

A smartphone is shown on the left side of a large red circle. The phone's screen displays the time 21:05, a battery icon with a lightning bolt, 38% battery level, and the date Wednesday 04.03.2020. A white USB cable is plugged into the bottom of the phone. Another white USB cable is plugged into a white adapter block in the top right corner of the red circle. The background of the slide features a large red circle in the center, with several horizontal grey bars on either side.

# Testing

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Intro to software engineer

# Agenda



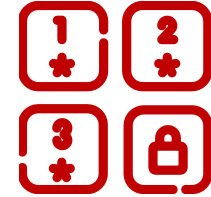
Testing



V model



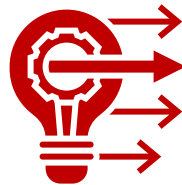
Strategy



Level of  
testing



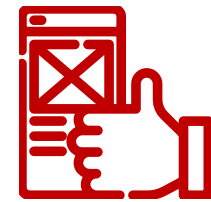
Testing  
process



Testing  
techniques



Testing  
term



Usability  
testing

# What is testing

Process of exercising a program with specific intent of finding errors

Error can be

- part of program does not meet the requirement

Testing goal

- try to reduce the bug that cause incorrect result

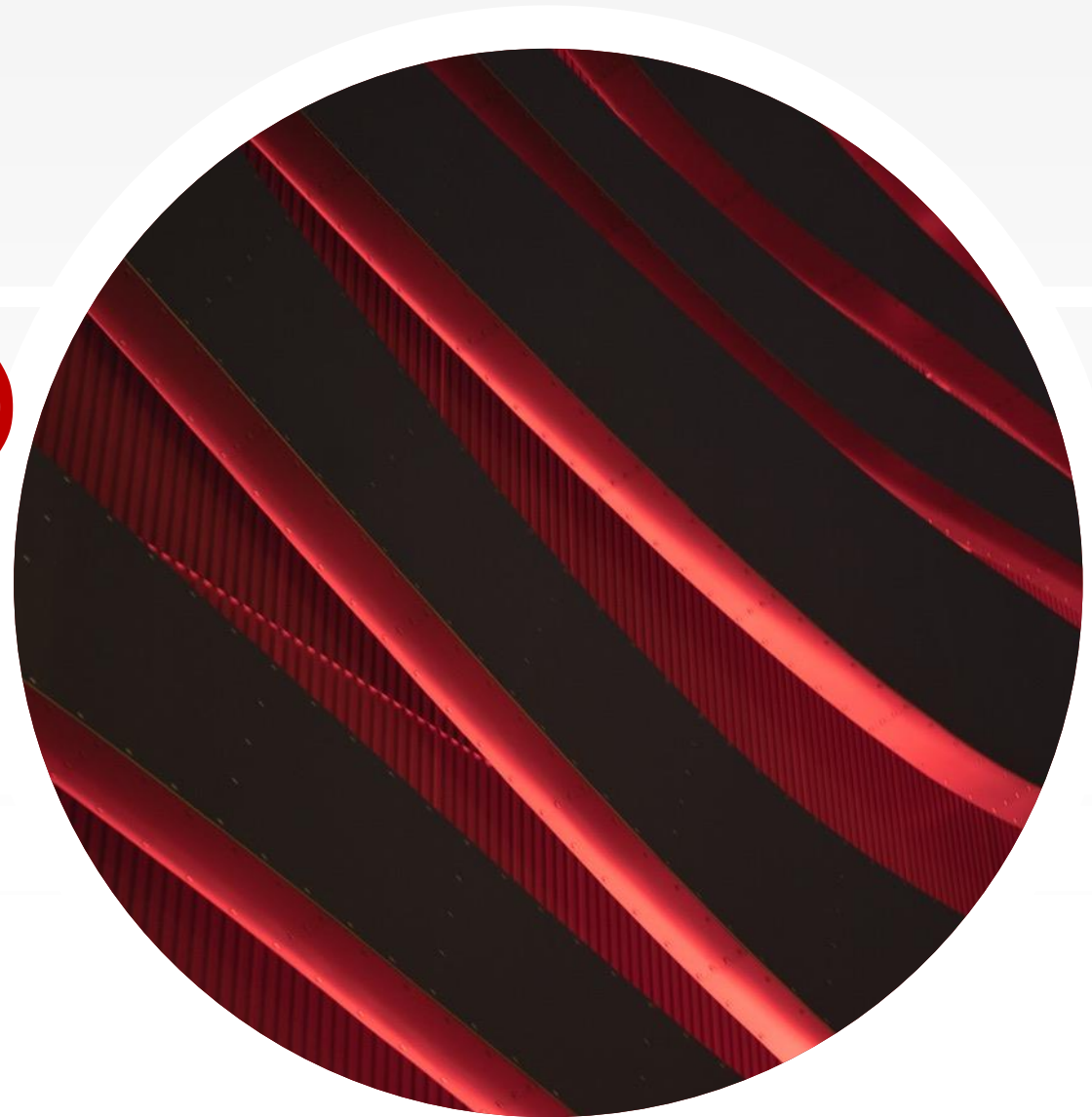


# Reasons bug never die

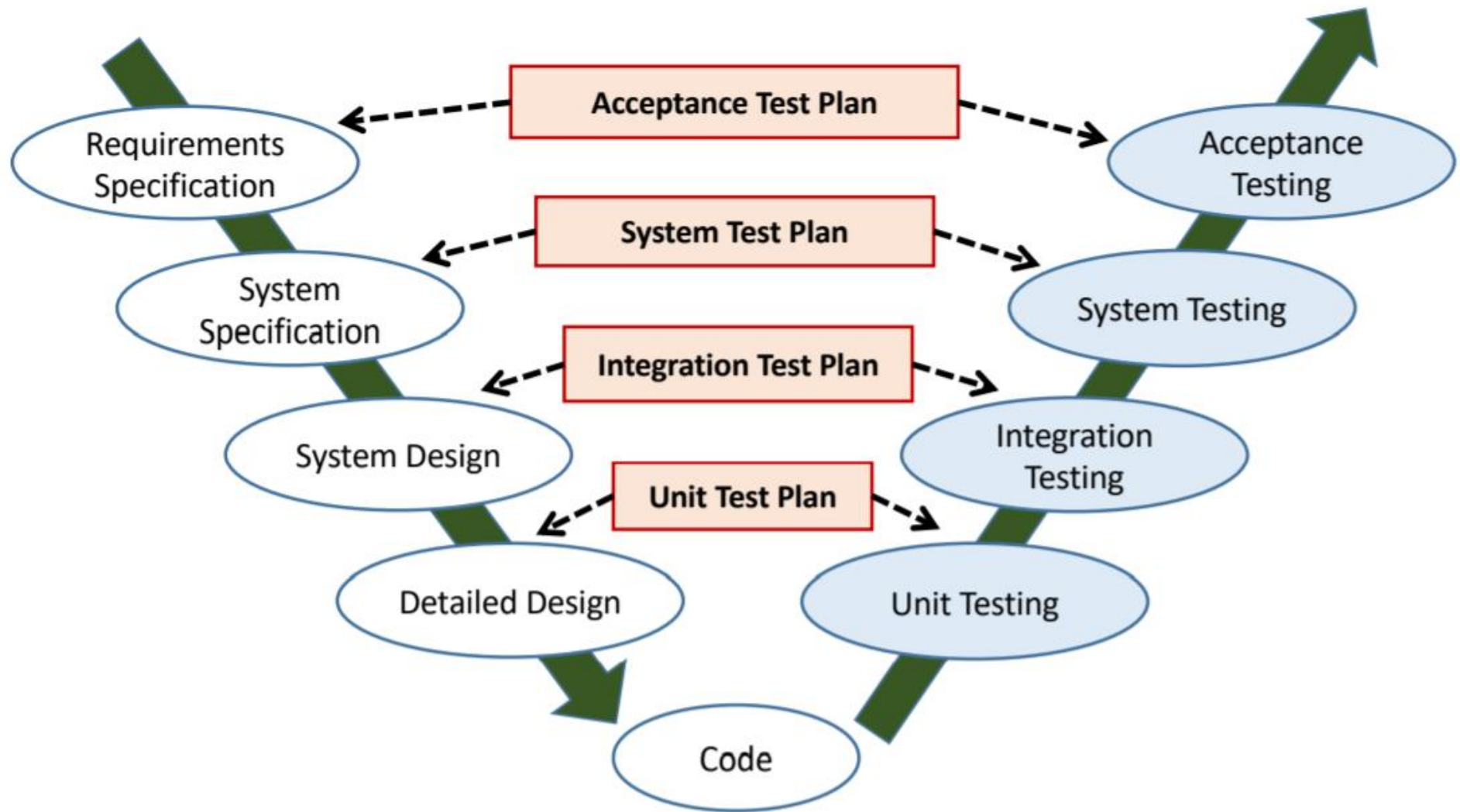


# V model (Verification and Validation)

- Verification
  - Are we building the product, right?
- Validation
  - Are we building the right product?



## V model diagram



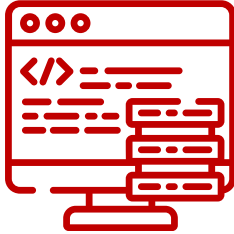


An abstract graphic on the left side of the slide. It features a large red circle at the top left, a blue rectangle with three small dark blue squares inside, a pink rectangle, a yellow rectangle, and a cyan rectangle. Black lines connect various points on these shapes, creating a network-like structure. The background has horizontal stripes in red, white, and blue.

# Strategy

- Testing Strategy
  - Small unit to large unit
- Who test the software
  - Developer
    - **Understand** the system and delivery the product
  - Independent tester
    - Learn about the system and **break the product**
- In conventional software
  - **Focus** on module
  - **Integration** the module
- In Object oriented software
  - Implies communication and collaboration

