

Software Testing

Testing Definition

To tell somebody that he is wrong is called criticism. To do so officially is called testing.

Job of the tester

Q: How many testers does it take to change a lightbulb?

A: None, they just tell you that the room is dark.



Sweetheart, I am sorry. They are just shipping one bug with this release. You and the kids can join me in service pack1.



You are a lucky bug. I'm seeing that you'll be shipped with the next five releases.

Slogans

- **Software Testers: Always looking for trouble.**
- **If developers are so smart, why do testers have such job security?**
- **Software Testers - We succeed where others fail!**
- **There's always one more bug.**
- **Brain on, eyes open...test**

Sign On Testers' Doors

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Do not disturb. Already disturbed!

Developer V/s Tester



Software Error Case Studies

- Disney's Lion King Problem 1994-1995
- NASA Mars Polar Lander



- The Y2K Bug

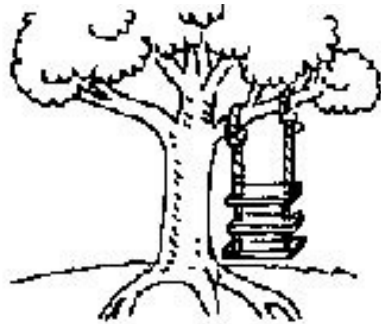
What is a bug

- *Defect*
- Variance
- *Fault*
- *Failure*
- Problem
- Inconsistency
- Error
- Feature
- Incident
- Bug
- Anomaly

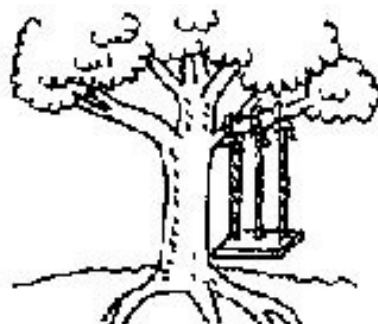
Software Bug – Formal definition

Specification (Spec)

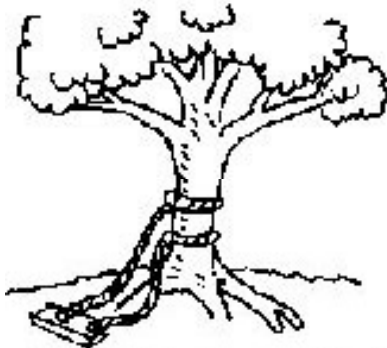
Agreement among the software
development team



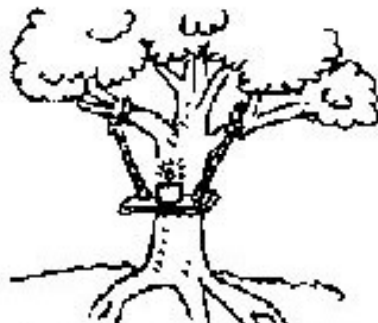
1. As Management Requested It



2. As Specified in the Project Request



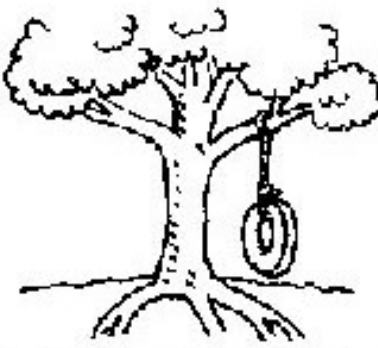
3. As Designed By The Senior Analyst



4. As Produced By The Programmers



5. As Installed



6. What The User Wanted

What it will be?
How it will act?
What it will do?
What it will not do?

