

Assignment 1: Create an infographic illustrating the Test-Driven Development (TDD) process. Highlight steps like writing tests before code, benefits such as bug reduction, and how it fosters software reliability.

Test-Driven Development (TDD) Process

Step 1: Write a failing test

The first step in TDD is to write a test that describes the desired behavior of the code you want to write. This test should initially fail, as the code does not yet exist.

Step 2: Write the minimum amount of code to pass the test

Once you have a failing test, you can start writing code to make it pass. However, you should only write the minimum amount of code necessary to pass the test. This helps to ensure that your code is concise and easy to understand.

Step 3: Refactor your code

Once the test passes, you should refactor your code to improve its structure and readability. This helps to ensure that your code is maintainable and easy to modify in the future.

Step 4: Repeat steps 1-3

The TDD process is an iterative one. You should repeat steps 1-3 until all of your tests pass and your code is complete.

Benefits of TDD

There are many benefits to using TDD, including:

- **Reduced bugs:**
TDD helps to reduce bugs by ensuring that your code is thoroughly tested before it is released.
- **Improved code quality:**
TDD helps to improve the quality of your code by making it more concise, readable, and maintainable.
- **Increased confidence:**
TDD can help to increase your confidence in your code by giving you a safety net of tests.

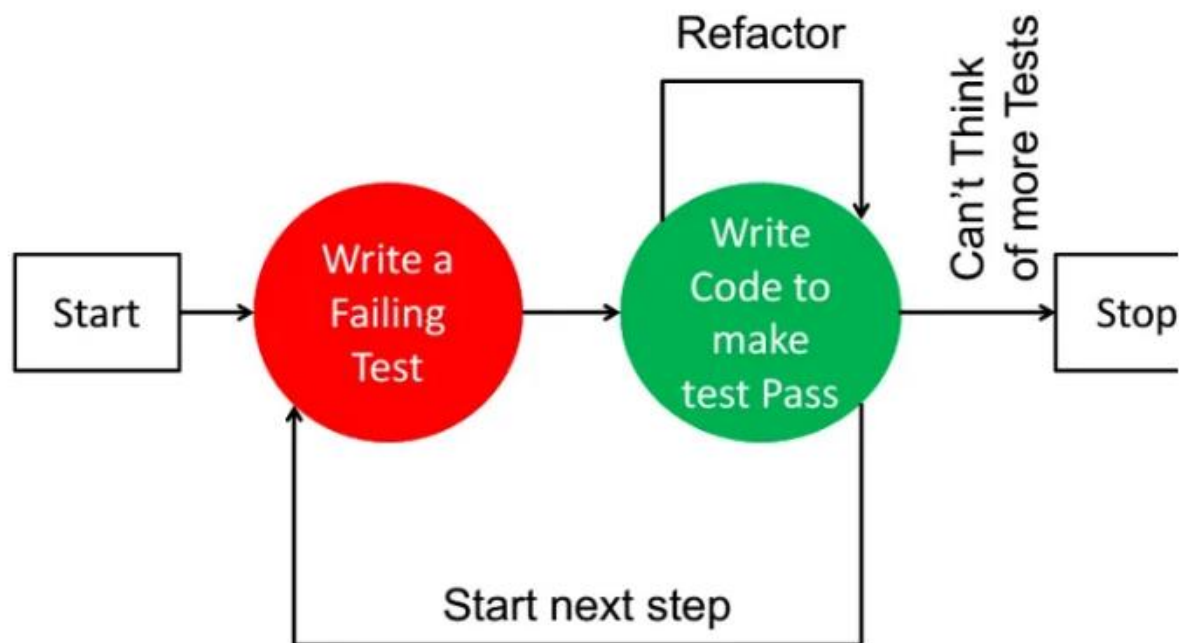
How TDD Fosters Software Reliability

TDD fosters software reliability by ensuring that your code is thoroughly tested before it is released. This helps to reduce the number of bugs in

your code, which can lead to software failures. Additionally, TDD helps to improve the quality of your code by making it more concise, readable, and maintainable. This makes it easier to understand and modify your code in the future, which can help to prevent software failures.

Infographic

The following infographic illustrates the TDD process:



The infographic shows the three steps of the TDD process:

1. Write a failing test.
2. Write the minimum amount of code to pass the test.
3. Refactor your code.

The infographic also highlights the benefits of TDD, including reduced bugs, improved code quality, and increased confidence. Finally, the infographic explains how TDD fosters software reliability by ensuring that your code is thoroughly tested before it is released.