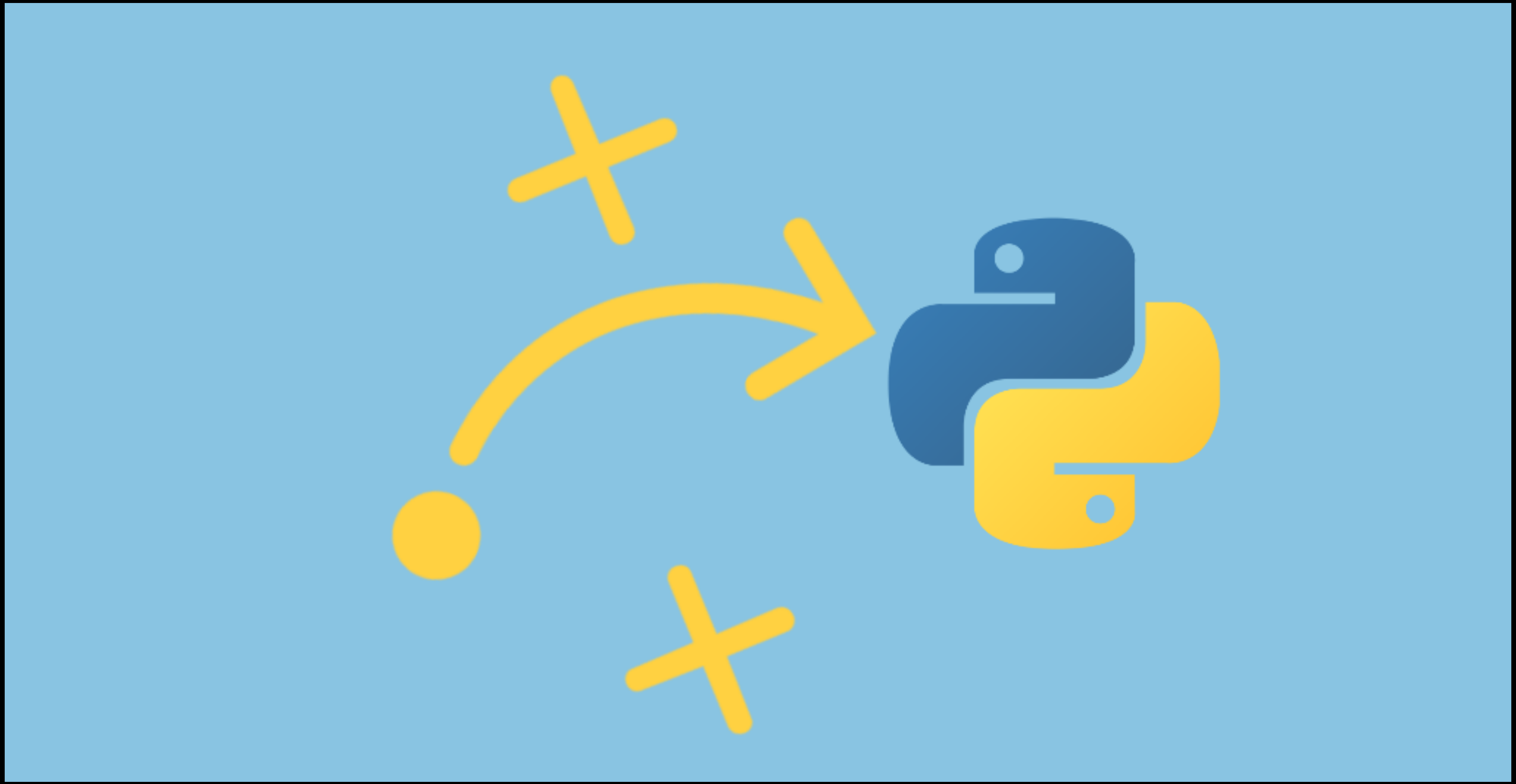
