

Junit

People matter, results count.

# Ground Rules for Face-to-face Classrooms



# Ground Rules for Virtual Classrooms

## Participate actively in each session

Share experiences and best practices

Bring up challenges, ask questions

Discuss successes

Respond to whiteboards, polls, quizzes, chat boxes

Hang up if you need to take an urgent phone call, don't put this call on hold

## Communicate professionally with others

Mute when you're not speaking

Wait for others to finish speaking before you speak

Each time you speak, state your name

Build on others' ideas and thoughts

Disagreeing is OK –with respect and courtesy

## Be on time for each virtual session

As a best practice...be just a few minutes early!

# Module at a Glance

SME to provide the details required in the table.

Target Audience:	
Course Level:	<i>Expert</i>
Duration (in hours):	8 hrs
Pre-requisites, if any:	Java
Post-requisites, if any:	<i>Submit Session Feedback</i>
Relevant Certifications:	None

# Introductions (for Virtual Classrooms)

SME to provide the  
photos and names of  
the facilitators.

Business Photo

*Facilitator*  
**Vijayalakshmi David**  
Sr Consultant

Business Photo

*Moderator*  
**Name**  
Role

# Agenda

- 1 Junit Overview
- 2 Junit Basics
- 3 Advanced Junit
- 4 Integration Junit
- 5 Beyond Junit

# Module Objectives

Note to the SME : Please provide the module Objectives or validate the partially updated content



## What you will learn

At the end of this module, you will learn:

- What is Junit

## What you will be able to do

At the end of this module, you be able to:

- Junit
- Annotations
- Mockito





# Junit Overview



# What is JUnit ?

## JUnit Overview

- Manual Testing - Automated Testing
- JUnit is a unit testing framework for the Java Programming Language.

# Junit Overview

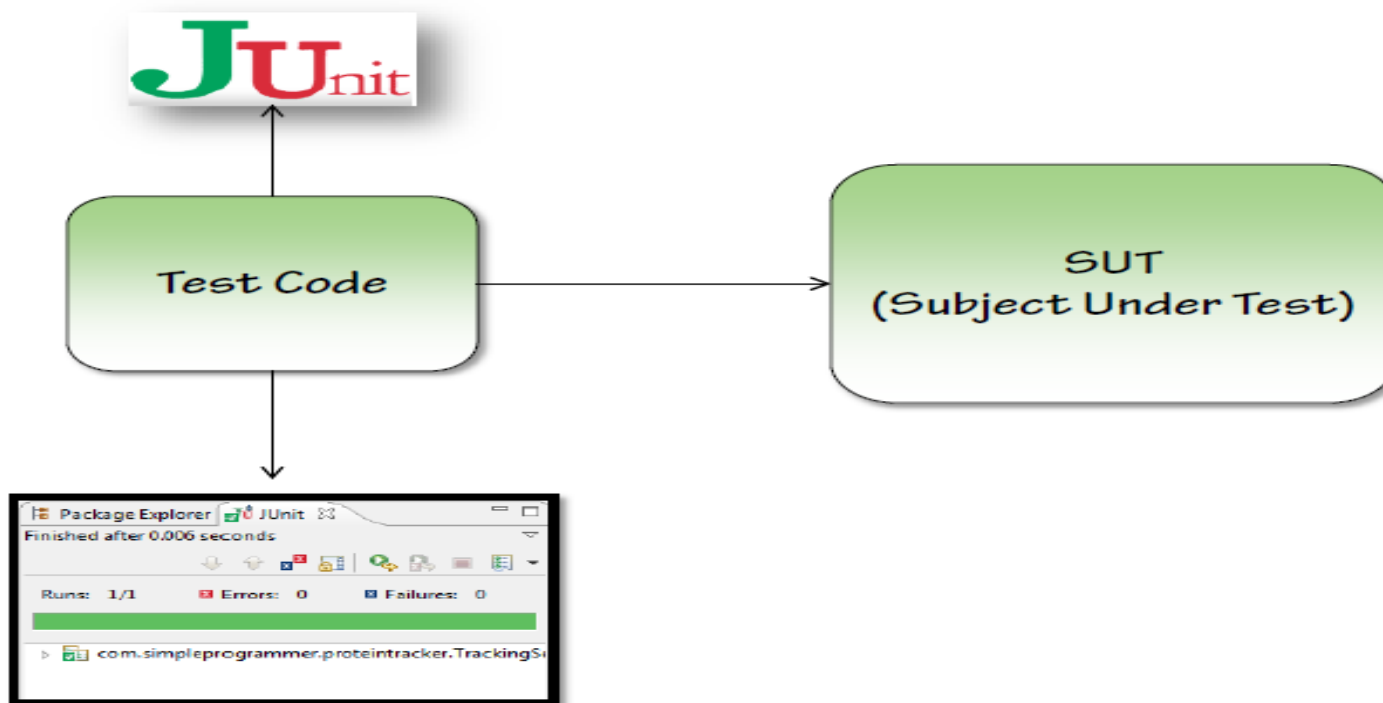
## Features:

