最全的Pytest+Allure使用教程，建议收藏

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Allure是开源的免费的自动化测试报告，支持Java,Python，我们来看看如何使用Python pytest与Allure整合，输出漂亮的测试报告。

一.Allure安装

```
windows：下载，解压，并配置环境变量：https://github.com/allure-framework/allure2/releases
mac：brew install allure
```

二.Allure报告结构

1.Overview:整体数据显示。

2.Suites:用例集合,按照套件和类分组的已执行测试的标准结构表示形式。

3.Behaviors：对于行为驱动的方法，此选项卡根据Epic、Feature和Story标记对测试结果进行分组。

4.Categories：“类别”选项卡提供了创建自定义缺陷分类以应用测试结果的方法。

5.Graphs：用图表显示测试数据中收集的不同统计数据，状态分解或严重性和持续时间图。

6.Packages：软件包选项卡表示测试结果的树状布局，按不同的包名分组。

7.Timeline：时间轴选项卡可视化测试执行的回顾，allure适配器收集测试的精确时间，在这个选项卡上，它们相应地按照顺序或并行的时间结构排列。

三.安装Python依赖

```
windows：pip install allure-pytest
mac：pip3 install allure-pytest
```

这将安装Allure-pytest和Allure-python-commons包，以生成与Allure 2兼容的报告数据。

1.Windows

```
C:\Users [redacted] >pip install allure-pytest
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
Collecting allure-pytest
  Using cached allure_pytest-2.9.45-py3-none-any.whl (9.8 kB)
Requirement already satisfied: six>=1.9.0 in d:\program files\python3.8.2\lib\site-packages (from allure-pytest) (1.15.0)
Collecting pytest>=4.5.0
  Using cached pytest-6.2.5-py3-none-any.whl (280 kB)
Collecting allure-python-commons==2.9.45
  Using cached allure_python_commons-2.9.45-py3-none-any.whl (15 kB)
Collecting attrs>=16.0.0
  Using cached attrs-21.3.0-py2.py3-none-any.whl (61 kB)
Collecting pluggy>=0.4.0
  Using cached pluggy-1.0.0-py2.py3-none-any.whl (13 kB)
Collecting packaging
  Using cached packaging-21.3-py3-none-any.whl (40 kB)
Requirement already satisfied: py>=1.8.2 in d:\program files\python3.8.2\lib\site-packages (from pytest>=4.5.0->allure-pytest) (1.10.0)
Collecting colorama
  Using cached colorama-0.4.4-py2.py3-none-any.whl (16 kB)
Collecting toml
  Using cached toml-0.10.2-py2.py3-none-any.whl (16 kB)
Collecting iniconfig
  Using cached iniconfig-1.1.1-py2.py3-none-any.whl (5.0 kB)
Collecting atomicwrites>=1.0
  Using cached atomicwrites-1.4.0-py2.py3-none-any.whl (6.8 kB)
Collecting pyparsing!=3.0.5,>=2.0.2
  Using cached pyparsing-3.0.6-py3-none-any.whl (97 kB)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
Installing collected packages: pyparsing, toml, pluggy, packaging, iniconfig, colorama, attrs, atomicwrites, pytest, allure-python-commons, allu
re-pytest
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
Successfully installed allure-pytest-2.9.45 allure-python-commons-2.9.45 atomicwrites-1.4.0 attrs-21.3.0 colorama-0.4.4 iniconfig-1.1.1 packagin
g-21.3 pluggy-1.0.0 pyparsing-3.0.6 pytest-6.2.5 toml-0.10.2
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
```

```
C:\Users\__\>pip list
WARNING: Ignoring invalid distribution -ip (d:\program files\python3.8.2\lib\site-packages)
Package                Version
---------------------- ---------
airtest                1.2.1
allure-pytest          2.9.45
allure-python-commons  2.9.45
```

2.Mac

```
MacBook-Pro-3 100% ~ pip3 install allure-pytest
Collecting allure-pytest
  Using cached allure_pytest-2.9.45-py3-none-any.whl (9.8 kB)
Collecting allure-python-commons==2.9.45
  Using cached allure_python_commons-2.9.45-py3-none-any.whl (15 kB)
Requirement already satisfied: six>=1.9.0 in /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages (from allure-pytest) (1.16.0)
Requirement already satisfied: pytest>=4.5.0 in /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages (from allure-pytest) (6.2.5)
Requirement already satisfied: pluggy>=0.4.0 in /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages (from allure-python-commons==2.9.45->allure-pytest
) (1.0.0)
Requirement already satisfied: attrs>=16.0.0 in /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages (from allure-python-commons==2.9.45->allure-pytest
) (21.3.0)
Requirement already satisfied: py>=1.8.2 in /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages (from pytest>=4.5.0->allure-pytest) (1.10.0)
Requirement already satisfied: iniconfig in /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages (from pytest>=4.5.0->allure-pytest) (1.1.1)
Requirement already satisfied: packaging in /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages (from pytest>=4.5.0->allure-pytest) (20.9)
Requirement already satisfied: toml in /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages (from pytest>=4.5.0->allure-pytest) (0.10.2)
Requirement already satisfied: pyparsing>=2.0.2 in /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages (from packaging->pytest>=4.5.0->allure-pytest)
(2.4.7)
Installing collected packages: allure-python-commons, allure-pytest
Successfully installed allure-pytest-2.9.45 allure-python-commons-2.9.45
MacBook-Pro-3 100% ~ pip3 list
Package              Version
-------------------- ---------
adbutils             0.11.0
airtest              1.1.11
allure-pytest        2.9.45
allure-python-commons 2.9.45
```

四.基本用法

Allure监听器在测试执行期间会收集结果，只需添加alluredir选项，并选择输出的文件路径即可。

```
pytest --alluredir=./allure-results
```

```
MacBook-Pro-3 100% ~/Documents/otherdocument/python_project/python-allure pytest --alluredir=./allure-results
zsh: /usr/local/bin/pytest: bad interpreter: /usr/local/opt/python/bin/python3.7: no such file or directory
============================= test session starts ==============================
platform darwin -- Python 3.9.5, pytest-6.2.5, py-1.10.0, pluggy-1.0.0
rootdir: [redacted] /Documents/otherdocument/python_project/python-allure
plugins: allure-pytest-2.9.45
collected 0 items

============================ no tests ran in 0.03s =============================
MacBook-Pro-3 100% ~/Documents/otherdocument/python_project/python-allure ls
allure-results  main.py  redMe.md
```

```
# 执行此命令，将在默认浏览器中显示生成的报告
allure serve ./allure-results
```

