

# Software Testing and Reliability

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# Some Instructions about the Course

- **Regulations**

- Refer to the .doc file

- **References**

- Glenford J. Myers , The Art of Software Testing, Second Edition, Wiley Press
- Myers, G., Software Reliability: Principles & Practices, Wiley Press



# Some Instructions about the Course

- **Instructor**

- Xiaoyuan Xie (xxie@whu.edu.cn)

- **Tutor**

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# Lecture 1:

# Why Do We Test Software?

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# Why necessary



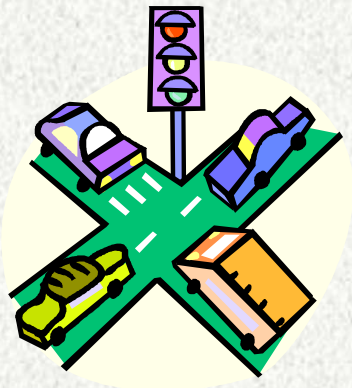
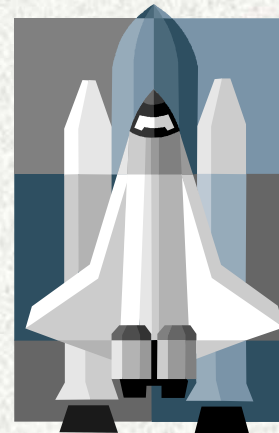
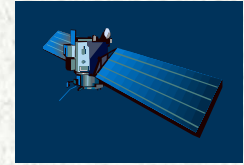
# Testing in the 21st Century

- Software defines behavior
  - network routers, finance, switching networks, other infrastructure
- Today's software market :
  - is much bigger
  - is more competitive
  - has more users
- Embedded Control Applications
  - airplanes, air traffic control
  - spaceships
  - watches
  - ovens
  - remote controllers
  - PDAs
  - memory seats
  - DVD players
  - garage door openers
  - cell phones
- Agile processes put increased pressure on testers
  - Programmers must unit test – with no training or education!
  - Tests are key to functional requirements – but who builds those tests ?

Industry is going through a revolution in what testing means to the success of software products



# Software is a Skin that Surrounds Our Civilization



Quote due to Dr. Mark Harman



# Why difficult



# A self-test

We want you to write a set of test cases—specific sets of data—to properly test a relatively simple program.

Here's a description of the program:

*The program reads three integer values from an input dialog. The three values represent the lengths of the sides of a triangle. The program displays a message that states whether the triangle is scalene, isosceles, or equilateral.*



# What is Software Testing?



Software testing is a process, or a series of processes, designed to make sure computer code does what it was designed to do and that it does not do anything unintended.

Software should be predictable and consistent, offering no surprises to users. In this book we will look at many approaches to achieving this goal.



# You will learn...