Software Bug – Formal definition

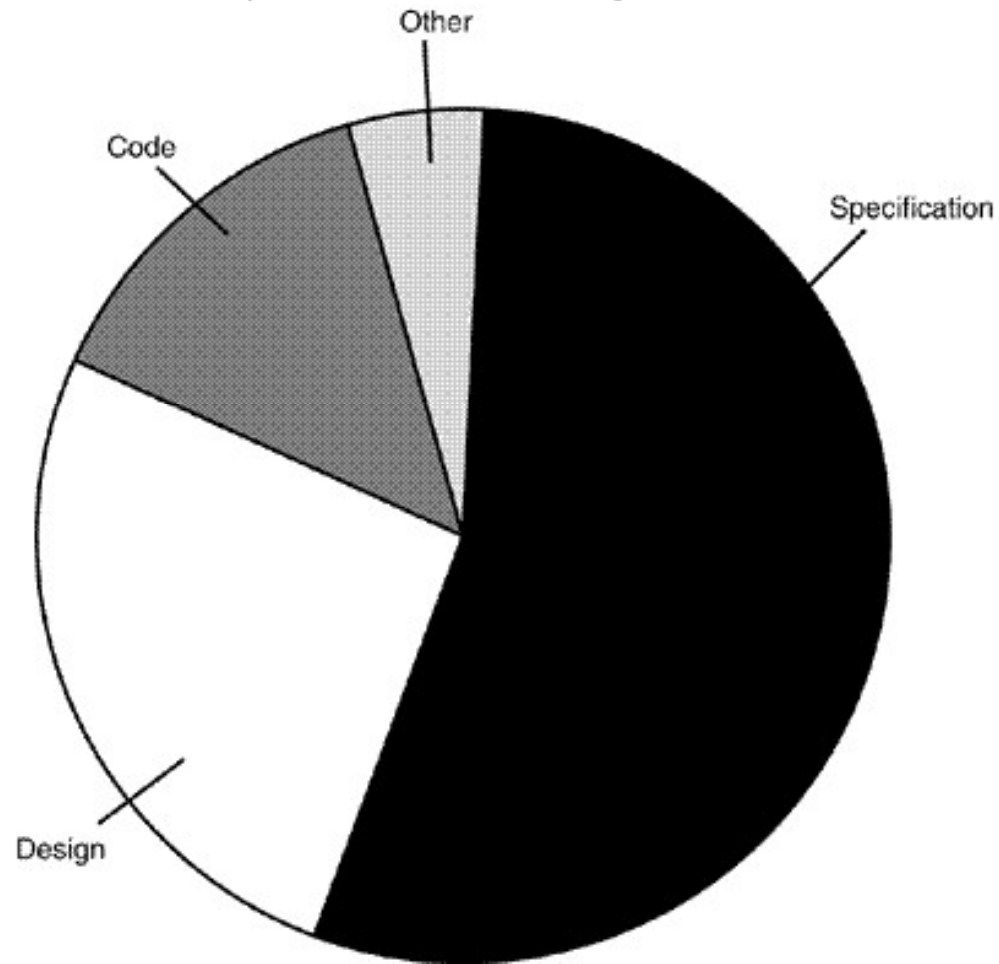
- The software doesn't do something that the product specification says it should do
- The software does something that the product specification says it shouldn't do
- The software does something that the product specification doesn't mention
- The software doesn't do something that the product specification doesn't mention but should
- The software is difficult to understand, hard to use, slow. It will be viewed as just plain not right.

