
sPy Documentation

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sPy is Python based script tracking changes at any online or offline location. After detecting changes it sends emails notifying about differences.

SOURCE

Source is available as mercurial repository at bitbucket. To download latest code run:

```
hg clone https://bitbucket.org/seler/spy
```


STRUCTURE

2.1 Design patterns

2.1.1 Proxy pattern

```
class spy.BinarySite(*args, **kwargs)
    Extends default Site behaviour providing md5 hash check for binary files.

    parse_new_content(content)
        Instead of comparing md5 hashes it will prepare new content as hashes to conserve space and speedup
        script.

class spy.HTMLSite(*args, **kwargs)
    Extends default Site behaviour providing more information about changes in html resource.

class spy.TextSite(*args, **kwargs)
    Extends default Site behaviour providing more information (unified diff) about changes in text resource.

    compare()
        Compares files using difflib.unified_diff.
```

2.1.2 Decorator pattern

```
class spy.OfflineSiteDecorator(subject)
    Provides access to content offline.

class spy.OnlineSiteDecorator(subject)
    Provides access to content online.

class spy.NewSiteDecorator(*args, **kwargs)
    Supports initial check for new sites.

    download_new_content()
        If it's new site returns empty string.

    download_old_content()
        If it's new site returns empty string.
```

2.1.3 Singleton pattern

```
class spyMailer
    Singleton pattern.
```

Collects, creates and sends notification emails.

configure (*sender, default_recipients, host, port, username, password, use_tls*)
Configures mailer.

classmethod get_instance ()
Returns instance of Mailer. If no instance ever existed it creates one.

make_email (*sender, recipient, data*)
Creates and returns email message for single recipient.

make_messages ()
Creates messages for all recipients.

prepare_notification (*name, diff, location, recipients=None*)
Adds single notification about single site.

send_messages ()
Sends all messages.

2.1.4 Factory pattern

class `spy.SiteFactory`
Factory pattern.

get_site (*section*)
Generates `Site` object.

2.1.5 Facade pattern

class `spy.SPy` (*site_slugs=None*)
Facade pattern.

run ()
Runs everything.

2.2 Source code

class `spy.AbstractDecorator` (*subject*)
Decorator pattern.

Default interface for `Site`.

compare ()

download_new_content ()

download_old_content ()

get_diff ()

get_filename ()

get_location ()

get_name ()

get_new_content ()

get_old_content ()

```
has_changed()
notify()
parse_new_content(content)
prepare_notification()
save_new_content()
set_diff(value)
set_new_content(value)
set_old_content(value)

class spy.AbstractProxy(*args, **kwargs)
    Proxy pattern
    Default proxy interface to Site.
    compare()
    download_new_content()
    download_old_content()
    get_diff()
    get_filename()
    get_location()
    get_name()
    get_new_content()
    get_old_content()
    has_changed()
    notify()
    parse_new_content(content)
    prepare_notification()
    save_new_content()
    set_diff(value)
    set_new_content(value)
    set_old_content(value)

class spy.BinarySite(*args, **kwargs)
    Extends default Site behaviour providing md5 hash check for binary files.
    parse_new_content(content)
        Instead of comparing md5 hashes it will prepare new content as hashes to conserve space and speedup
        script.

class spy.HTMLSite(*args, **kwargs)
    Extends default Site behaviour providing more information about changes in html resource.

exception spy.ImproperlyConfigured
```

```
class spy.Mailer
    Singleton pattern.

    Collects, creates and sends notification emails.

    exception NotSingle

    Mailer.__Mailer__instance = None

    Mailer.configure (sender, default_recipients, host, port, username, password, use_tls)
        Configures mailer.

    classmethod Mailer.get_instance ()
        Returns instance of Mailer. If no instance ever existed it creates one.

    Mailer.make_email (sender, recipient, data)
        Creates and returns email message for single recipient.

    Mailer.make_messages ()
        Creates messages for all recipients.

    Mailer.prepare_notification (name, diff, location, recipients=None)
        Adds single notification about single site.

    Mailer.send_messages ()
        Sends all messages.

class spy.NewSiteDecorator (*args, **kwargs)
    Supports initial check for new sites.

    download_new_content ()
        If it's new site returns empty string.

    download_old_content ()
        If it's new site returns empty string.

class spy.OfflineSiteDecorator (subject)
    Provides access to content offline.

    download_new_content ()

class spy.OnlineSiteDecorator (subject)
    Provides access to content online.

    download_new_content ()

class spy.SPy (site_slugs=None)
    Facade pattern.

    configure ()

    get_sites ()

    initialize_mailer ()

    notify ()

    run ()
        Runs everything.

    spy ()

class spy.Site (name, location, slug, recipients=None)
    Represents single resource
```

compare()
Checks if new content is different than old content.

download_new_content()
Dummy. Left for customization in decorators or proxies.

download_old_content()
Opens old file (downloaded during last check) and returns it's content.

get_diff()

get_filename()

get_location()

get_name()

get_new_content()
Returns new (downloaded) content.

get_old_content()
Return old content.

has_changed()
Return True if resource has changed.

parse_new_content(*content*)
Parses new content after downloading.

prepare_notification()
Feeds Mailer.

save_new_content()
Saves new content for future comparisons.

set_diff(*value*)

set_new_content(*value*)
Sets new content from *value*.

set_old_content(*value*)
Sets old content from *value*.

class spy.SiteFactory
Factory pattern.

get_site(*section*)
Generates Site object.

class spy.TextSite(*args, **kwargs)
Extends default Site behaviour providing more information (unified diff) about changes in text resource.

compare()
Compares files using `difflib.unified_diff`.

spy.main()
Parses system args and runs SPy.

spy.slugify(*value*)
Normalizes string, converts to lowercase, removes non-alpha characters, and converts spaces to hyphens.

USER'S GUIDE

3.1 Configuration

Config file should be under `~/ .spyrc`. For full example see `.spyrc` in sources.

3.1.1 SPY section

SPY section is about email. Here's an example:

```
[SPY]
email_from = sPy <selerto@gmail.com>
email_to = Rafa Selewoko <rselewonko@gmail.com>, Zenek Mietek <selerto@gmail.com>
smtp_host = smtp.gmail.com
smtp_port = 587
smtp_username = selerto@gmail.com
smtp_password = *****
smtp_tls = True
```

3.1.2 Sites sections

Each section that's name is not SPY represents site to check. Here's an example:

```
[Rozkład zajęć]
# choices are text, html, binary
type = html
# choices are online or offline
site = online
# starts with ``http`` if online, with ``/`` if offline
location = http://www.degra.wi.pb.edu.pl/rozklady/rozklad.php?page=st

# slug is only required if you want to check each site separately
slug = rozkladzajec
```

3.2 Running sPy

To check all sites:

```
./spy.py or python3 /location/of/spy.py
```

To check specified sites:

```
python3 /location/of/spy.py site1_slug site2_slug
```

It's the best to run sPy from **cron** or **Windows Task Sheduler**.

REQUIREMENTS

- python3

LICENSE

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