favicon.ico	5	-rw-rw-rw-rw- 3.0 unx 14510 bx defN 24-Jan-26 17:05 web-build-2/favicon.ico
6	-rw-rw-rw-rw- 3.0 unx 4564 tx defN 24-Jan-26 17:03 web-build-1/index.html	6	-rw-rw-rw-rw- 3.0 unx 4564 tx defN 24-Jan-26 17:05 web-build-2/index.html
7	-rw-rw-rw-rw- 3.0 unx 221 tx defN 24-Jan-26 17:03 web-build-1/manifest.json	7	-rw-rw-rw-rw- 3.0 unx 221 tx defN 24-Jan-26 17:05 web-build-2/manifest.json
8	-rw-rw-rw-rw- 3.0 unx 0 bx stor 24-Jan-26 17:03 web-build-1/pwa/	8	-rw-rw-rw-rw- 3.0 unx 0 bx stor 24-Jan-26 17:05 web-build-2/pwa/
9	-rw-rw-rw-rw- 3.0 unx 0 bx stor 24-Jan-26 17:03 web-build-1/pwa/apple-touch-icon/	9	-rw-rw-rw-rw- 3.0 unx 0 bx stor 24-Jan-26 17:05 web-build-2/pwa/apple-touch-icon/
10	-rw-rw-rw-rw- 3.0 unx 11563 bx defN 24-Jan-26 17:03 web-build-1/pwa/apple-touch-icon/apple-touch-icon-180.png	10	-rw-rw-rw-rw- 3.0 unx 11563 bx defN 24-Jan-26 17:05 web-build-2/pwa/apple-touch-icon/apple-touch-icon-180.png
11	-rw-rw-rw-rw- 3.0 unx 0 bx stor 24-Jan-26 17:03 web-build-1/pwa/apple-touch-startup-image/	11	-rw-rw-rw-rw- 3.0 unx 0 bx stor 24-Jan-26 17:05 web-build-2/pwa/apple-touch-startup-image/
12	-rw-rw-rw-rw- 3.0 unx 58606 bx defN 24-Jan-26 17:03 web-build-1/pwa/apple-touch-startup-image/apple-touch-startup-image-1125x2436.png	12	-rw-rw-rw-rw- 3.0 unx 58606 bx defN 24-Jan-26 17:05 web-build-2/pwa/apple-touch-startup-image/apple-touch-startup-image-1125x2436.png
13	-rw-rw-rw-rw- 3.0 unx 54554 bx defN 24-Jan-26 17:03 web-build-1/pwa/apple-touch-startup-image/apple-touch-startup-image-1242x2208.png	13	-rw-rw-rw-rw- 3.0 unx 54554 bx defN 24-Jan-26 17:05 web-build-2/pwa/apple-touch-startup-image/apple-touch-startup-image-1242x2208.png
14	-rw-rw-rw-rw- 3.0 unx 66727 bx defN 24-Jan-26 17:03 web-build-1/pwa/apple-touch-startup-image/apple-touch-startup-image-1242x2688.png	14	-rw-rw-rw-rw- 3.0 unx 66727 bx defN 24-Jan-26 17:05 web-build-2/pwa/apple-touch-startup-image/apple-touch-startup-image-1242x2688.png
15	-rw-rw-rw-rw- 3.0 unx 52490 bx defN 24-Jan-26 17:03 web-build-1/pwa/apple-touch-startup-image/apple-touch-startup-image-1536x2048.png	15	-rw-rw-rw-rw- 3.0 unx 52490 bx defN 24-Jan-26 17:05 web-build-2/pwa/apple-touch-startup-image/apple-touch-startup-image-1536x2048.png
16	-rw-rw-rw-rw- 3.0 unx 58342 bx defN 24-Jan-26 17:03 web-build-1/pwa/apple-touch-startup-image/apple-touch-startup-image-1668x2224.png	16	-rw-rw-rw-rw- 3.0 unx 58342 bx defN 24-Jan-26 17:05 web-build-2/pwa/apple-touch-startup-image/apple-touch-startup-image-1668x2224.png
17	-rw-rw-rw-rw- 3.0 unx 63061 bx defN 24-Jan-26 17:03 web-build-1/pwa/apple-touch-startup-image/apple-touch-startup-image-1668x2388.png	17	-rw-rw-rw-rw- 3.0 unx 63061 bx defN 24-Jan-26 17:05 web-build-2/pwa/apple-touch-startup-image/apple-touch-startup-image-1668x2388.png
18	-rw-rw-rw-rw- 3.0 unx 77641 bx defN 24-Jan-26 17:03 web-build-1/pwa/apple-touch-startup-image/apple-touch-startup-image-2048x2732.png	18	-rw-rw-rw-rw- 3.0 unx 77641 bx defN 24-Jan-26 17:05 web-build-2/pwa/apple-touch-startup-image/apple-touch-startup-image-2048x2732.png
19	-rw-rw-rw-rw- 3.0 unx 23060 bx defN 24-Jan-26 17:03 web-build-1/pwa/apple-touch-startup-image/apple-touch-startup-image-640x1136.png	19	-rw-rw-rw-rw- 3.0 unx 23060 bx defN 24-Jan-26 17:05 web-build-2/pwa/apple-touch-startup-image/apple-touch-startup-image-640x1136.png
20	-rw-rw-rw-rw- 3.0 unx 27034 bx defN 24-Jan-26 17:03 web-build-1/pwa/apple-touch-startup-image/apple-touch-startup-image-750x1334.png	20	-rw-rw-rw-rw- 3.0 unx 27034 bx defN 24-Jan-26 17:05 web-build-2/pwa/apple-touch-startup-image/apple-touch-startup-image-750x1334.png
21	-rw-rw-rw-rw- 3.0 unx 38985 bx defN 24-Jan-26 17:03 web-build-1/pwa/apple-touch-startup-image/apple-touch-startup-image-828x1792.png	21	-rw-rw-rw-rw- 3.0 unx 38985 bx defN 24-Jan-26 17:05 web-build-2/pwa/apple-touch-startup-image/apple-touch-startup-image-828x1792.png
22	-rw-rw-rw-rw- 3.0 unx 207 tx defN 24-Jan-26 17:03 web-build-1/serve.json	22	-rw-rw-rw-rw- 3.0 unx 207 tx defN 24-Jan-26 17:05 web-build-2/serve.json
23	-rw-rw-rw-rw- 3.0 unx 0 bx stor 24-Jan-26 17:03 web-build-1/static/	23	-rw-rw-rw-rw- 3.0 unx 0 bx stor 24-Jan-26 17:05 web-build-2/static/
24	-rw-rw-rw-rw- 3.0 unx 0 bx stor 24-Jan-26 17:03 web-build-1/static/	24	-rw-rw-rw-rw- 3.0 unx 0 bx stor 24-Jan-26 17:05 web-build-2/static/