WHY DO HUMAN ERRORS OCCUR



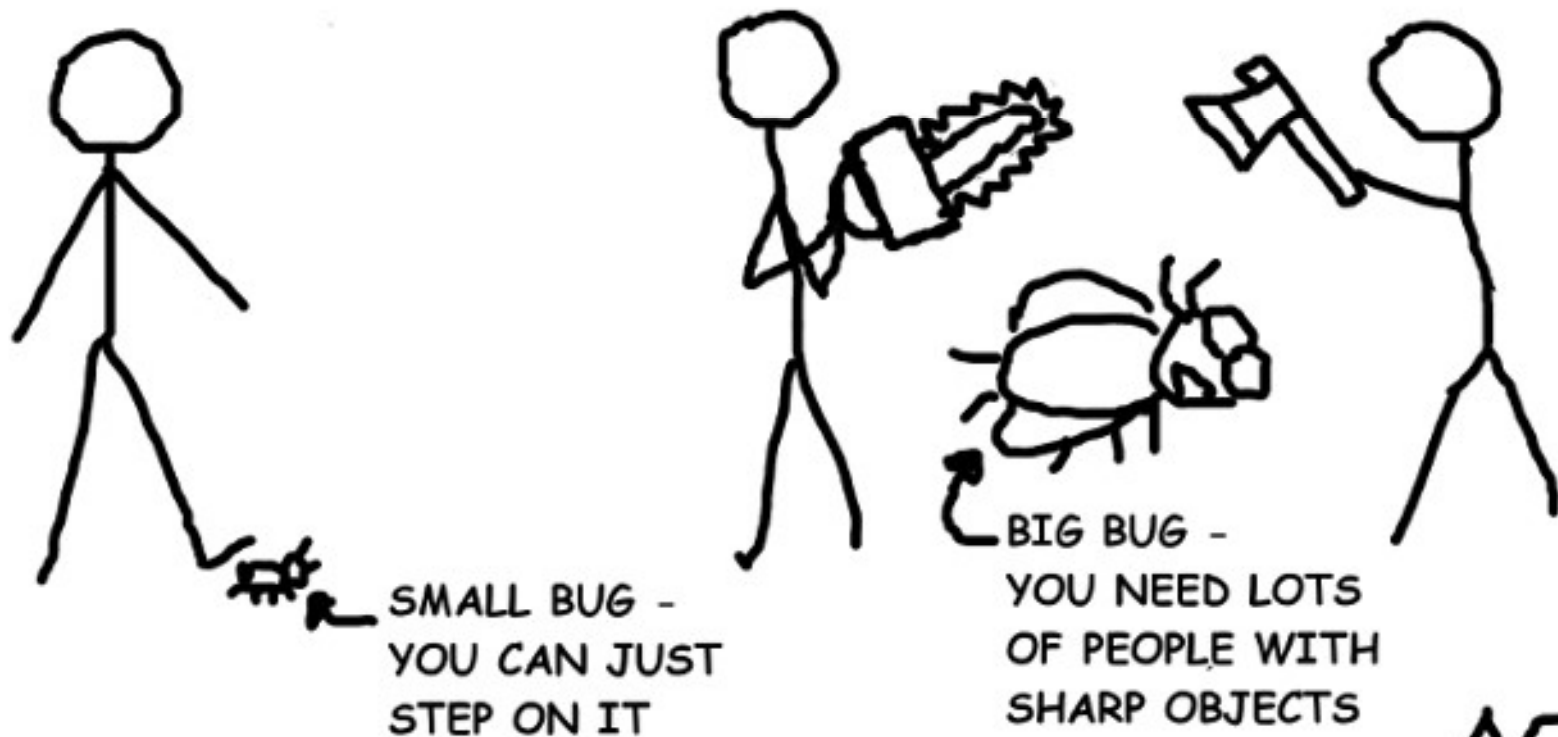
**WHEN EVERYONE
IS FOR QUALITY?**

