

FLAKY MANAGER PROJECT PROGRESS

PROGRESS OF THE PERCENTAGE VIEW

Cut off 2019-02-25

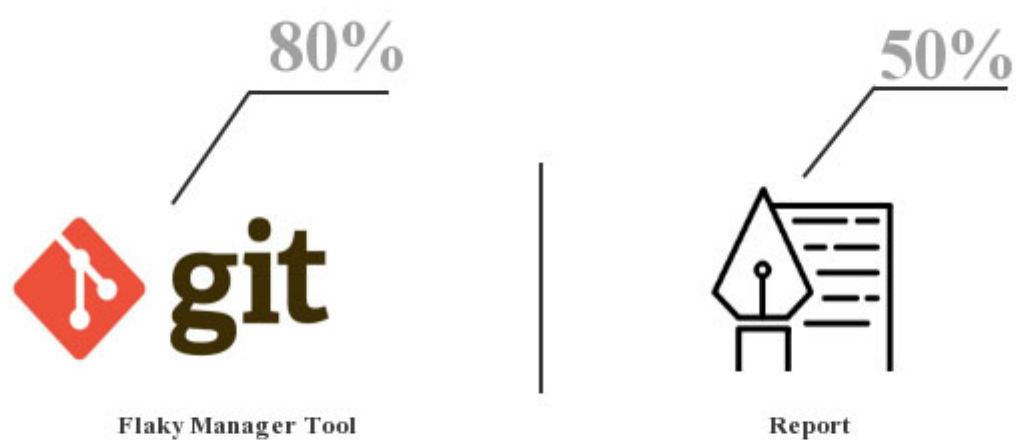


Figure 1 : Progress Of The Work

FlakyManager_02

PERSPECTIVE

Before starting any further work, I would like to share with you my thoughts on this exercise. After investigation, I found that the test results of Flaky Tests are uncertain. Some people believe that Flaky Tests can not achieve the test objectives, and may even destroy the test value. DeFlaker is very professional in finding flaky tests. I think finding them is the first step. We need to solve these flaky tests. So my idea is to build a tool to manage the life cycle of flaky tests, from discovery to record and then fix it.

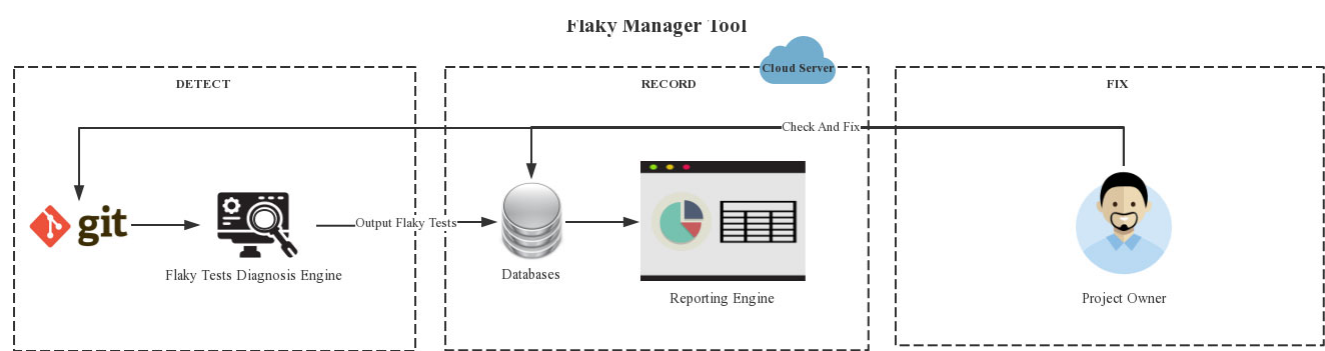


Figure 2 : High-level architecture of Flaky Manager, with three phases : detect, record and fix

HIGH-LEVEL ARCHITECTURE

So, The tool is divided into three parts:

- **The first part** is used to discover flaky tests tools, need to be integrated into the target project, detects the flaky tests and show the information of the flaky manager tool.

```

MINGW64:/d/Workspace_Kth/flaky-manager-parent/flaky-lifecycle-manager

Results :

Failed tests:   getRandomNumber(com.flaky.lifecycle.manager.flakylifecyclemanager.util.RandomUtilTest)

Tests run: 1, Failures: 1, Errors: 0, Skipped: 0

You Can Manage This Project's Flaky Test Here: http://134.175.194.57:10080/flaky/index?projectId=flaky-lifecycle-manager
[ERROR] Failed to execute goal org.apache.maven.plugins:maven-surefire-plugin:2.12.4:test (default-test) on project flaky-lifecycle-manager: There are test failures.
[ERROR] Please refer to D:\Workspace_Kth\flaky-manager-parent\flaky-lifecycle-manager\target\surefire-reports for the individual test results.
[ERROR] -> [Help 1]
[ERROR] To see the full stack trace of the errors, re-run Maven with the -e switch.
[ERROR] Re-run Maven using the -X switch to enable full debug logging.
[ERROR] For more information about the errors and possible solutions, please read the following articles:
[ERROR] [Help 1] http://cwiki.apache.org/confluence/display/MAVEN/MojoFailureException

ThinkPad@LAPTOP-7882K32F MINGW64 /d/Workspace_Kth/flaky-manager-parent/flaky-lifecycle-manager (master)
$
  
```

Flaky Test Result

- **The second part** is to report the discovery of flaky tests to the cloud server, for the same test case, we upload data related to the operating environment each time, Because changes in the operating environment of the program often lead to the generation of flaky tests.

```
mysql> desc flaky;
```