五.Allure注解说明：

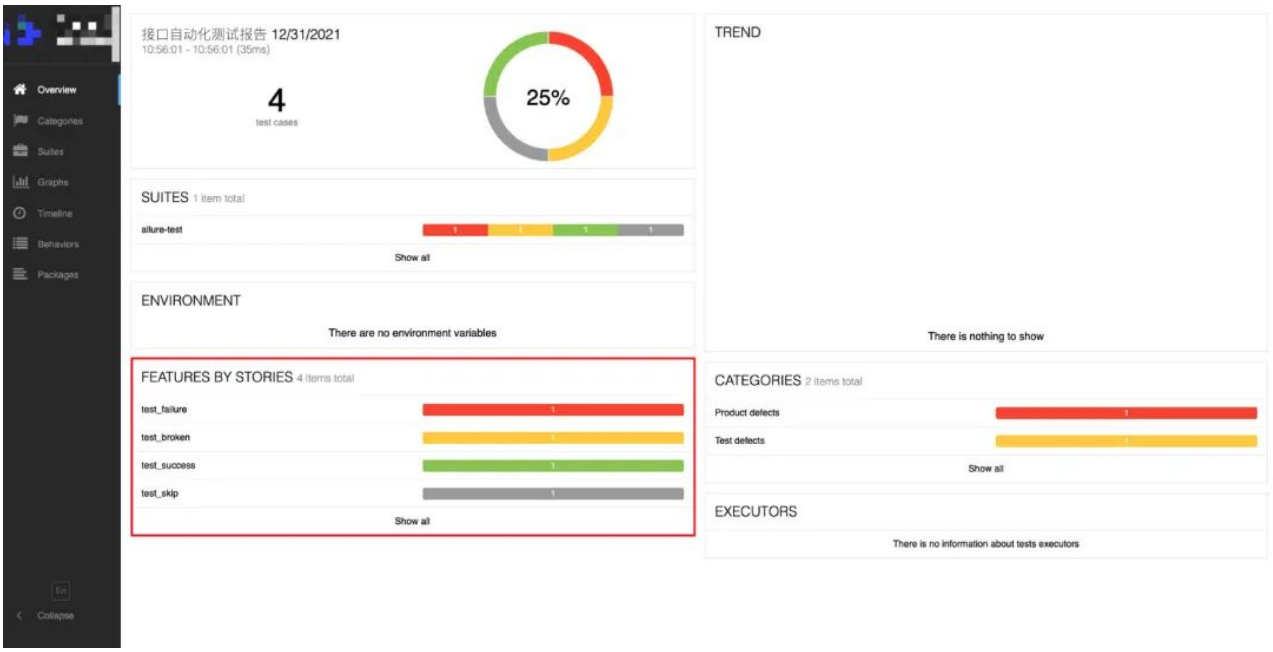
使用方法	参数值	参数说明
@allure.epic()	epic描述	敏捷里面的概念，定义史诗，往下是feature
@allure.feature()	模块名称	功能点的描述，往下是story
@allure.story()	用户故事	用户故事，往下是title
@allure.title(用例的标题)	用例的标题	重命名html报告名称
@allure.testcase()	测试用例的链接地址	对应功能测试用例系统里面的case
@allure.issue()	缺陷	对应缺陷管理系统里面的链接
@allure.description()	用例描述	测试用例的描述
@allure.step()	操作步骤	测试用例的步骤
@allure.severity()	用例等级	blocker，critical，normal，minor，trivial
@allure.link()	链接	定义一个链接，在测试报告展现
@allure.attachment()	附件	报告添加附件

六.具体使用方法(以Mac系统为例)

基本报告：可以在Allure报告中看到所有默认的pytest状态: 只有由于断言错误而未成功的测试才会被标记为失败，任何其他异常都会导致测试状态失败。

```
import allure
import pytest

@allure.feature('test_success')
def test_success():
    """this test succeeds"""
    assert True

@allure.feature('test_failure')
def test_failure():
    """this test fails"""
    assert False

@allure.feature('test_skip')
def test_skip():
    """this test is skipped"""
    pytest.skip('for a reason!')

@allure.feature('test_broken')
def test_broken():
    raise Exception('oops')

if __name__ == '__main__':
    # pytest.main(["-s","allure-test.py"])
    '''
    -q: 安静模式, 不输出环境信息
    -v: 丰富信息模式, 输出更详细的用例执行信息
    -s: 显示程序中的print/logging输出
    '''
    pytest.main(['-s', '-q','test_allure02.py','--clean-alluredir','--
alluredir=allure-results'])
    os.system(r"allure generate -c -o allure-report")
```

命令行输入allure generate -c -o allure-reports,即可在当前路径下生成测试报告。(-c:清空历史数据，-o:指定输出测试报告路径)，如果使用allure serve allure-results,则会在系统默认目录下生成测试报告



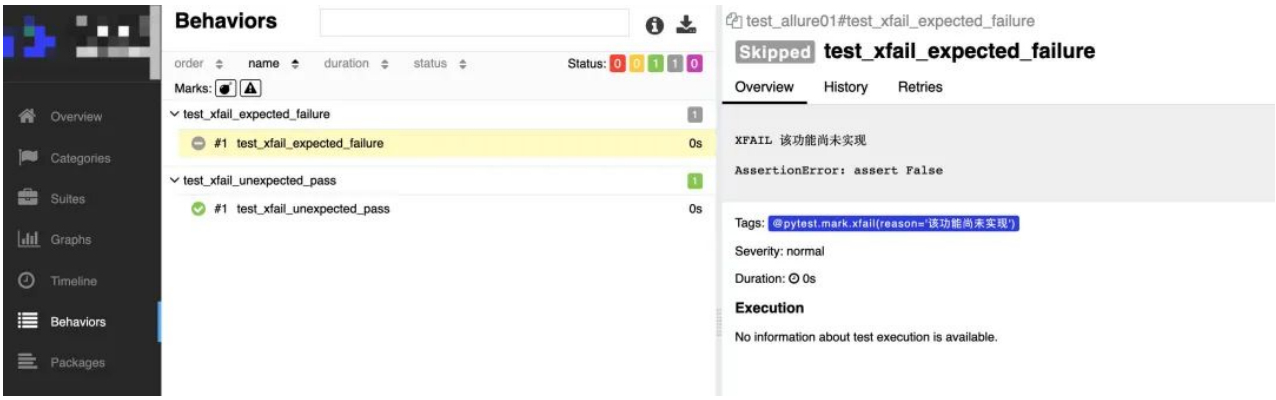
七.支持Pytest特性

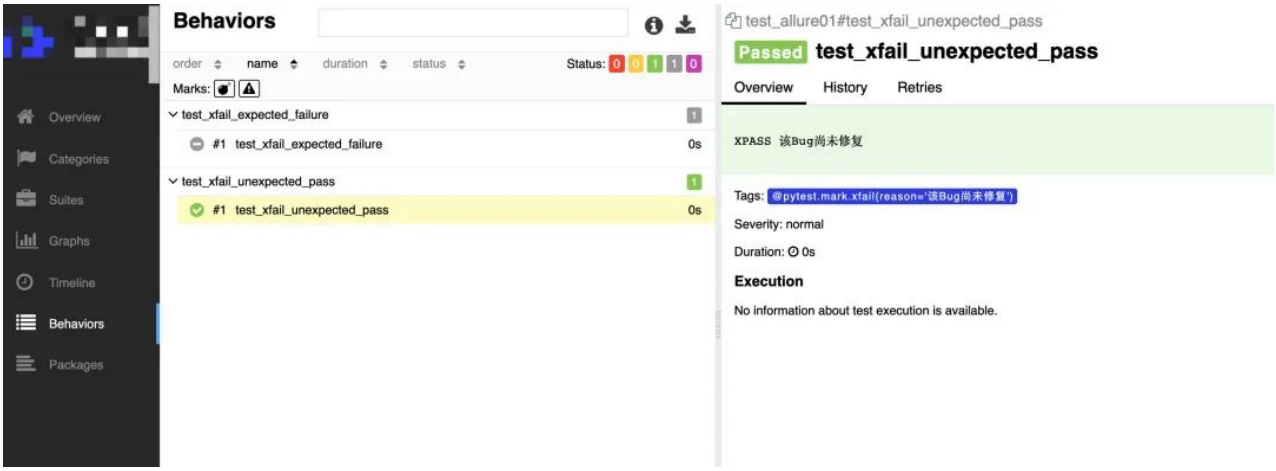
Allure报告支持的一些常见Pytest特性，包括xfails、fixture和finalizers、marks、条件跳过和参数化。