- open source framework
- Annotations
- Asserts
- Test setup and teardown
- Exception testing
- Test suites
- Parameterized testing
- Assumptions
- Rules
- Theories
- Integration with popular build systems
- Test Runners
- Simple and elegant

# JUnit Overview

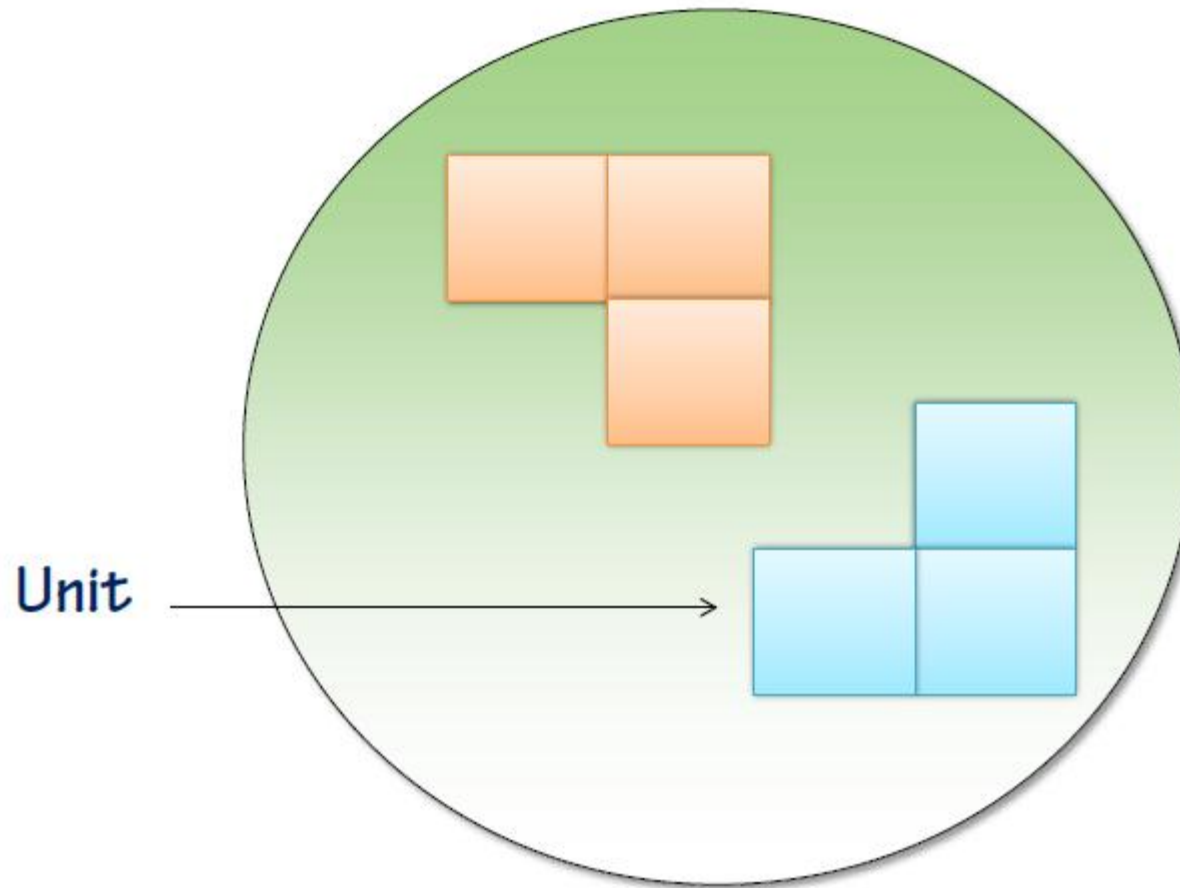
## Unit TestCase :