## Level of testing



### Development testing

- Test during development



### Release testing

- Before it is release to user



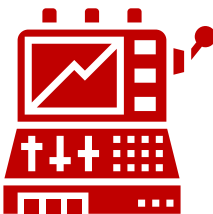
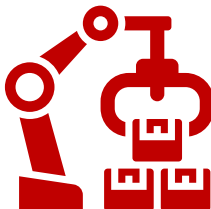
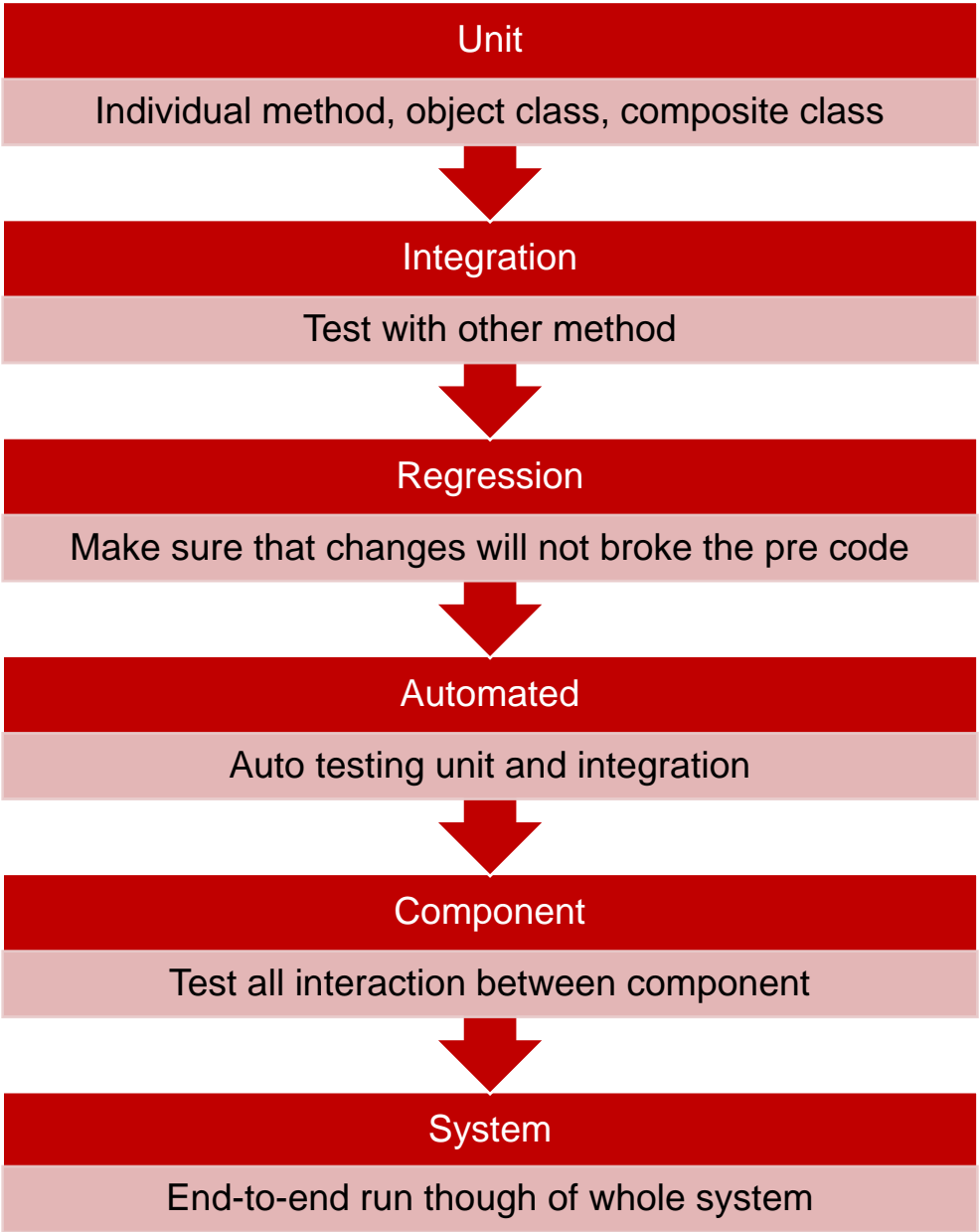
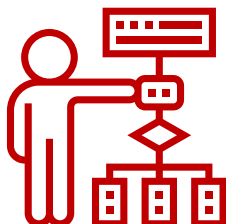
### User testing