1.xfail

功能未实现或者有Bug尚未修复，当测试通过时尽管会失败，它是一个xpass，将在测试摘要中报告。

```
import allure
import pytest

@allure.feature('test_xfail_expected_failure')
@pytest.mark.xfail(reason='该功能尚未实现')
def test_xfail_expected_failure():
    print("该功能尚未实现")
    assert False

@allure.feature('test_xfail_unexpected_pass')
@pytest.mark.xfail(reason='该Bug尚未修复')
def test_xfail_unexpected_pass():
    print("该Bug尚未修复")
    assert True

if __name__ == '__main__':
    pytest.main(['-s', '-q','test_allure02.py','--clean-alluredir','--
alluredir=allure-results'])
    os.system(r"allure generate -c -o allure-report")
```

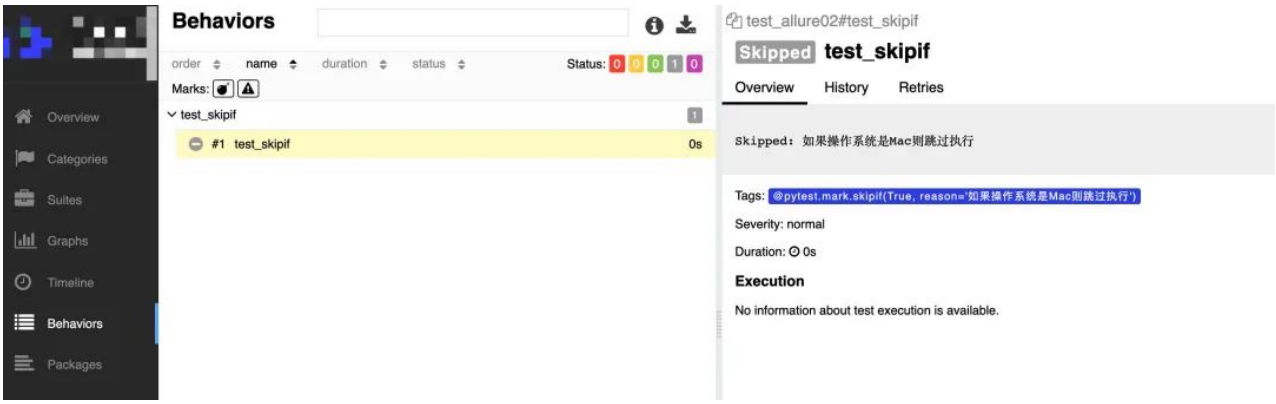




2.skipif

当条件为True，跳过执行

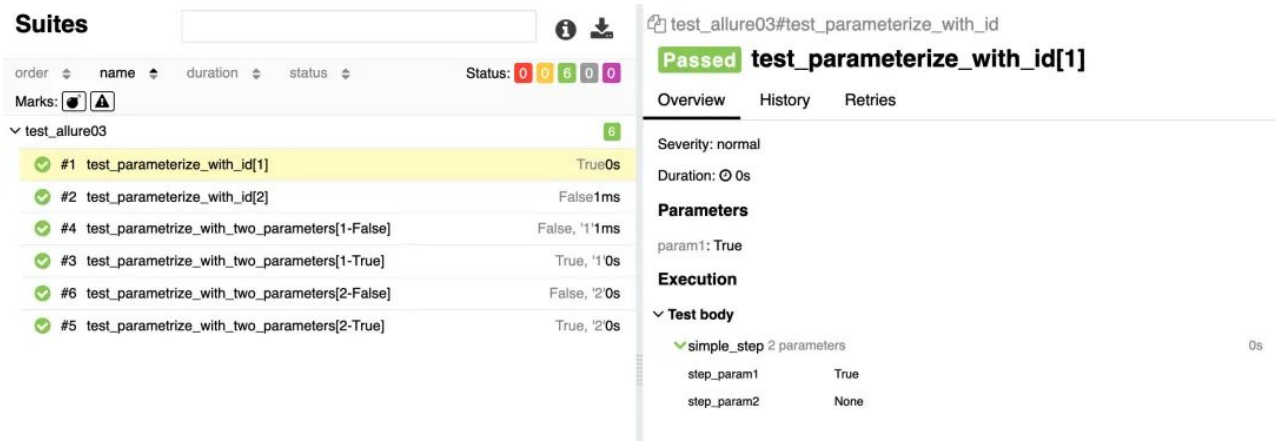
```
import sys
import allure
import pytest

'''当条件为True则跳过执行'''
@allure.feature("test_skipif")
@pytest.mark.skipif("darwin" in sys.platform,reason="如果操作系统是Mac则跳过执行")
def test_skipif():
    print("操作系统是Mac，test_skipif()函数跳过执行")

# --clean-alluredir:每次执行前清空数据，这样在生成的报告中就不会追加，只显示当前执行的用例
if __name__ == '__main__':
    pytest.main(['-s', '-q','test_allure02.py','--clean-alluredir','--
alluredir=allure-results'])
    os.system(r"allure generate -c -o allure-report")
```



3.parametrize

可以使用@Pytest.mark.paramtrize进行参数化，所有参数名称和值都将被捕获到报告中。

```
import os
import allure
import pytest

@allure.step
def simple_step(step_param1, step_param2 = None):
    pass

@pytest.mark.parametrize('param1', [True, False], ids=['1', '2'])
def test_parameterize_with_id(param1):
    simple_step(param1)

@pytest.mark.parametrize('param1', [True, False])
@pytest.mark.parametrize('param2', ['1', '2'])
def test_parametrize_with_two_parameters(param1, param2):
    simple_step(param1, param2)

# --clean-alluredir:每次执行前清空数据，这样在生成的报告中就不会追加，只显示当前执行的用例
if __name__ == '__main__':
    pytest.main(['-s', '-q','test_allure03.py','--clean-alluredir','--
alluredir=allure-results'])
    os.system(r"allure generate -c -o allure-report")
```