Why do bug occur

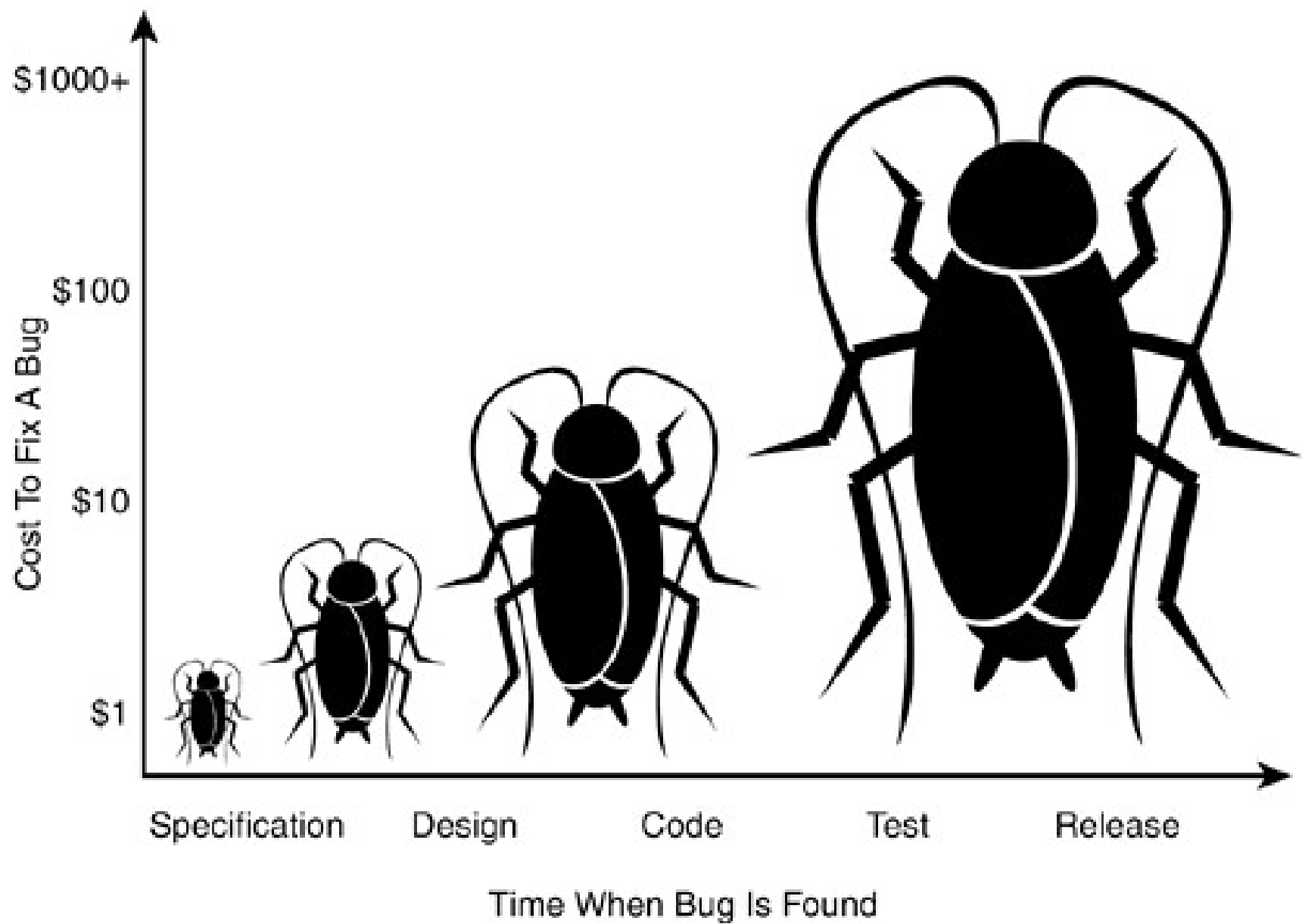


WHY SHOULD WE "FIX" BUGS ASAP?