## JUnit



# Junit Overview

## What is Unit Testing?



# Junit Overview

## History of Junit:

Introduced by “**Kent Beck**”

The origin of the elite fighting force known as “J Unit”

Creator of Sunit which led to Junit and all the derivatives thereof

1994 → Sunit

1997 → Junit

2000 → Junit.org

2002 → Eclipse supports

Junit still continues to evolve

# Junit Overview

## Setting up Junit

Directly use from IDE (Eclipse)

Download the jars and manually include it in IDE.

# JUnit Basics

## JUnit Test Methods

*@Test*

Test Method

# JUnit Basics

## JUnit Annotations (Basic)

@Test

@Before - setUp

@After - tearDown

@BeforeClass

@AfterClass

@Ignore

@Test(expected = Exception.class)

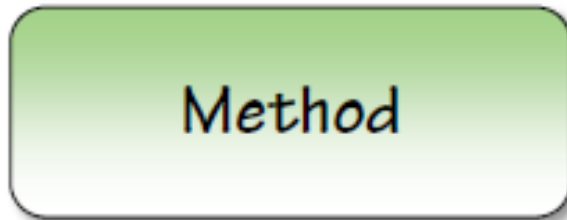
@Test(timeout = 100)



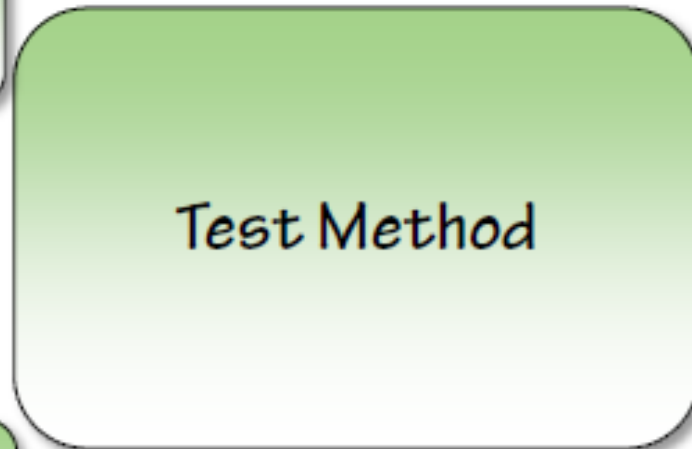
# Testing Framework

Before And After:

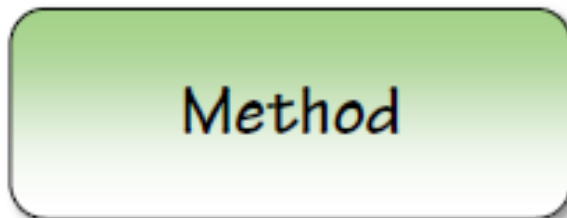
*@Before*



*@Test*



*@After*



# Junit Basics

## BeforeClass and AfterClass

`@BeforeClass`

Static Method

`@Before`

Method

`@Test`

(annotation)

Test Method

`@After`

Method

`@Before`

Method

`@Test`

(annotation)