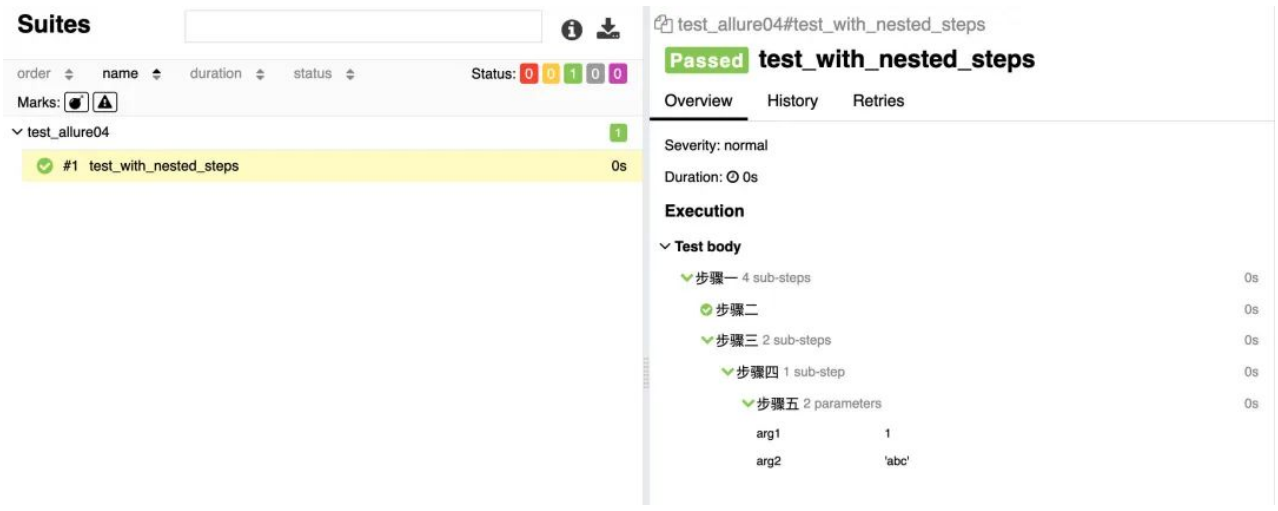
4.feature

模块名称，功能点描述

5.step

Allure生成的测试报告最重要的一点就是，它允许对每个测试用例进行非常详细的步骤说明

```
import os
import allure
import pytest

@allure.step("步骤二")
def passing_step():
    pass


@allure.step("步骤三")
def step_with_nested_steps():
    nested_step()


@allure.step("步骤四")
def nested_step():
    nested_step_with_arguments(1, 'abc')


@allure.step("步骤五")
def nested_step_with_arguments(arg1, arg2):
    pass


@allure.step("步骤一")
def test_with_nested_steps():
    passing_step()
    step_with_nested_steps()


if __name__ == '__main__':
    pytest.main(['-s', '-q','test_allure04.py','--clean-alluredir','--
alluredir=allure-results'])
    os.system(r"allure generate -c -o allure-report")
```



6.attach

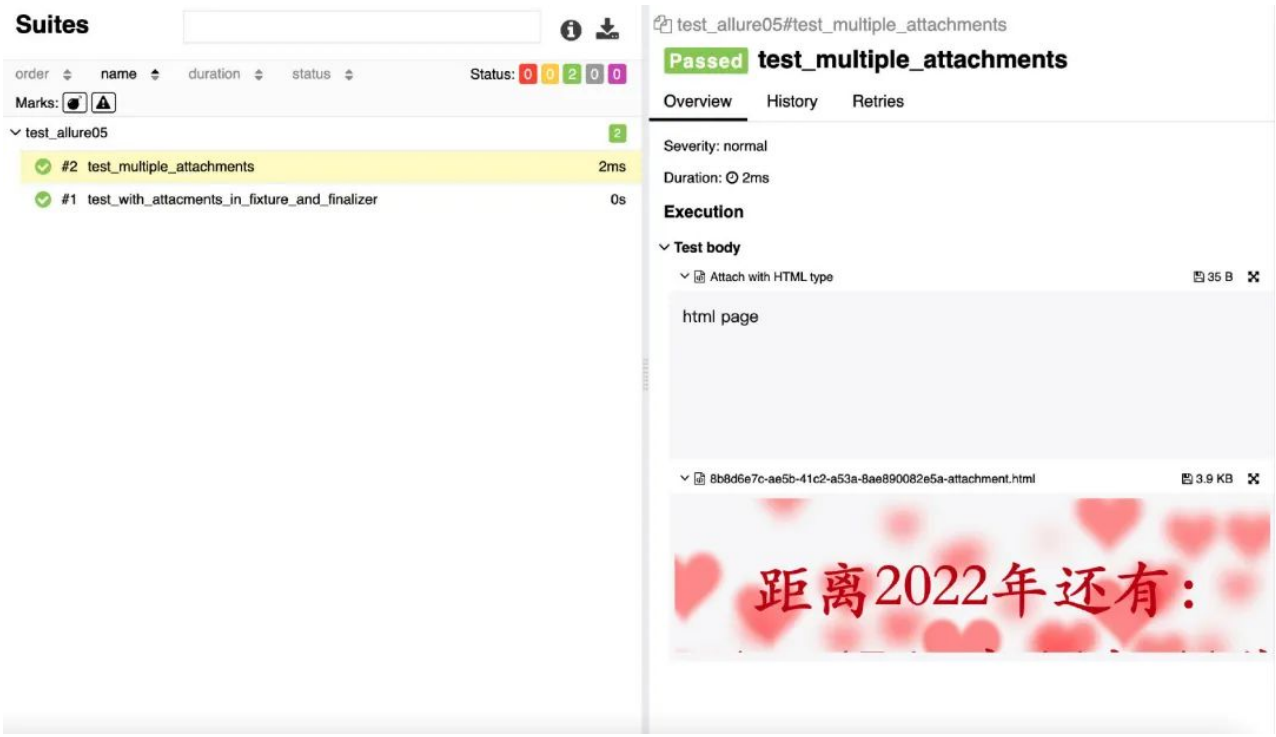
Allure测试报告可以显示许多不同类型的附件，这些附件可以补充测试、步骤或结果。可以使用allure.attach(body、name、attachment_type、extension)调用来创建附件。

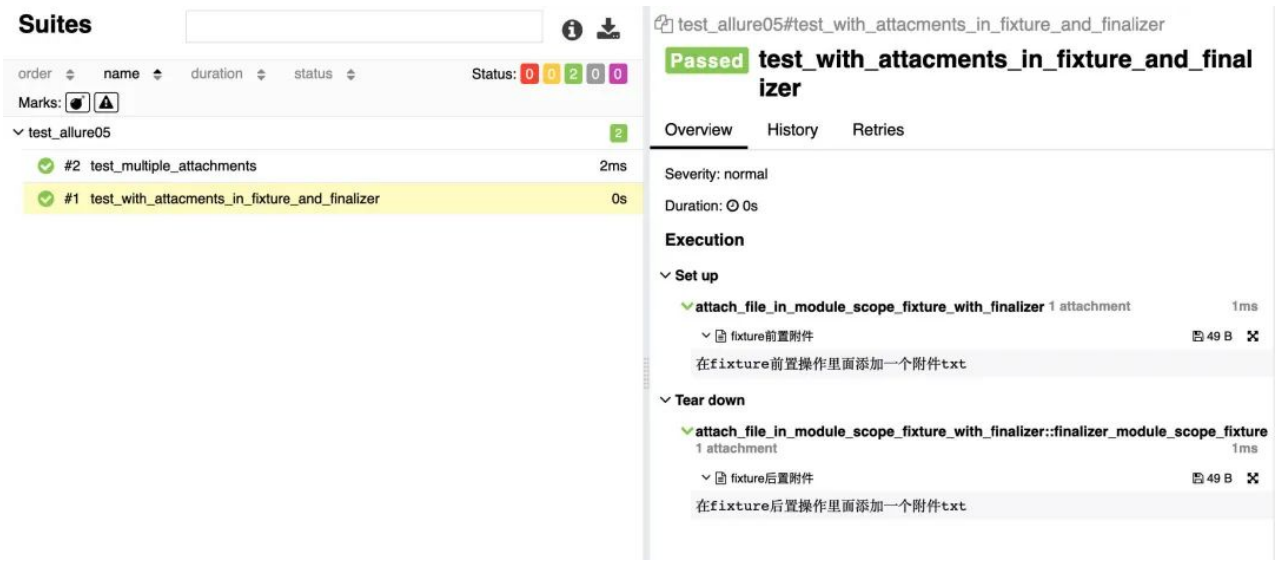
- body：要显示的内容（附件）
- name：附件名字
- attachment_type：附件类型，是allure.attachment_type里面的其中一种
- extension：附件的扩展名
- source：文件路径