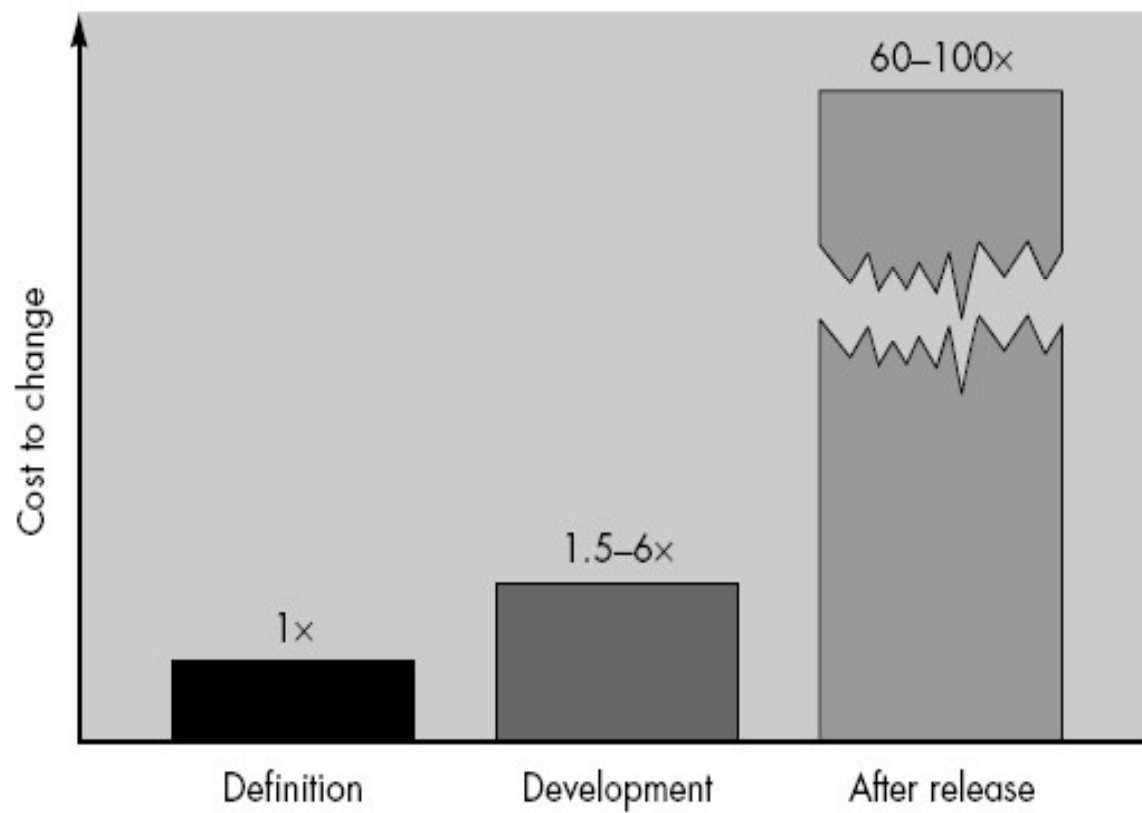
LIKE MANY LIVING CREATURES, BUGS GROW
IN SIZE THROUGHOUT THEIR LIFE. IT IS
DESIRABLE TO DISCOVER AND EXTERMINATE
BUGS SOON AFTER CONCEPTION.