Test Method

`@After`

Method

`@AfterClass`

Static Method

# Junit Basics

## Exception Testing

`@BeforeClass`

`@Test(expected = Exception.class)`

Test Method

# Junit Basics

Timeout

```
@Test(timeout = 100)
```

Test Method

# Junit Basics

## **Assertions (Basic)**

assertArrayEquals

assertEquals

assertTrue

assertFalse

assertNull

assertNotNull

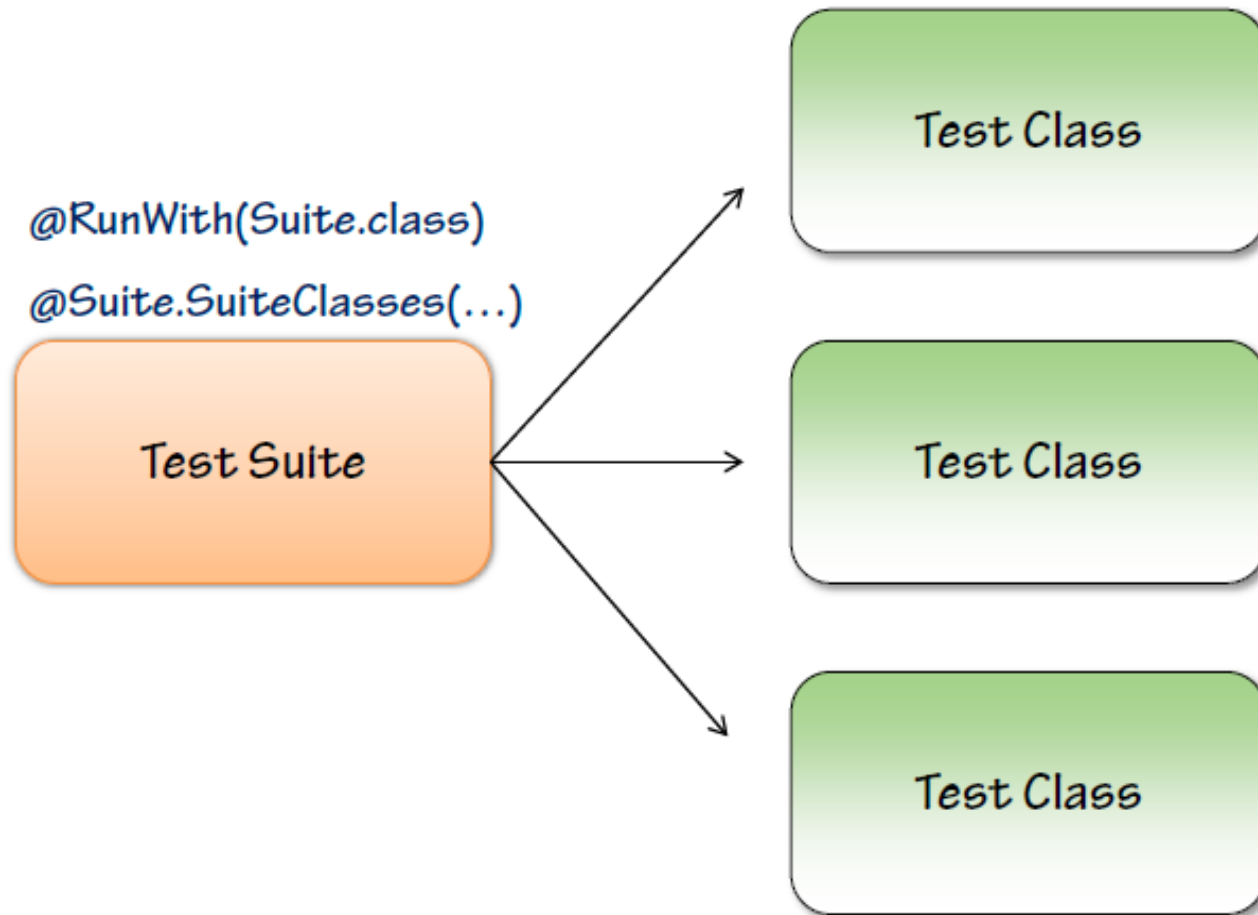
assertSame

assertNotSame

fail

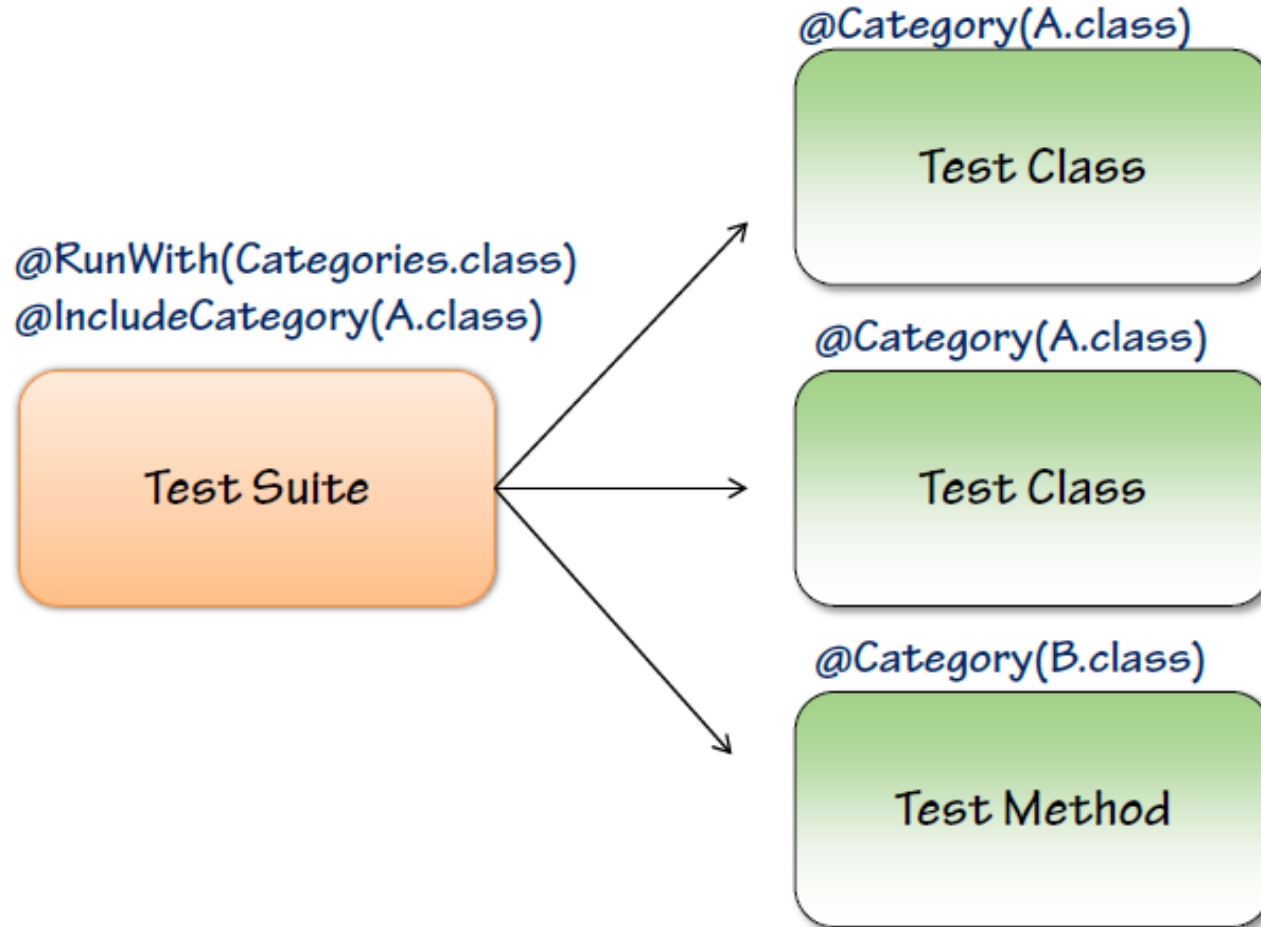
# Advanced Junit

## Test Suites



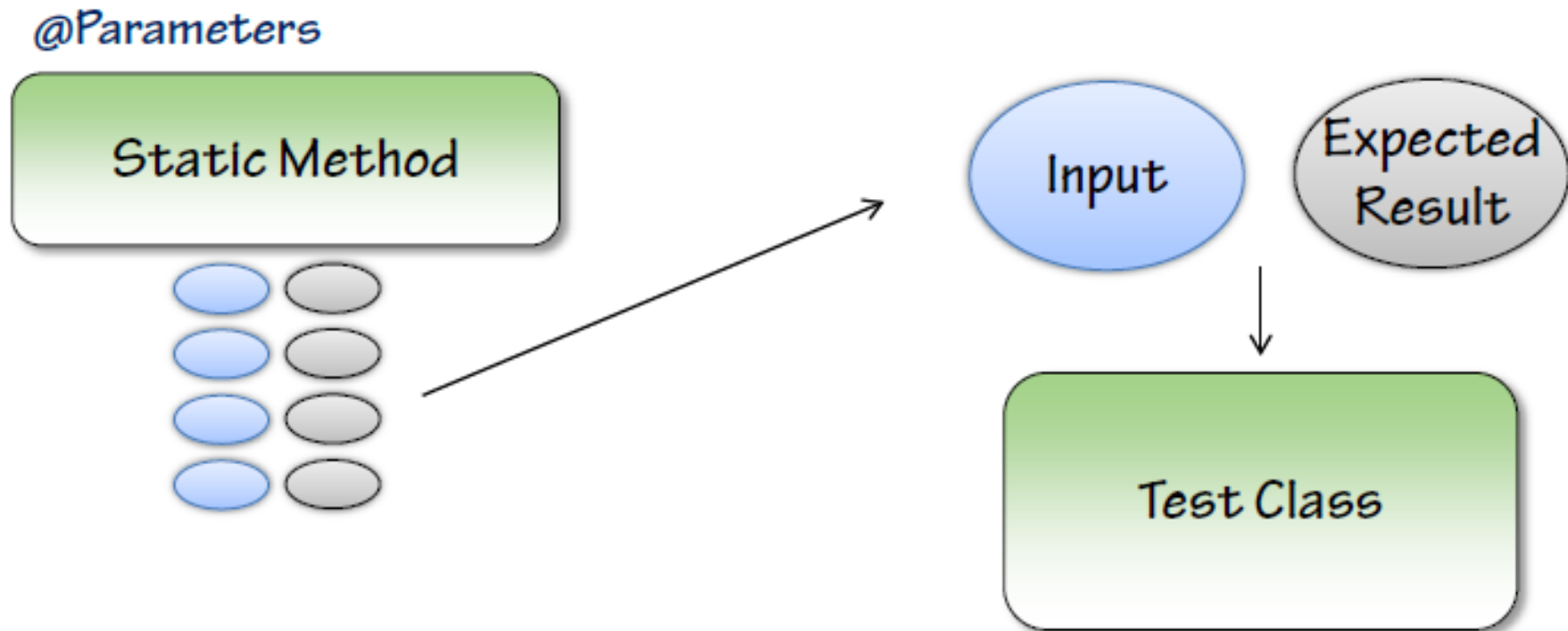
# Advanced Junit

## Categories



# Advanced Junit

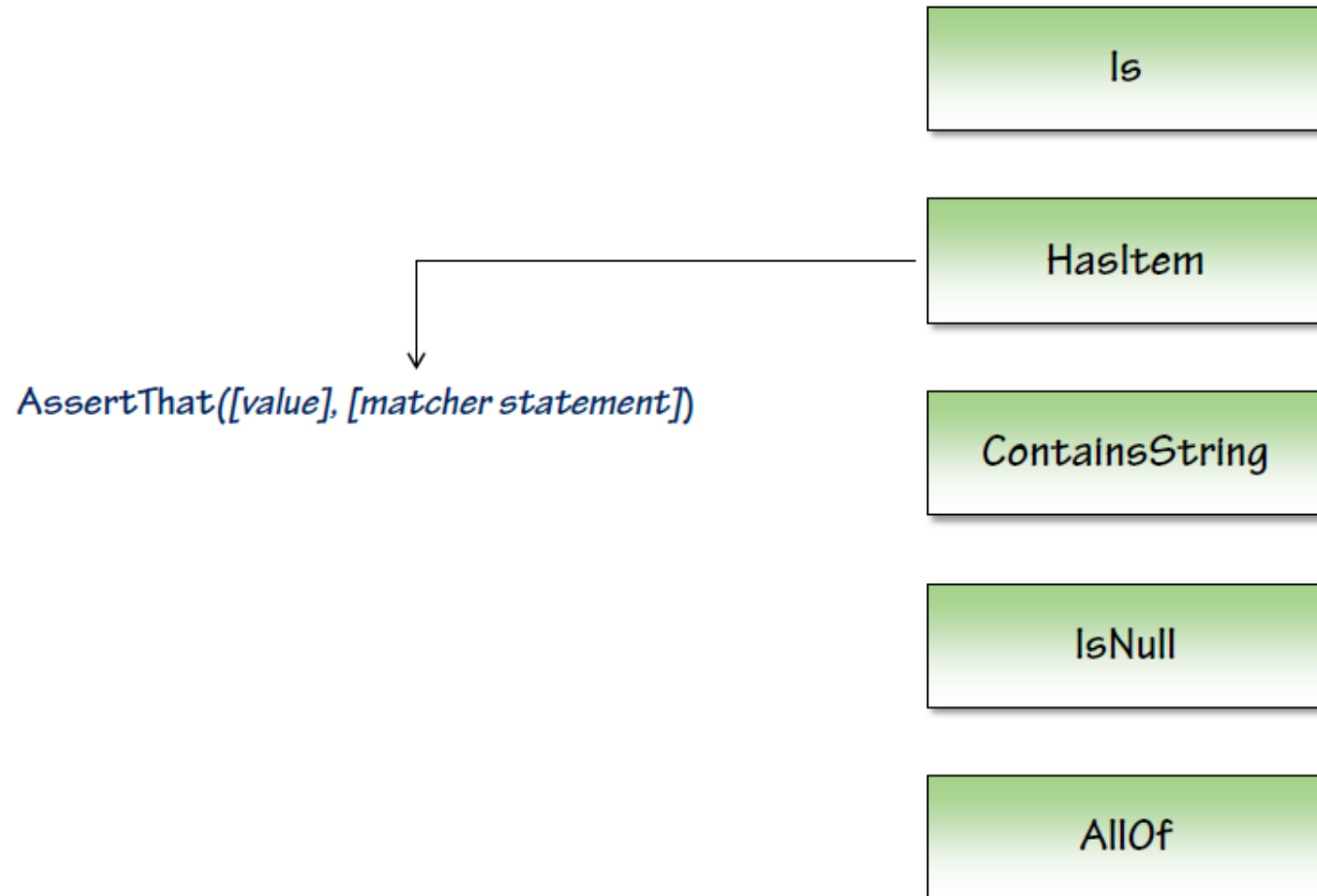