语法一：allure.attach(body,name,attachment_type,extension)

语法二：allure.attach.file(source,name,attachment_type,extension)

```
import os
import allure
import pytest

@pytest.fixture
def attach_file_in_module_scope_fixture_with_finalizer(request):
    allure.attach('在fixture前置操作里面添加一个附件txt', 'fixture前置附件',
allure.attachment_type.TEXT)

    def finalizer_module_scope_fixture():
        allure.attach('在fixture后置操作里面添加一个附件txt', 'fixture后置附
件',allure.attachment_type.TEXT)
    request.addfinalizer(finalizer_module_scope_fixture)


def
test_with_attacments_in_fixture_and_finalizer(attach_file_in_module_scope_fixture_w

    pass


def test_multiple_attachments():
    allure.attach('<head></head><body>html page</body>', 'Attach with HTML type',
allure.attachment_type.HTML)
    allure.attach.file('/Users/mrjade/Downloads/happy-new-year.html',
attachment_type=allure.attachment_type.HTML)


if __name__ == '__main__':
    pytest.main(['-s', '-q','test_allure05.py','--clean-alluredir','--
alluredir=allure-results'])
    os.system(r"allure generate -c -o allure-report")
```





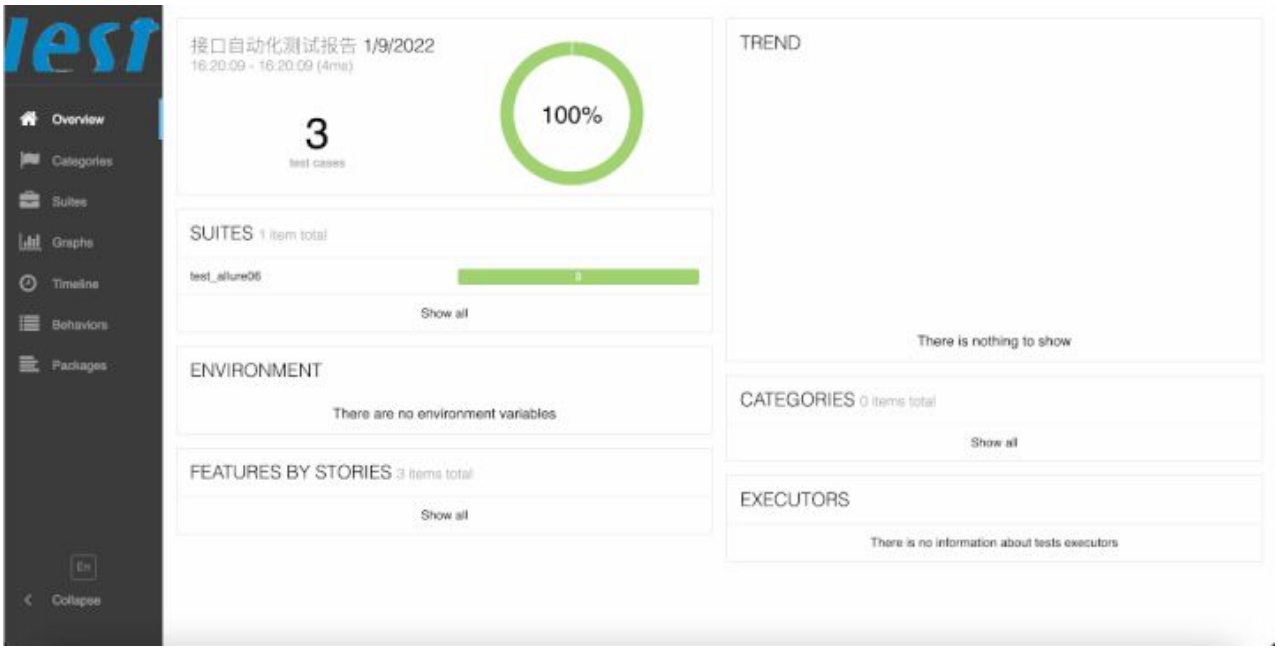
7.description

描述类信息，比如对函数的描述，说明这个函数的作用，如：注册接口。

语法一：@allure.description()

语法二：@allure.description_html()

```
import os
import allure
import pytest

@allure.description_html("""
<h1>这是html描述</h1>
<table style="width:100%">
  <tr>
    <th>Firstname</th>
    <th>Lastname</th>
    <th>Age</th>
  </tr>
  <tr align="center">
    <td>jade</td>
    <td>mr</td>
    <td>18</td>
  </tr>
  <tr align="center">
    <td>road</td>
    <td>Tester</td>
    <td>18</td>
  </tr>
</table>
""")
def test_html_description():
    assert True

@allure.description("""多行描述""")
def test_description_from_decorator():
    assert 42 == int(6 * 7)

def test_unicode_in_docstring_description():
    """在函数下方描述也可"""
    assert 42 == int(6 * 7)


if __name__ == '__main__':
    pytest.main(['-s', '-q','test_allure06.py','--clean-alluredir','--
alluredir=allure-results'])
    os.system(r"allure generate -c -o allure-report")
```