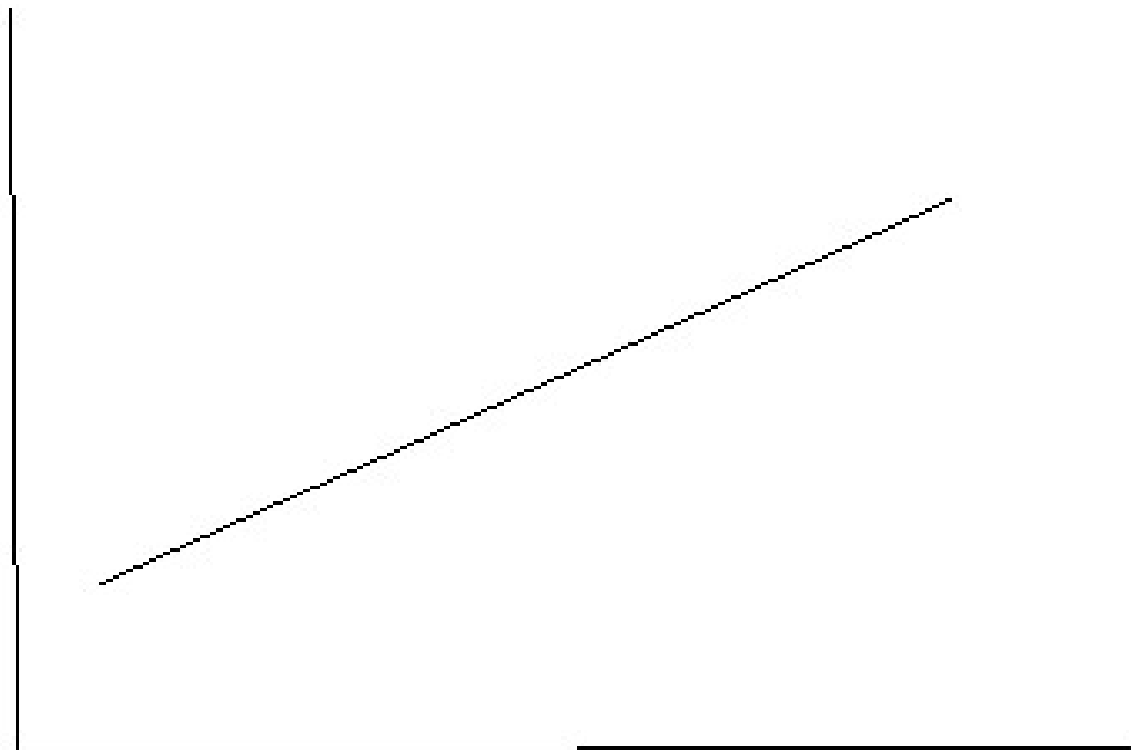
AG



Cost of Bug



Cost
To
Fix
A
Bug



Specification Design Code test Release
Time When Bug is Found

- Goal Of S/W tester
- Characteristics of S/W tester
 1. Explorers
 2. Troubleshooters
 3. Relentless
 4. Creative
 5. (Mellowed) Perfectionist
 6. Exercise good judgment
 7. Tactful and diplomatic
 8. Persuasive

Effort that goes into a S/W product

- Customer requirement
- Specifications
- Schedules
- Design documents

(Architecture, DFD, State transition diagrams, Flow charts, Commented code)

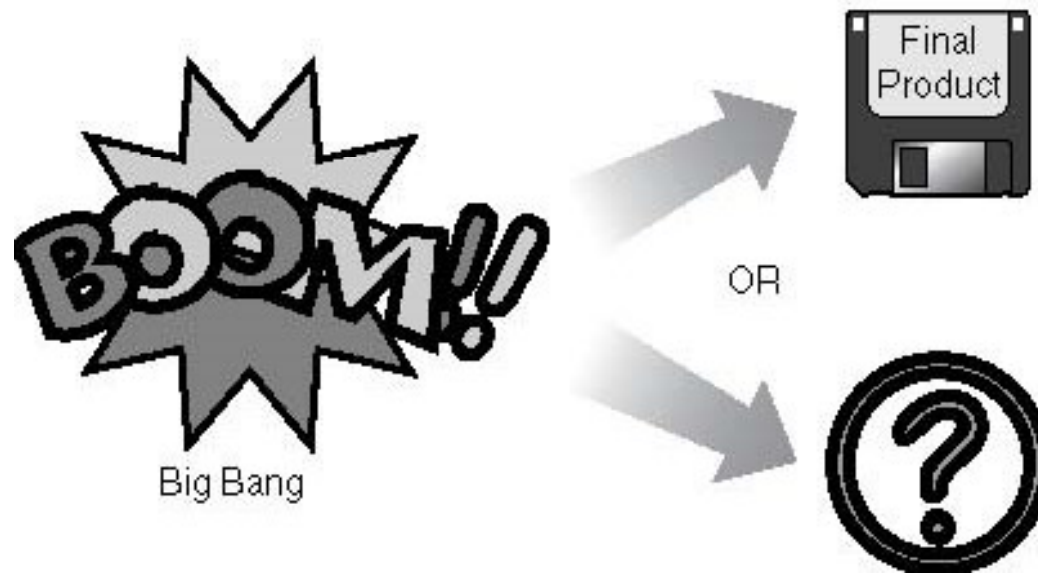
- Test Documents

(Test plan, Test Cases, bug report, Test tools and automation)

