



- You need all of your Linux command line and Git skills today.
- Get your notes, web pages, etc. ready so you can use them!



Continuous Integration Testing

<http://www.martinfowler.com/articles/continuousIntegration.html>

Continuous Integration Testing

- Run your tests on every event
 - Commit
 - Pull request
 - <http://git-scm.com/book/en/v2/Customizing-Git-Git-Hooks>
 - <https://help.github.com/articles/creating-webhooks/>
- Report status of build
 - Building (compiling and passing all tests) 
 - Failing (failed compile or failed test) 

Examples

- <https://builds.apache.org/>
- <https://travis-ci.org/>
- <https://teamcity.jetbrains.com/overview.html>

Our Tools

- GitHub
- Travis Continuous Integration server
 - travis-ci.org
 - Free with **public** GitHub repositories
- Python
 - unittest, DocTest, nosetest



Requirements

- Specify the build environment
 - which version of Python?
- Automate the build
 - Automate installation of 3rd party libraries
- Automate the testing
 - Unit tests
 - Doc test
 - nosetests
- Hook revision control up to CI server

<https://travis-ci.org/>

- Let's look at that site again

<https://travis-ci.org/chaddcw/Python-CI-Testing>

GitHub

- Let's build a simple **public** repository
 - on your personal account

- On GitHub
 - New repository, public
 - Add .gitignore Python
 - Add README.md
 - Add License (your choice)

Files

- Clone your repository to your local machine

- Set up your email and user name locally!

```
git config --global user.email punet@pacificu.edu
```

- Copy **unittestExample.py** from PythonExamples_Lectures to your new repository

- Copy **DocTestExample.py** from PythonExamples_Lectures to your new repository

- Commit to Git Hub

Add .travis.yml

```
language: python
python:
# - "2.7"
- "3.3"
- "3.4"
# command to install dependencies
install:
- pip install simplejson ← Not strictly needed
# command to run tests
script:
- python -m unittest unittestExample -v
- python -m doctest -v DocTestExample.py
for demonstration only!
```

Commit to GitHub!

Travis Configuration

- Log in to Travis with GitHub account
- Allow Travis access to GitHub
 - Travis-ci will show up here:
<https://github.com/settings/applications>
- Enable Travis on the Public Repository

Edit README.md

Add some note about testing...

Push to GitHub

Travis CI

- Visit:

<https://travis-ci.org/USER/REPOS>

- Lag may be a few minutes
- Did you get an email?

Edit README.md

```
[![Build Status](https://travis-ci.org/USER/REPOS.svg)]  
(https://travis-ci.org/USER/REPOS)
```

Push to GitHub

Travis CI

- Visit:

<https://travis-ci.org/USER/REPOS>

- Visit:

- GitHub

- Do you see the Build status Icon on your README?

Let's Fail a test

- Edit `unittestExample.py`
- Change any `assertEqual` to `assertNotEqual`
- Push to GitHub
- Go check your Travis Page.
 - May lag a few minutes.
- Did you get an email?

Resources

- <https://travis-ci.org/>
- <http://docs.travis-ci.com/user/languages/python/>
- <http://pythontesting.net/start-here/>
- <https://nose.readthedocs.org/en/latest/>
- **<https://github.com/chaddcw/Python-CI-Testing>**