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CS491 - DevOps

Final Project Documentation

4/26/22

Building and testing was implemented through GitHub and GitHub Actions. GitHub is the main source control component, and GitHub actions builds and tests the code. The GitHub Actions workflow is set up to build and run the tests for `decision_tree.py` on any push to the main branch of the repository. The program is built from the python3 language, and tests are done with unittest and coverage. The unit tests covered 98% of the code, and 5 integration tests were implemented. The unit tests and integration tests are placed in their respective python files, and the results from the tests can be found in the workflow's job output.

Packaging and deployment was implemented through Docker and Docker Hub. A separate GitHub Actions workflow is set up in the repository that will execute after the testing workflow finishes. The workflow is set up to connect to my Docker profile, and will run the Dockerfile in the repository to build and push the container to Docker Hub. Once the container is in Docker Hub, Docker Desktop can be used to pull the container and run on any system. The command to pull from Docker Hub is “`docker build ernestob379/cs491-final-project-demo`”, and the container can be run by the command “`docker run ernestob379/cs491-final-project-demo`”.