Field	Type	Null	Key	Default	Extra
flaky_id	int(13)	NO	PRI	NULL	auto_increment
flaky_status	int(2)	YES		NULL	
last_detect_time	datetime	YES		NULL	
last_sha_1	varchar(255)	YES		NULL	
class_name	varchar(255)	YES		NULL	
unit_test_name	varchar(255)	YES		NULL	
detect_count	int(100)	YES		NULL	

```

| project_id      | varchar(255) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.04 sec)

mysql> desc flaky_history;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| flaky_history_id | int(13)       | NO   | PRI | NULL    | auto_increment |
| flaky_id        | int(13)       | NO   |     | NULL    |                |
| flaky_status     | int(2)        | YES  |     | NULL    |                |
| detect_time     | datetime      | YES  |     | NULL    |                |
| sha_1           | varchar(255)  | YES  |     | NULL    |                |
| class_name      | varchar(255)  | YES  |     | NULL    |                |
| unit_test_name  | varchar(255)  | YES  |     | NULL    |                |
| detect_count    | int(100)      | YES  |     | NULL    |                |
| project_id      | varchar(255)  | YES  |     | NULL    |                |
| environment_detail | text         | YES  |     | NULL    |                |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.05 sec)

mysql>

```

- **The third part** is the cloud server used to manage flaky tests, and we can see the reports related to the target project at a glance and manage their lifecycle by flaky tests status tags.



page capture

WORKFLOW

Finally, here is the work flow of the flaky manager tool. If there is something wrong with my understanding, don't hesitate to let me know.

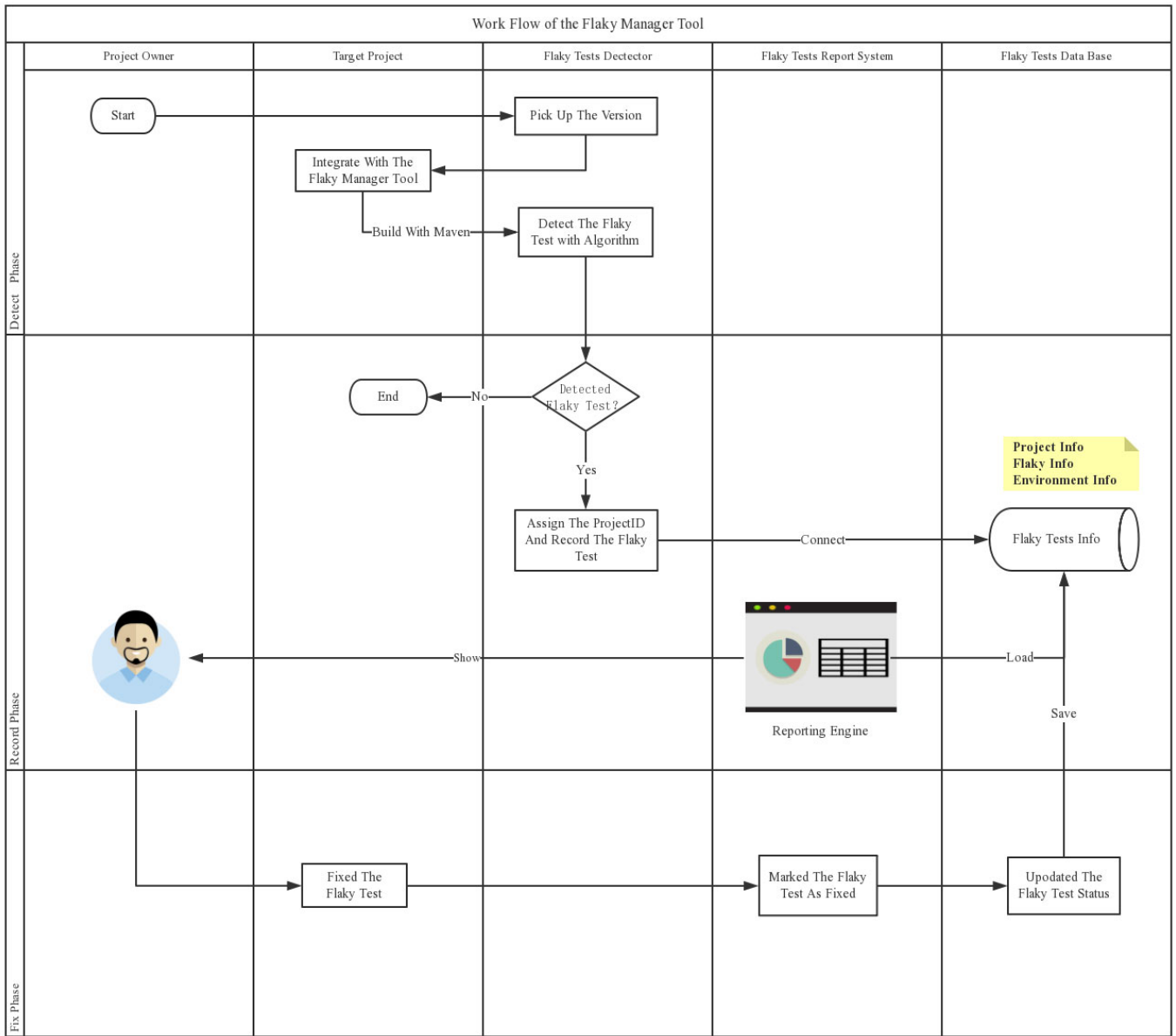


Figure 3 : Work Flow of the Flaky Manager Tool

FlakyManager_07