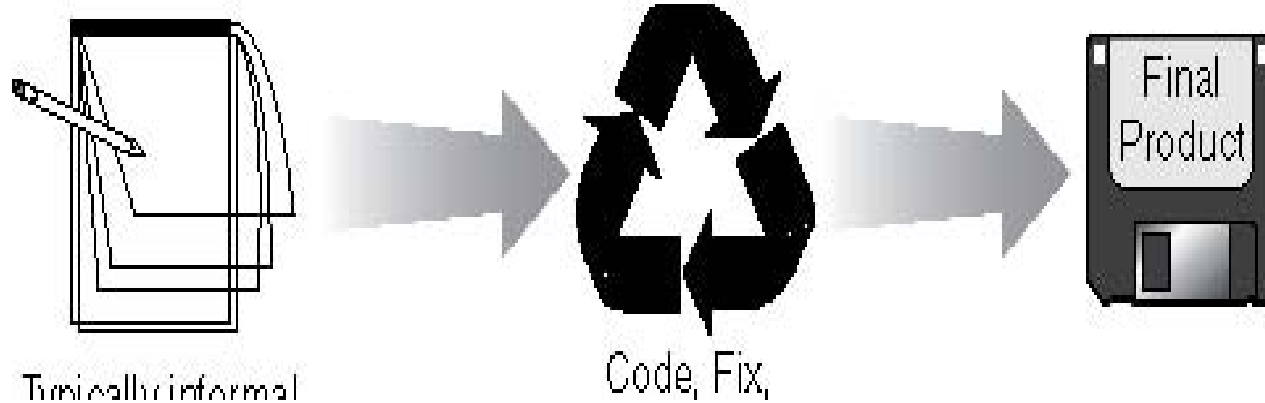
S/W development life cycle models

- Big Bang Model
- Code and Fix model
- Water fall model
- Spiral Model

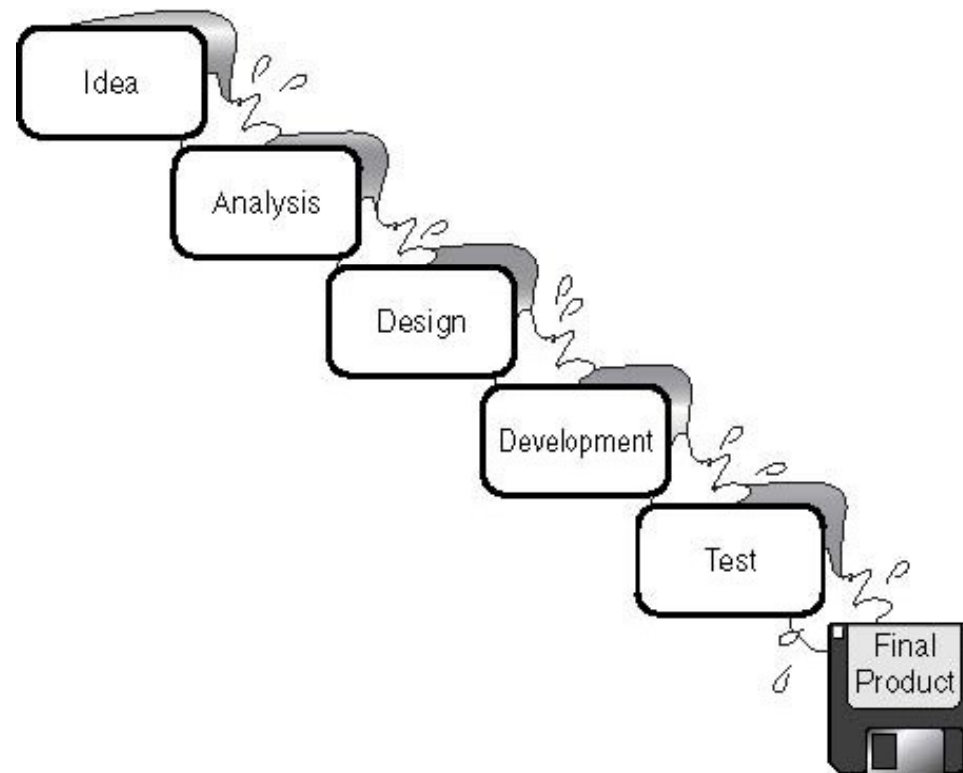
Big Bang Model



Code and Fix model



Waterfall Model



Spiral Model