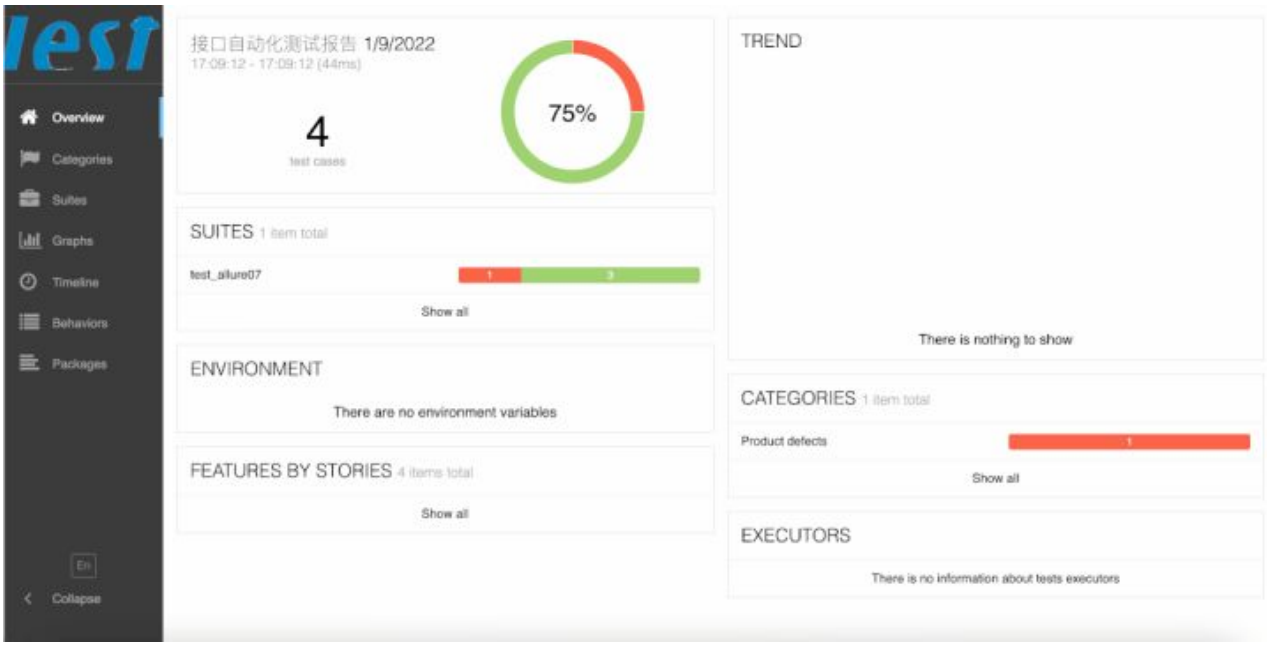


GIF

8.title

- 添加测试用例标题，通俗来讲就是将函数名直接改成我们想要的，使得测试用例的标题更具有可读性
- 支持占位符传递关键字参数（动态标题，结合@pytest.mark.parametrize使用）

```
import os
import allure
import pytest

@allure.title("断言2+2=4")
def test_with_a_title():
    assert 2 + 2 == 4

@allure.title("动态标题: {param1} + {param2} = {expected}")
@pytest.mark.parametrize('param1,param2,expected', [(2, 2, 4),(1, 2, 5)])
def test_with_parameterized_title(param1, param2, expected):
    assert param1 + param2 == expected

@allure.title("这是个动态标题，会被替换")
def test_with_dynamic_title():
    assert 2 + 2 == 4
    allure.dynamic.title('测试结束，做为标题')


if __name__ == '__main__':
    pytest.main(['-s', '-q','test_allure07.py','--clean-alluredir','--
alluredir=allure-results'])
    os.system(r"allure generate -c -o allure-report")
```

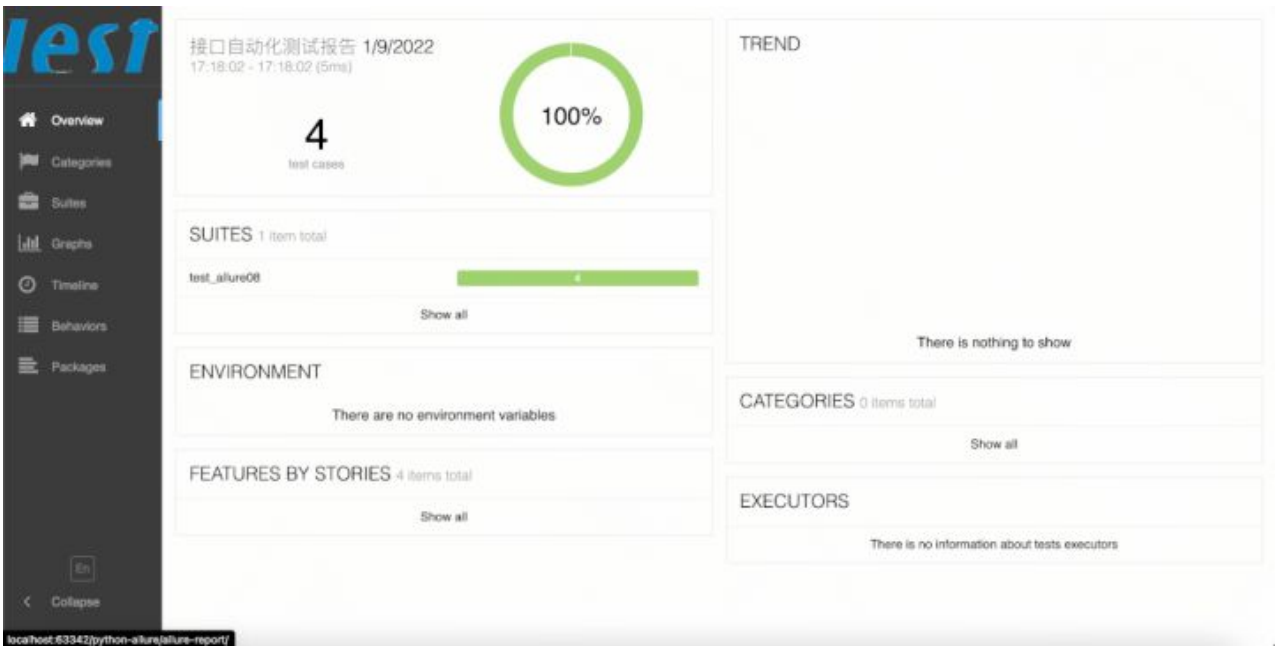


GIF

9.link

将测试报告与缺陷跟踪或测试管理系统整合，@allure.link、@allure.issue和@allure.testcase。

```
import os
import allure
import pytest

@allure.link('https://www.cnblogs.com/mrjade/')
def test_with_link():
    pass


@allure.link('https://www.cnblogs.com/mrjade/', name='点击进入mrjade博客园')
def test_with_named_link():
    pass


@allure.issue('https://github.com/allure-framework/allure-python/issues/642', 'bug
issue链接')
def test_with_issue_link():
    pass


@allure.testcase("https://www.cnblogs.com/mrjade/", '测试用例地址')
def test_with_testcase_link():
    pass

if __name__ == '__main__':
    pytest.main(['-s', '-q','test_allure08.py','--clean-alluredir','--
alluredir=allure-results'])
    os.system(r"allure generate -c -o allure-report")
```



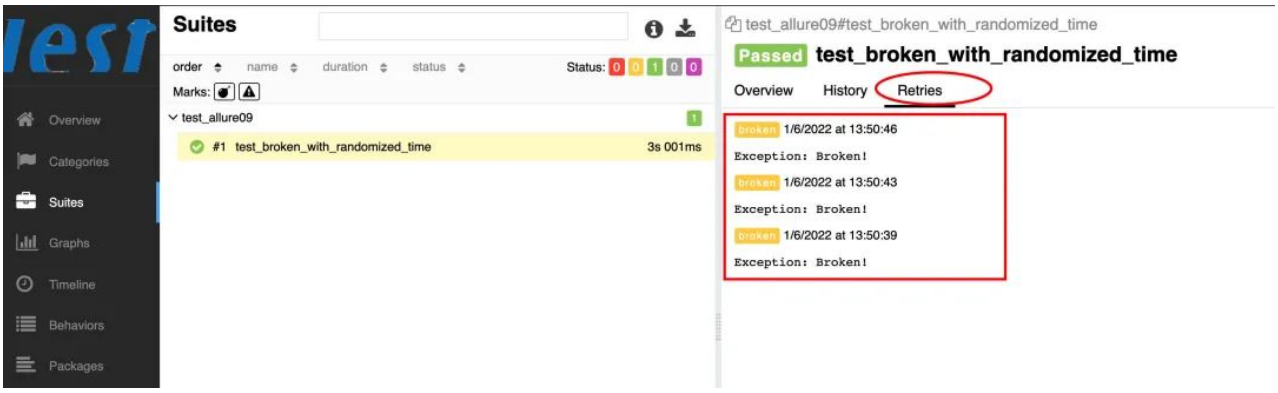
GIF

10.Retries

Allure允许测试报告中显示单个测试运行期间重新执行的测试的信息，以及一段时间内测试执行的历史,需与Pytest插件结合使用。

```
windows：pip install pytest-rerunfailures
mac：pip3 install pytest-rerunfailures
```

```
import os
import allure
import random
import time
import pytest


@allure.step
def passing_step():
    pass


@allure.step
def flaky_broken_step():
    if random.randint(1, 5) != 1:
        raise Exception('Broken!')


"""需安装【pip3 install pytest-rerunfailures】"""
@pytest.mark.flaky(reruns=3, reruns_delay=1)  # 如果失败则延迟1s后重试
def test_broken_with_randomized_time():
    passing_step()
    time.sleep(random.randint(1, 3))
    flaky_broken_step()

if __name__ == '__main__':
    pytest.main(['-s', '-q','test_allure09.py','--clean-alluredir','--
alluredir=allure-results'])
    os.system(r"allure generate -c -o allure-report")
```