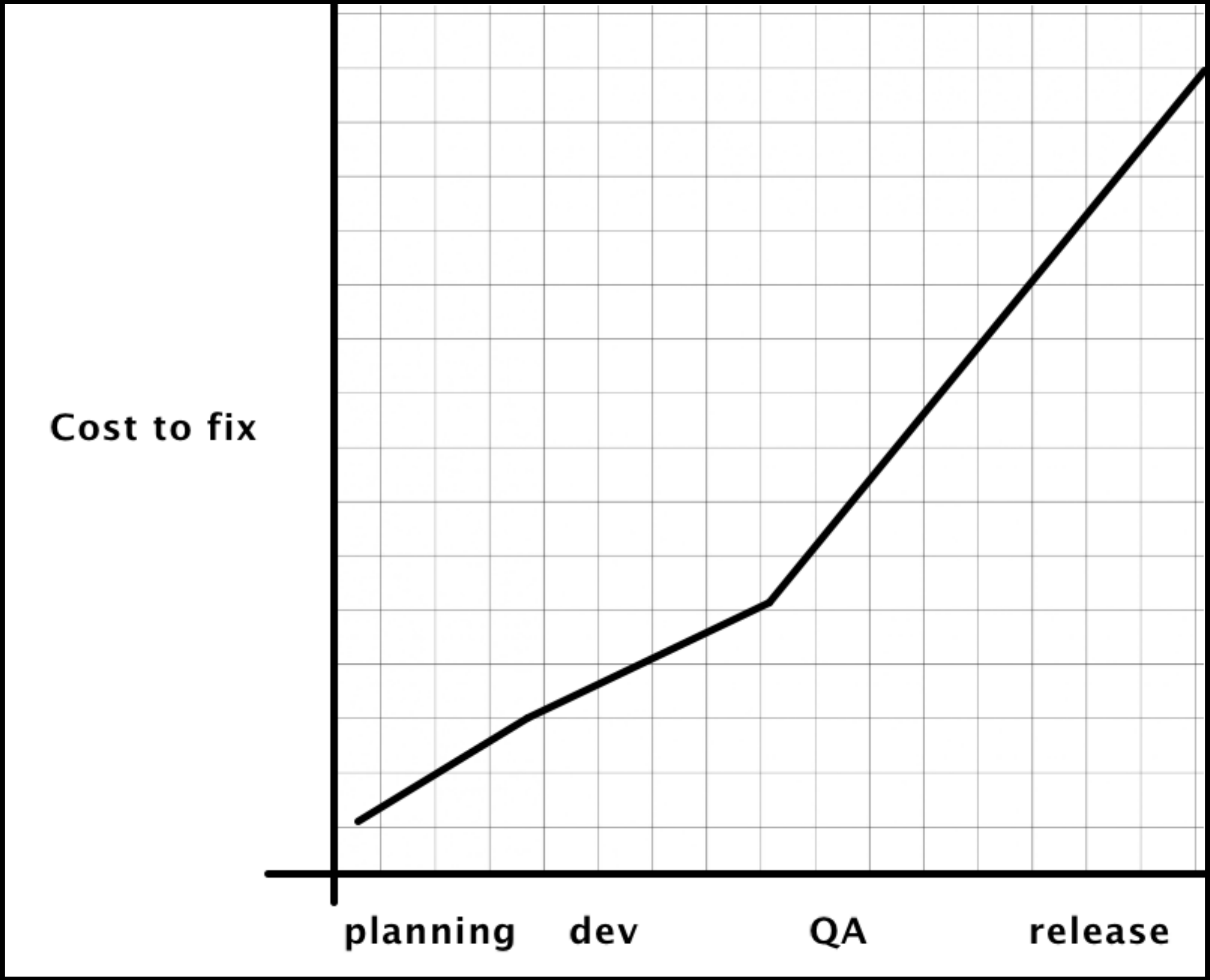
