VVV

Validation and linting tool

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- Validation: HTML validator, CSS validator
- Linting: flag suspicious code: catch typing errors, formatting errors

https://en.wikipedia.org/wiki/Lint_programming_tool

```
foobar = get_magic()

try:

    foobar.doSomething()

except:

    fobar.doSomethingElse()
```

```
[~/code/vvv/demo]% vvv .

Running vvv against .

/Users/moo/code/vvv/demo/demo.py
validation output:

************* Module demo

E0602: 15,4: Undefined variable 'fobar'
```

Why you need VVV

- Humans make human errors and are lazy
- Good practices must be enforced automatically, *continuously*
- "Disadvantages: Initial setup time required"

VVV

- Per project configuration files for coding conventions and linting rules
- Easy set-up: Automatically install required software
- Integration with version control
- Support multiple languages (Python, Javascript, CSS, restructured text... more to come)

Benefits

- No bad code slips thru the commits
- Enforce coding conventions across project members *easily* (esp. in open-ended OSS projects)
- Permanent increase in software code quality

Automatic enforcement

```
[~/code/vvv/demo]% git status
# On branch master
# Changes to be committed:
#   (use "git reset HEAD <file>..." to unstage)
#
#	new file:   demo.py
#	new file:   moomodule.py
#

[~/code/vvv/demo]% git commit -m "New cool stuff I typed in eyes
folder in 3 seconds"
/Users/moo/code/vvv/demo/demo.py
/Users/moo/code/vvv/demo/demo.py validation output:
************* Module demo
E1101:  8,0: Instance of 'str' has no 'cutHumanInHalf' member

To fix validation errors:
-----------------------------
Python source code did not pass Pylint validator. Please fix
issues or disable warnings in .py file itself or validation-
options.yaml file.

Let's fix these issues, ok? ^_^
/Users/moo/code/vvv/demo/moomodule.py
VVV validatoin and linting failed
```

Mark-up errors

```
.foo {
    backgrnd: yellow;
}
```

```
Running vvv against .
/Users/moo/code/vvv/demo/demo.py validation output:
{vextwarning=false, output=text, lang=en, warning=2,
medium=all, profile=css3}
W3C CSS Validator results for file:/Users/moo/code/vvv/
demo/foobar.css
Sorry! We found the following errors (1)
URI : file:/Users/moo/code/vvv/demo/foobar.css
Line : 2 .foo
       Property backgrnd doesn&#39;t exist :
       yellow
```

Coding conventions

```
C0103:  2,4:MagicalObject.doSomething: Invalid name
"doSomething" (should match [a-z_][a-z0-9_]{2,30}$)
```

(PEP-8 for Pythoneers)

Generic text validation

- Line length
- Catch bad tabs and indentation
- Catch bad character sets (ISO-8859-1, anyone?)
- Catch spooky stuff like ALT+spacebar *No Break Space* character

Usage

Install VVV on your computer

```
# Python 3 + virtualenv

cd ~
virtualenv-3.2 vvv-venv
. ~/vvv-venv/bin/activate
pip install vvv
```

Add VVV configuration in project root

- **validation-options.yaml** to tell which validators to run with which options
- **validation-files.yaml** for file whitelisting / blacklisting

validation-options.yaml

```
# Enforce max line length
linelength:
  length: 250

# Python additional configuration

pylint:

  host-python-env: true

  python3k: true

  configuration: |

    [MESSAGES CONTROL]
    # Disable:
    # - Missing docstring
    # :C0112: *Empty docstring*
    # :R0903: *Too few public methods (%s/%s)*
    # :R0904: *Too many public methods (%s/%s)*
    disable = C0111, C0112, R0903, R0904
```

validation-files.yaml

```
# Don't match hidden dotted files/folders
# Don't match generated folders
# Don't match test data (which is bad
intentionally)
all: |
  *
  !RE:.*\/\..*|^\..*
  !**/build/**
  !dist/**
  !venv
  !**/__pycache__
  !*.egg-info
  !tests/validators
  !tests/test-installation-environment
```

Run VVV

```
source ~/vvv-venv/bin/activate
vvv .
```

...or...

```
~/vvv-venv/bin/vvv .
```

No painful manual installations

- VVV will automatically download and install a pile of software in ~/*.vvv* when run for the first time
- VVV gives instructions how to install dependencies which cannot be automatically installed: java, node
- Installed on-demand: jshint, CSS validator, pylint, etc.

Fighting the laziness

Pre-commit hook integration

```
# Run pre-commit hook installation
vvv-install-git-pre-commit-hook .
```

Breaking the law (Judas Priest, 1980)

```
git commit --no-verify -m "Those validator hooks
prevent me committing crappy code, damn it!"
```

https://www.youtube.com/watch?v=L397TWLwrUU

Continuous integration (.travis.yml)

```
# Snake me baby!
language: python

python:
  - "3.2"

# - We use logilab.astng trunk until this bug fix is
# released http://comments.gmane.org/gmane.comp.python.logilab/1193
install:
  - "pip install hg+http://hg.logilab.org/logilab/astng/"
  - pip install . --use-mirrors


# command to run validation against the code base
script: vvv .
```

VVV is here today

- Available on PyPi: http://pypi.python.org/pypi/vvv
- Available on Github: https://github.com/miohtama/vvv

Future

- Text-editor background linting when typing (Sublime Edit 2)
- Expanded version control integration with SVN, Bazaar and Mercurial
- Expanded language support: Java, PHP, CoffeeScript
- Expanded user base: **you** report the bugs

Q&A

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