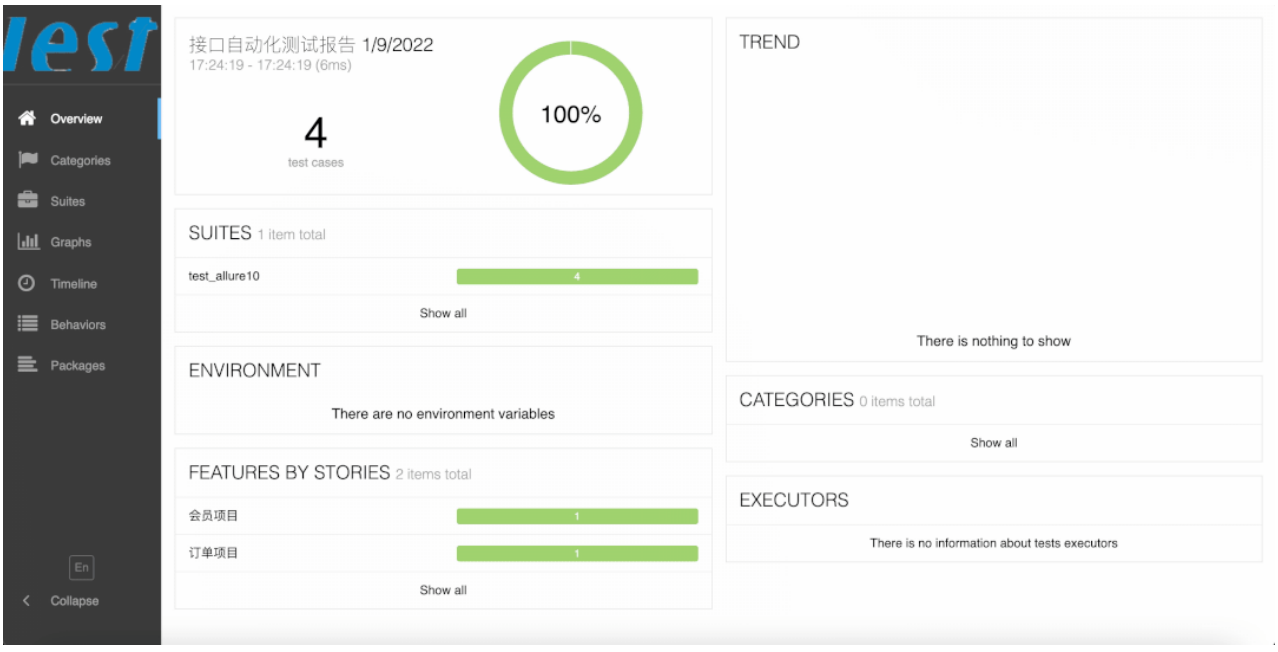
11.tags

我们希望对执行的测试用例保持灵活性。Pytest允许使用标记修饰符@pytest.mark，Allure提供了3种类型的标记装饰符

- BDD样式的标记装饰器
- @allure.epic：敏捷里面的概念，定义史诗，往下是feature
- @allure.feature：功能点的描述，理解成模块往下是story
- @allure.story：故事，往下是title
- 优先级（严重程度）标记装饰器 根据严重程度来标记你的测试。严重程度装饰器，它使用一个allure.severity_level enum值作为参数。如：@allure.severity(allure.severity_level.TRIVIAL)
- 自定义标记装饰器

```
import os
import allure
import pytest

@pytest.fixture(scope="session")
def login_fixture():
    print("前置登录")


@allure.step("步骤1")
def step_1():
    print("操作步骤1")


@allure.step("步骤2")
def step_2():
    print("操作步骤2")


@allure.step("步骤3")
def step_3():
    print("操作步骤3")


@allure.step("步骤4")
def step_4():
    print("操作步骤4")

@allure.epic("会员项目")
@allure.feature("登录")
class TestAllureALL:

    @allure.testcase("https://www.cnblogs.com/mrjade/", '测试用例,点我一下')
    @allure.issue("https://github.com/allure-framework/allure-python/issues/642",
'Bug 链接,点我一下')
    @allure.title("用户名错误")
    @allure.story("登录测试用例1")
    @allure.severity(allure.severity_level.TRIVIAL) # 不重要的
    # @allure.severity(allure.severity_level.MINOR) # 轻微的
    # @allure.severity(allure.severity_level.BLOCKER)  # 阻塞的
    # @allure.severity(allure.severity_level.CRITICAL)  # 严重的
    # @allure.severity(allure.severity_level.NORMAL)  # 普通的
    def test_case_1(self):
        """
        公众号：测试工程师成长之路
        """
        print("测试用例1")
        step_1()
        step_2()

    @allure.title("用户名正确，密码错误")
    @allure.story("登录测试用例2")
    def test_case_2(self):
        print("测试用例2")
        step_1()
        step_3()
```

```
@allure.epic("订单项目")
@allure.feature("支付")
class TestAllureALL2:
    @allure.title("支付成功")
    @allure.story("支付测试用例例1")
    def test_case_1(self, login_fixture):
        print("支付测试用例例1")
        step_3()

    @allure.title("支付失败")
    @allure.story("支付测试用例例2")
    def test_case_2(self, login_fixture):
        print("支付测试用例例2")
        step_4()

if __name__ == '__main__':
    pytest.main(['-s', '-q','test_allure10.py','--clean-alluredir','--
alluredir=allure-results'])
    os.system(r"allure generate -c -o allure-report")
```