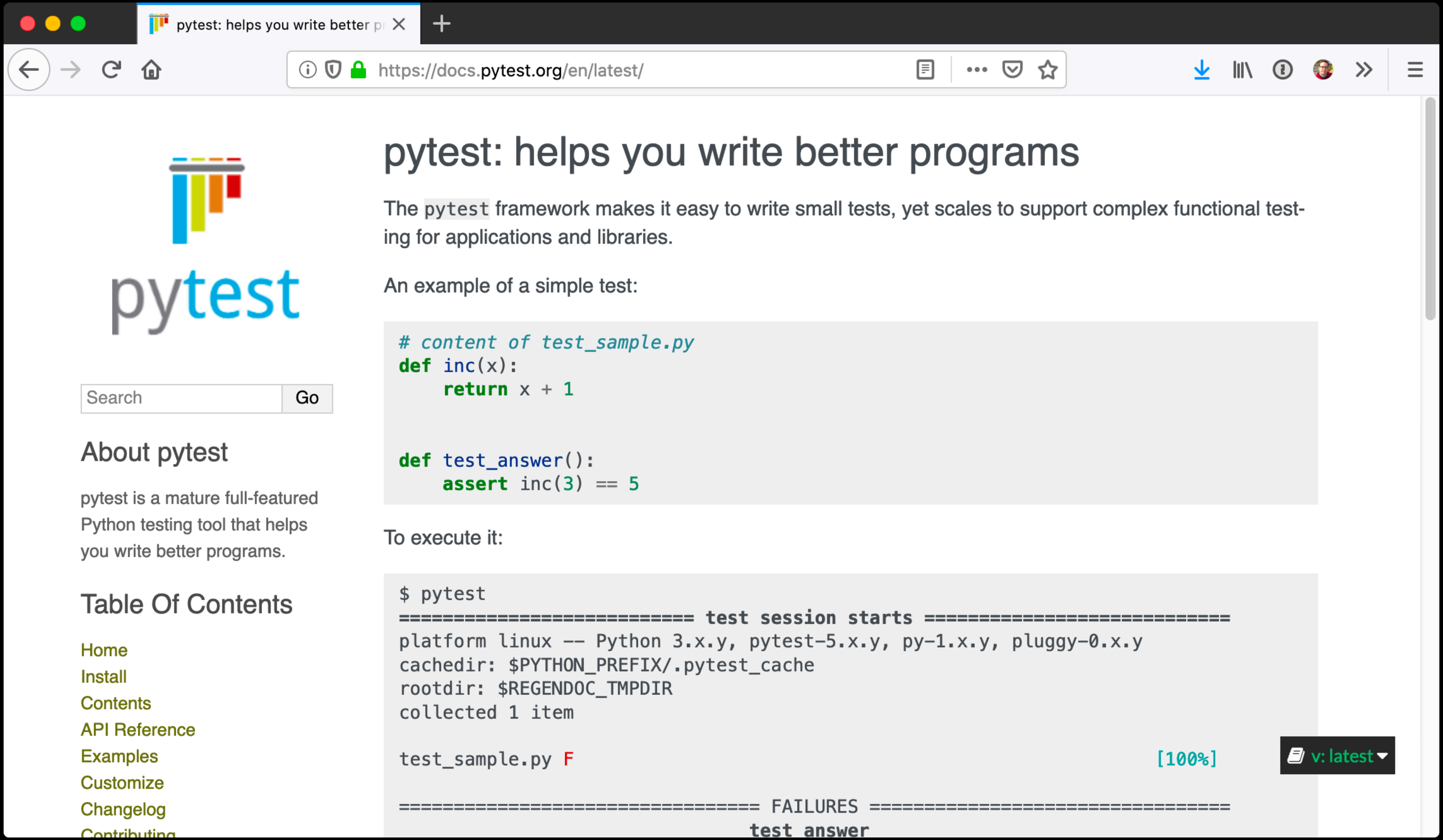
Testing



