Quality assurance

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Presention about Monky testing

Monkey testing is a technique used in software testing to test the application or product by

providing random data and observing if the system or application crashes or gives an error.

Monkey testing is also called as Fuzz Testing sometimes**.**

In Monkey Testing, random data is entered into the application to check the behaviour of the application and see if it gives an error

In Monkey testing the tester or sometimes developer also is considered like a monkey assuming that if a monkey uses the computer then he will enter some random data without any knowledge or understanding

Here the tests done are very random and it may not be correct

Monkey tests do not follow any test case

Because of such random testing the testers may not be able to recreate the issues or bugs

What is Monky testing?

Origin of Monkey Testing

Monkey testing was first used in 1983 on the Mac to test MacWrite and MacPaint.

The original Macintosh had 128K bytes of memory and after allocating memory for system and display only 90K of memory was left for the applications.

MacWrite and MacPaint had to use buffers which were offscreen but 3 times the size of the screen in order operate. It was necessary to test these application in low memory conditions to check if they would crash.

However it was difficult to reproduce conditions that led to a crash.

So the Steve Capps and the team used "The Monkey" which was a program which they came up with to enter random events to MacWrite and MacPaint. The Monkey could be run side by side / concurrently with other programs, enter data and perform actions in other programs.

This would perform faster than a regular user. This was similar to a monkey banging on the keyboard pushing random keys, clicking and dragging the mouse randomly.

The team developed it to generate a specific percentage of commands, menu clicks, window events etc out of all the random events so that they could target the testing as per their requirements.

As a testing apparatus, The Monkey was quite efficient and the team found it amusing to see the drawings produced by The Monkey even though the writings were gibberish.

At first The Monkey was good at crashing the applications but once the prominent defect were fixed, it made it harder for the monkey to find defects.

Advantages of Monkey testing:-

- Monkey testing is a very good approach to find out some new bugs which may not be possible from the stated scenarios.
- Monkey testing can also be a good way to perform stress testing and load testing since the scenarios tested are generally random and adhoc.
- It is very easy to execute because it just requires some random data to run against some random tests.
- Execution of test cases and setting up of environments expenses are very less in monkey testing.
- By using tools the process of Monkey testing can be automated.
- Monkey testing can be performed for desktop applications, web applications as well as mobile applications.

Disadvantages of Monkey testing:-

- The test carried out during monkey testing is so random that it is either not possible or very difficult to recreate any bug.
- It's very difficult and time consuming to analyze the unexpected issues found during the monkey testing.
- Testers have difficulty in defining the exact test scenarios and they also cannot assure the accuracy of test cases.
- Monkey testing may consume lots of time before finding a bug because it does not have any predefined tests.

Uses Of Monkey Testing :-

- Monkey testing can also be automated using hardware or more preferably software to mimic the actions of a monkey entering random data.
- Data which is random and pre-compiled can be used to test the application for OWASP issues.
- It can be used for database testing by starting a transaction and entering random data or performing random actions and then rolling back to see if it crashed or if any corruption of database occurs.

Smart Monkey Testing :-

In **Smart Monkey Testing**, the Test Lead or Manager assigns a tester who understands the application, to test the application.

- Since they are aware of the product they will enter random data to test the application which they know is not valid and perform random actions.
- This is beneficial in testing the application quickly.
- This ensures that the application works as expected under valid conditions and handles invalid data properly.

Brilliant Monkey Testing :-

In **Brilliant Monkey Testing**, a tester who has domain knowledge of the domain, is assigned to test the application by the Lead or Manager.

The developer or tester who does not have domain knowledge may expect the sequence of steps to be executed in a certain way and they may have a specific understanding of the data that is being entered.

However, in the field/real life, the end user who has domain expertise may actually be performing tasks in a different sequence with different data. **Example** : A tester who has knowledge of Banking domain may be asked to enter random data to test a banking application.

Hence having the application tested by a person with knowledge of the domain is beneficial since they will enter random data from a domain perspective.

Monkey Testing Tools

There are some tools to automate tests for monkey testing applications efficiently. These tools generate random data to feed into the application, and then the output is reported, and bugs are discovered, if any. Some tools like MonkeyRunner and UI/Application Exerciser Monkey are used for android application monkey testing.

There are several tools that help in automating the process of Monkey Testing. This helps in performing monkey testing efficiently.

Monkey testing tools are developed to generate random data or use pre-populated random data and enter it into the application. They are also programmed to be able to execute random actions. They then observe and report the output of the application.

Setting up a Monkey testing tool requires some amount of effort but once its setup, the automation will help make monkey testing efficient.

MonkeyRunner tool for Android :-

MonkeyRunner tool is used for monkey testing an Android application.

You can install, execute an Android program, send it data/keystrokes and record screenshots and store it on a computer – all this can be done through a Python program with MonkeyRunner.

You can control an android emulator or device using the API's provided by the Monkeyrunner tool.

While the Monkeyrunner tool is developed to perform functional testing and framework level testing of the application or device, it can be used to run test suites and for random testing.

UI/Application Exerciser Monkey on Android :-

The UI Exerciser Monkey is different from the monkeyrunner tool. MonkeyRunner tool controls the android device from outside the android code while UI Exerciser Monkey which runs in an ADB Shell inside the device or emulator.

The UI Exerciser Monkey can be used to generate system and user events in a pseudo random stream.

Monkey testing is not in widespread use across the industry due to various reasons like lack of time, resources, higher priority given to other forms of testing which give better results and return on investment.

Its advisable to execute other forms of testing first, to ensure the stability of the application before using Monkey Testing.

goodbye