- Potential users of their own environment





# Development testing



# Release Testing



## Particular Release

Test a particular  
release of s a system



## Convince the supplier

Convince the supplier  
of system are good  
enough for use

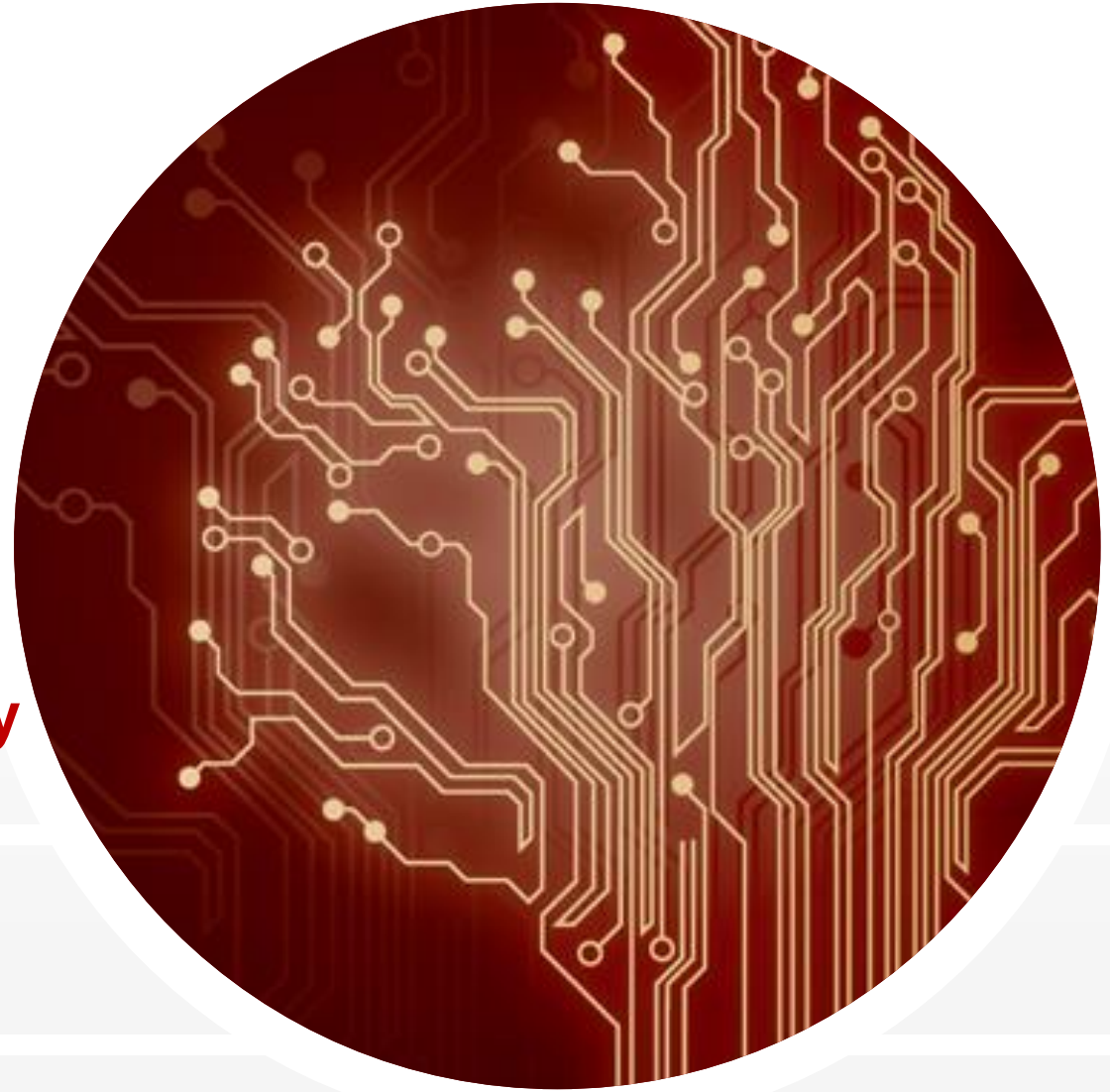


## Black box

Usually be black-box  
testing

# Performance Testing

- Make performance and **reliability** of a system
- Stress testing is a form of performance testing where the system is **deliberately overloaded**