Testing lowers overall cost of systems



Python has a built-in version, but **`pytest`**



pytest: helps you write better p

https://docs.pytest.org/en/latest/

pytest

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About pytest

pytest is a mature full-featured Python testing tool that helps you write better programs.

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pytest: helps you write better programs

The `pytest` framework makes it easy to write small tests, yet scales to support complex functional testing for applications and libraries.

An example of a simple test:

```python
# content of test_sample.py
def inc(x):
    return x + 1


def test_answer():
    assert inc(3) == 5
```

To execute it:

```
$ pytest
=========================== test session starts ============================
platform linux -- Python 3.x.y, pytest-5.x.y, py-1.x.y, pluggy-0.x.y
cachedir: $PYTHON_PREFIX/.pytest_cache
rootdir: $REGENDOC_TMPDIR
collected 1 item

test_sample.py F                                                     [100%]

================================= FAILURES =================================
                                test_answer
```

v: latest

A basic pytest test

Name starts with test_ has 'raw' assert statements

```
def test_electric_guitars():
    guitars = lib.all_guitars('electric')

    # Sweet little generator expression
    assert all(g.style == 'electric' for g in guitars)
```

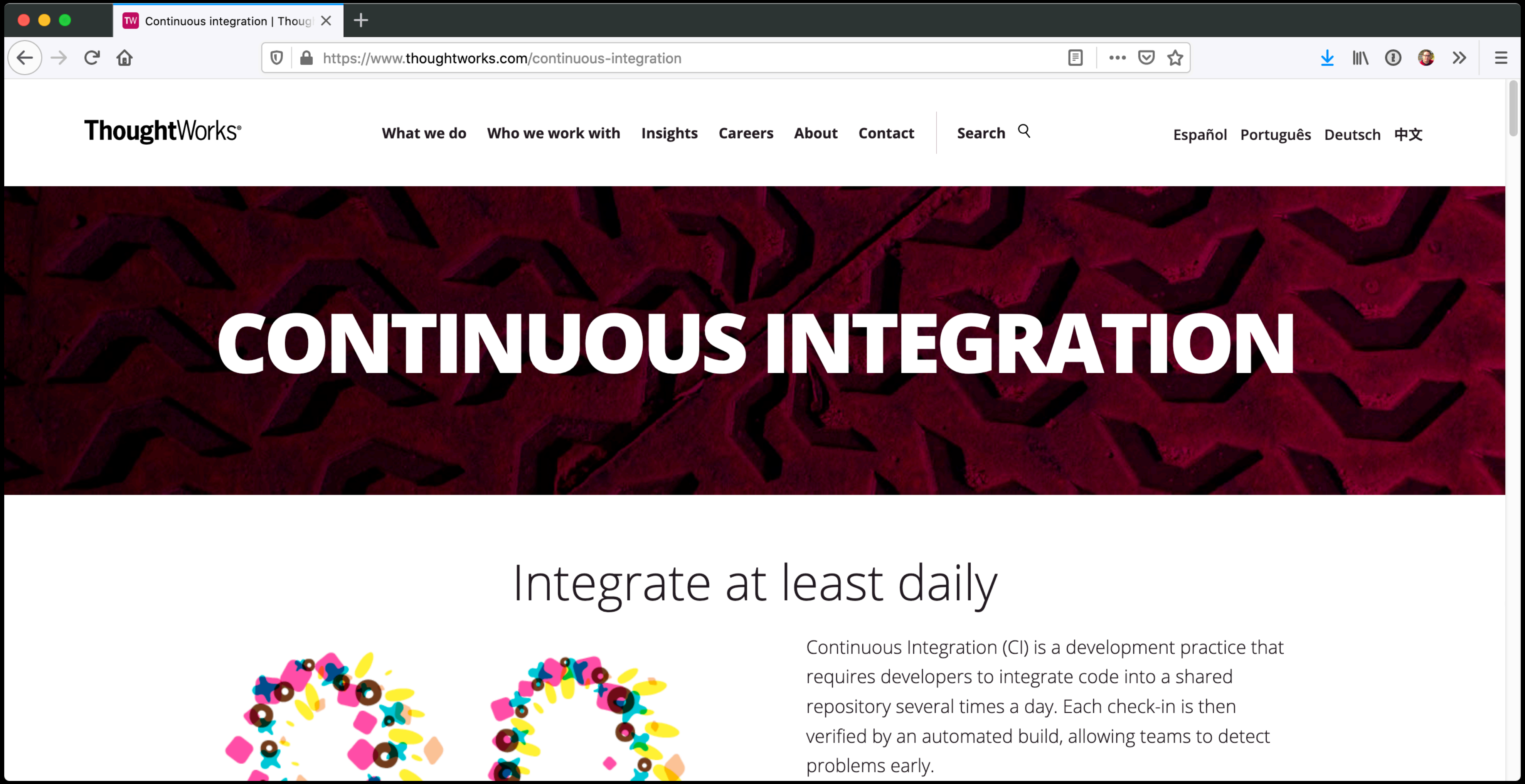
Testing for errors

```
def test_input_validation():

    with pytest.raises(ValueError):
        lib.all_guitars(None)
```

Test for errors (exceptions) with **`pytest.raises(TYPE)`**.

Pairs well with continuous integration



CONTINUOUS INTEGRATION

Integrate at least daily

Continuous Integration (CI) is a development practice that requires developers to integrate code into a shared repository several times a day. Each check-in is then verified by an automated build, allowing teams to detect problems early.

https://www.thoughtworks.com/continuous-integration