GIF

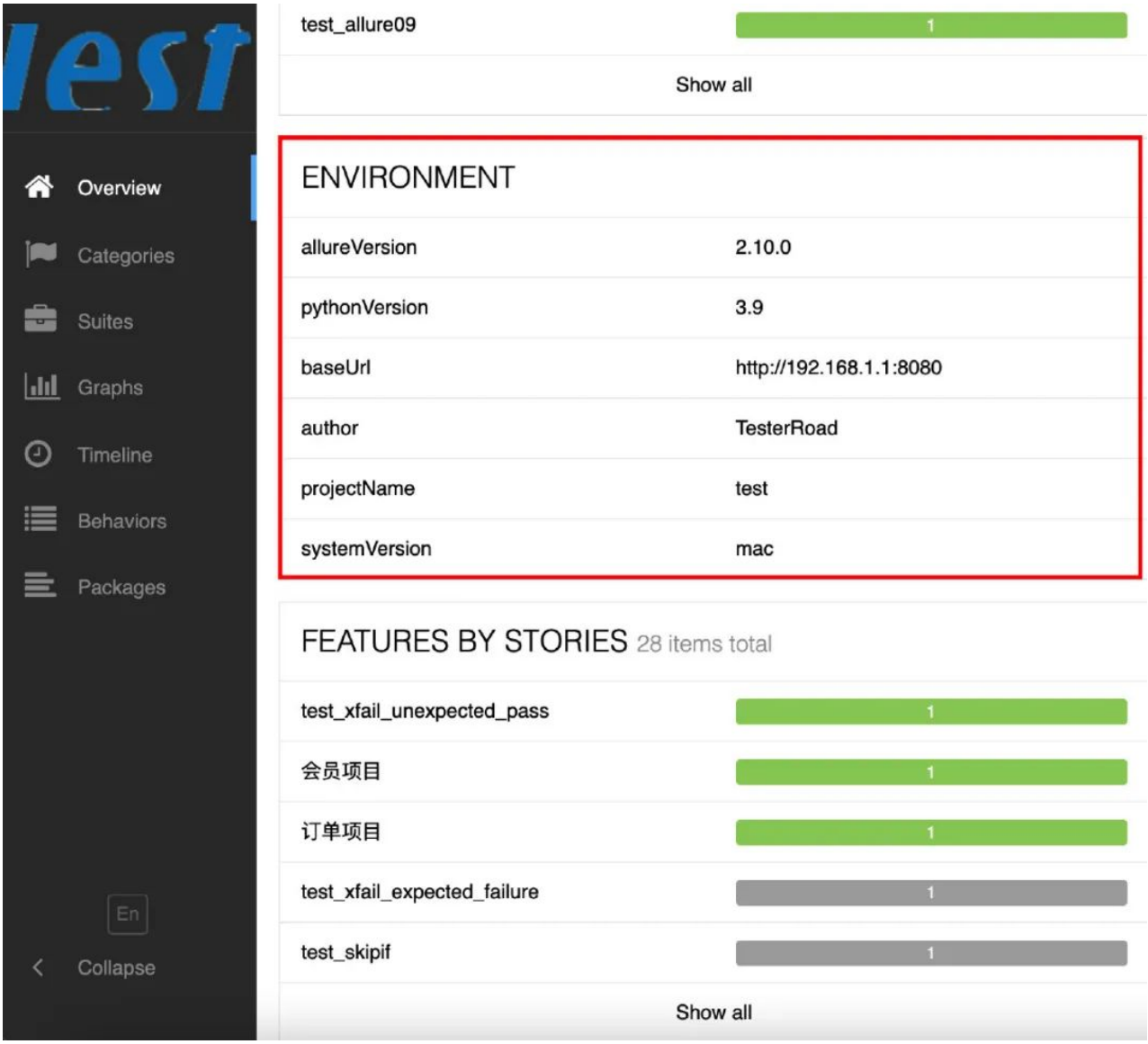
12.environment：环境信息

- 新建environment.properties文件
- 编写如下环境信息

```
systemVersion=mac
pythonVersion=3.9
allureVersion=2.10.0
baseUrl=http://192.168.1.1:8080
projectName=SIT
author=TesterRoad
```

将environment.properties放在项目根目录或其它目录，在执行测试用例时将其复制到allure-results目录下

```
# coding=utf-8

import pytest
import os

if __name__ == '__main__':
    pytest.main(['-s', '-q','./','--clean-alluredir','--alluredir=allure-
results'])
    os.system('cp environment.properties ./allure-results/environment.properties')
    os.system("allure generate -c -o allure-report")
```

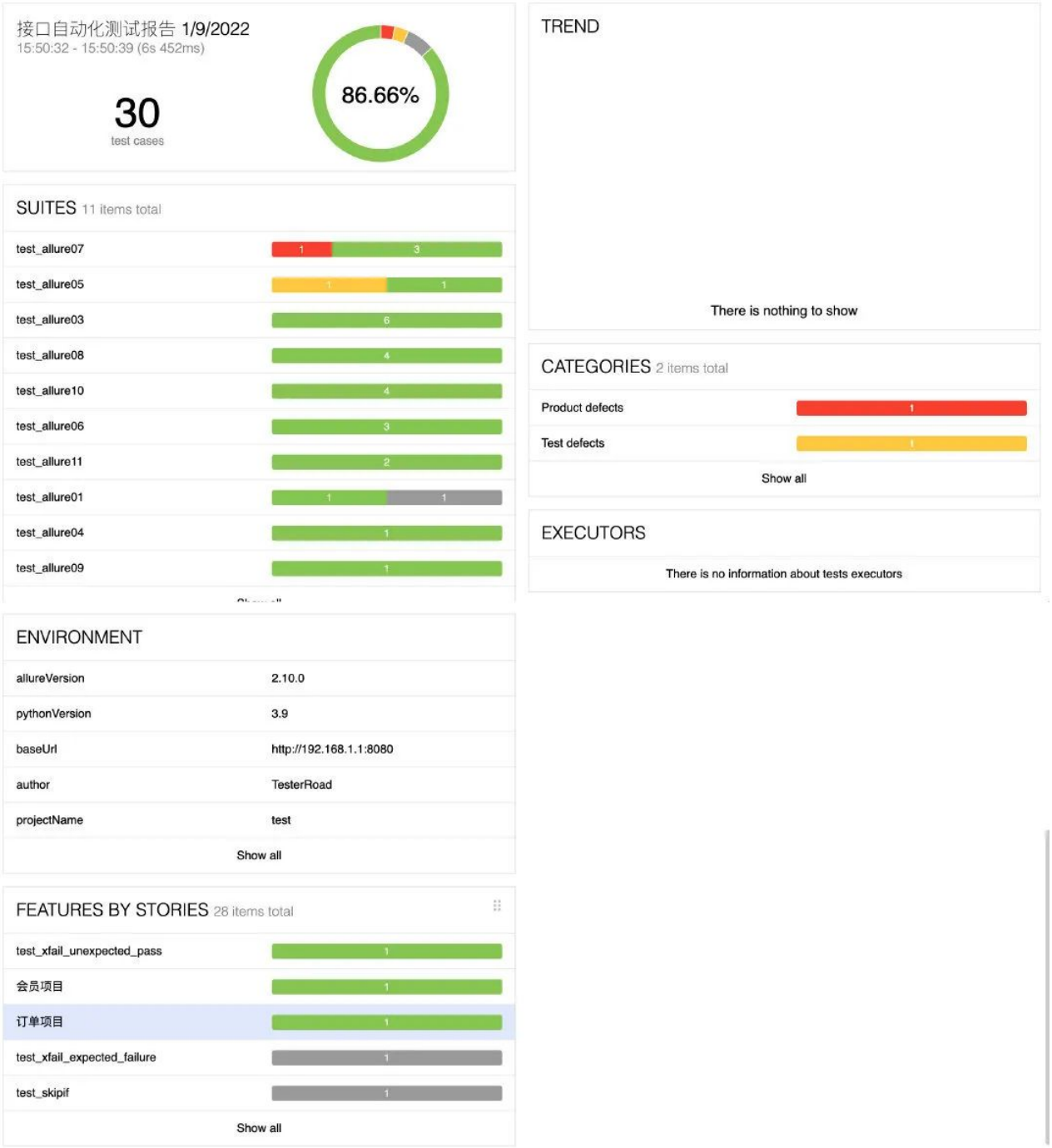


八.Pytest执行所有.py文件

1.新建run.py文件，编写如下代码

```
# coding=utf-8

import pytest
import os

if __name__ == '__main__':
    pytest.main(['-s', '-q','./','--clean-alluredir','--alluredir=allure-
results'])
    os.system('cp environment.properties ./allure-results/environment.properties')
    os.system("allure generate -c -o allure-report")
```

2.查看报告



九.参考链接

docs.qameta.io/allure-r