# User testing

## User testing

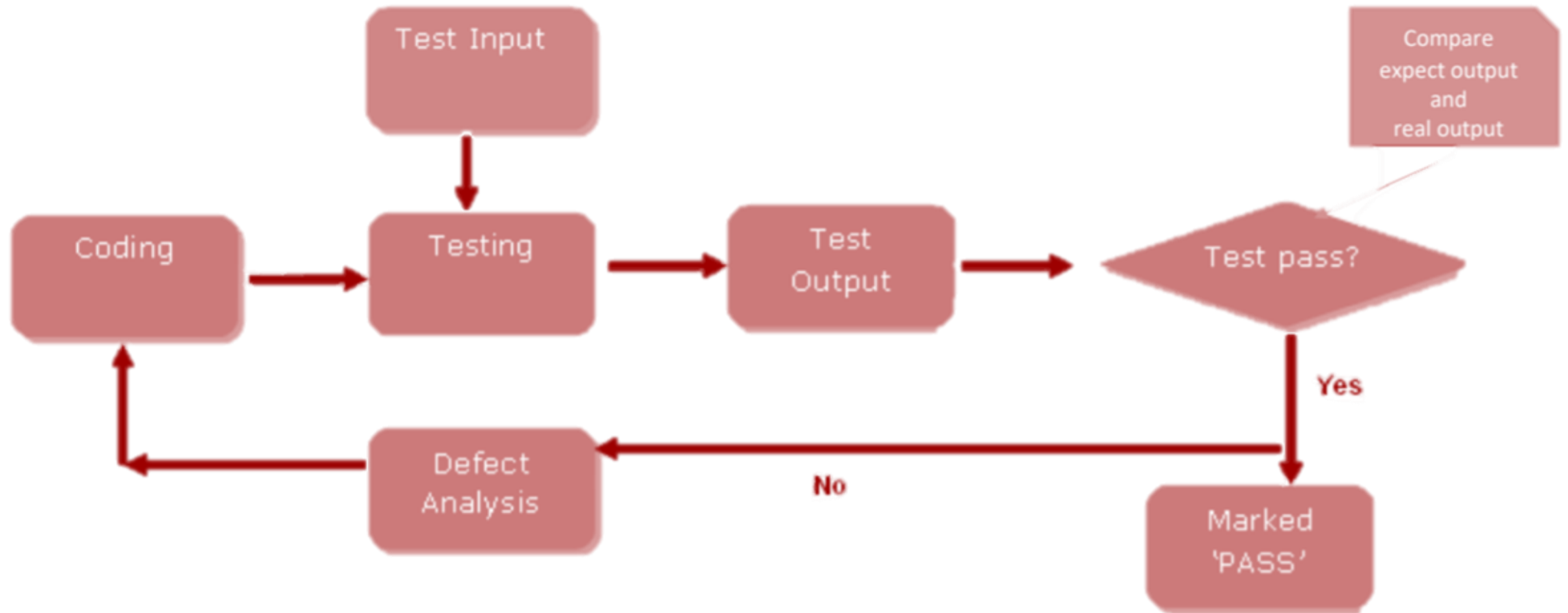
- State that give software to Influences of user working environment and observe major effect on reliability performance, usability of system

## 3 type of User testing

- Alpha
  - Work with developer
- Beta
  - Work when release
- Acceptance
  - Ready to deployed

