Unit Testing significance in Software Development

In this blog we will discuss about Unit Testing, the very first thing that we need to know is when the Unit Testing is being performed. Unit testing is the initial level of software testing, that is performed on the application source code mainly by the developer. The main motive of Unit Testing is to isolate a section of code and verify it's correctness.

What is Unit Testing:

A level of software testing where the individual units or components of a software or web applications are tested by developer is called *Unit Testing*. It is an important aspect of Software Testing. It is a component of test-driven development (TDD).

Benefits of Unit Testing:

1. Defects revealed by a unit test are easy to locate and relatively easy to repair. Unit testing verifies the accuracy of the each unit.

2. In unit testing procedure – the developer needs to write test cases for all functions and methods so that whenever a change is required, it can be fixed quickly in later date and the module also works correctly.

3. Unit testing improves the quality of the code. It helps the programmer to write the better code. It identifies every defect that may have come up before code is sent further for regression testing.

4. If a test fails, then only the latest changes need to be made in the code and need to debug. So It's better to say unit testing helps to simplify the debugging process.

5. Codes are more reusable. In order to make unit testing possible, codes need to be modular. This means that codes are easier to reuse.
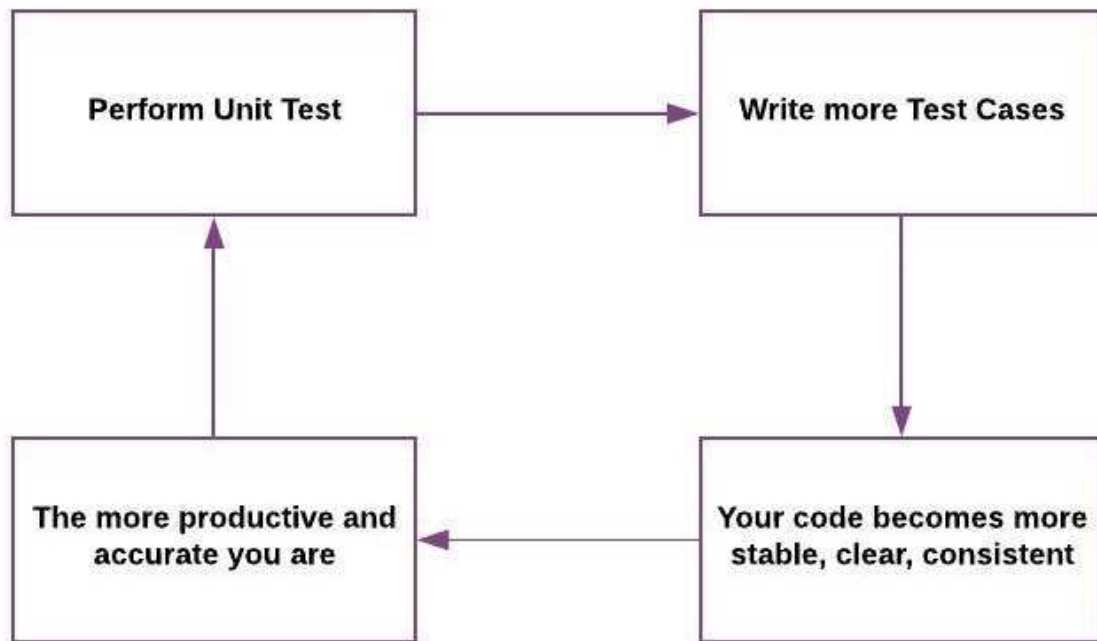
Gems to perform Unit Testing in your Ruby on Rails web application:

There are several gems available in Ruby on Rails application framework to perform the unit testing.

- **rspec_rails:** Rspec is an automated test case, used to test the code written by developer while creating the application.
- **factory_girl_rails:** create dummy data while performing testing.
- **minitest:** It is also used to perform the unit testing in your rails application.

  These 3 gems given above are used for Test Driven Development (**TDD**) environment.

- **database cleaner**: Used to cleanup the database in Ruby while testing.

Most of the [Ruby on Rails Developers](#) use the best practices for carrying unit testing on individual units of source code or program modules

Unit Test Case Best Practices:

- You Should always follow the proper naming conventions for your unit testing, i.e. clear and consistent naming conventions for the unit tests.

- If any changes done in the requirements then your unit test case should not be affected. Your test cases should be independent.

- Always follow "test as your code" approach. The more code you write without testing, the more paths you have to check for errors.

- If any changes needs to done in the code for the corresponding module, make sure that you have the unit test case for that particular module and need to pass the test case before any implementation done.

Conclusion:

The developer should make Unit testing a part of their regime to make neat and clean, reusable, and bug free codes. Also by using unit testing the quality of code will be improved. Unit testing helps to reduce the cost of bug fixes.