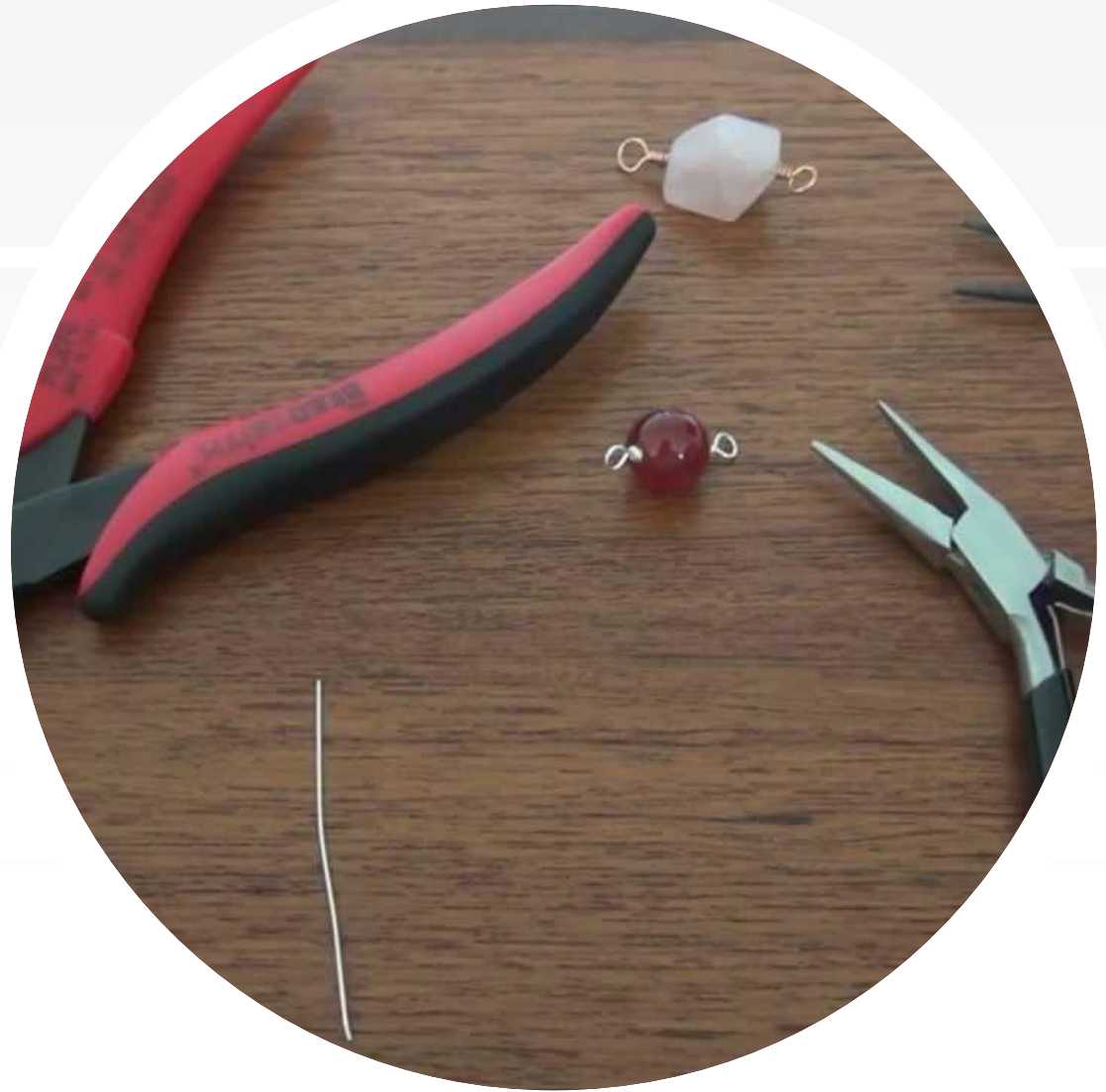


# Testing process



# Testing Techniques

- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>• Black box<ul style="list-style-type: none"><li>• Based on a description of software</li><li>• Cover as much specified behavior as possible</li><li>• Cannot reveal errors due to implementation detail</li></ul></li></ul> | <ul style="list-style-type: none"><li>• White box<ul style="list-style-type: none"><li>• Based on the code</li><li>• Cover as much coded behavior as possible</li><li>• Cannot reveal errors due to missing paths</li></ul></li></ul> |
|--|---|



# Software testing terms

## Plan

- High level document description scope to testing

## Specific

- Test Description :
- Test Procedure
- Test Case

## Result

- Pass or Fail, comparing expect and real







# Usability test

- Quality attribute that assesses **how easy UI use**
- Used in **User-centered interaction** design to evaluate product
- Observe the **real user's behavior** and reaction to UI

## How the usability testing work

### How

- Carry predefined task

### Participants

- 5 user
- Test moderator
- observer

### Materials

- Early prototype
- Task scenario
- Pen and paper





# THANK YOU



Name



Phone



Email



Website