## Parameterized Test Case





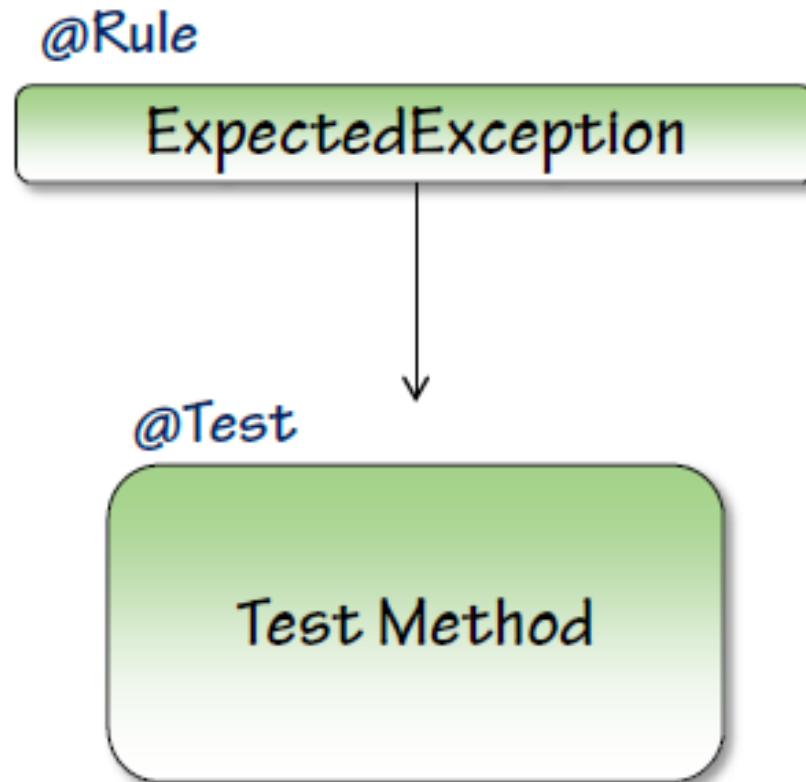
# Advanced Junit

## Advanced Assertions



# Advanced Junit

## Advanced Exception Testing



# Advanced Junit

## Rules - @ClassRule

- TemporaryFolder
- ExternalResource
- ErrorCollector
- Verifier
- TestWatcher
- TestName
- Timeout
- ExpectedException
- RuleChain

# Advanced Junit

## Theories:

@DataPoint

Static Method



@Theory

Test Method

# Integration Junit



# Integrating JUnit

- Console Runners
- Command Prompt Runners
- **Org.junit.core.JUnitCore** class used to start the runners.

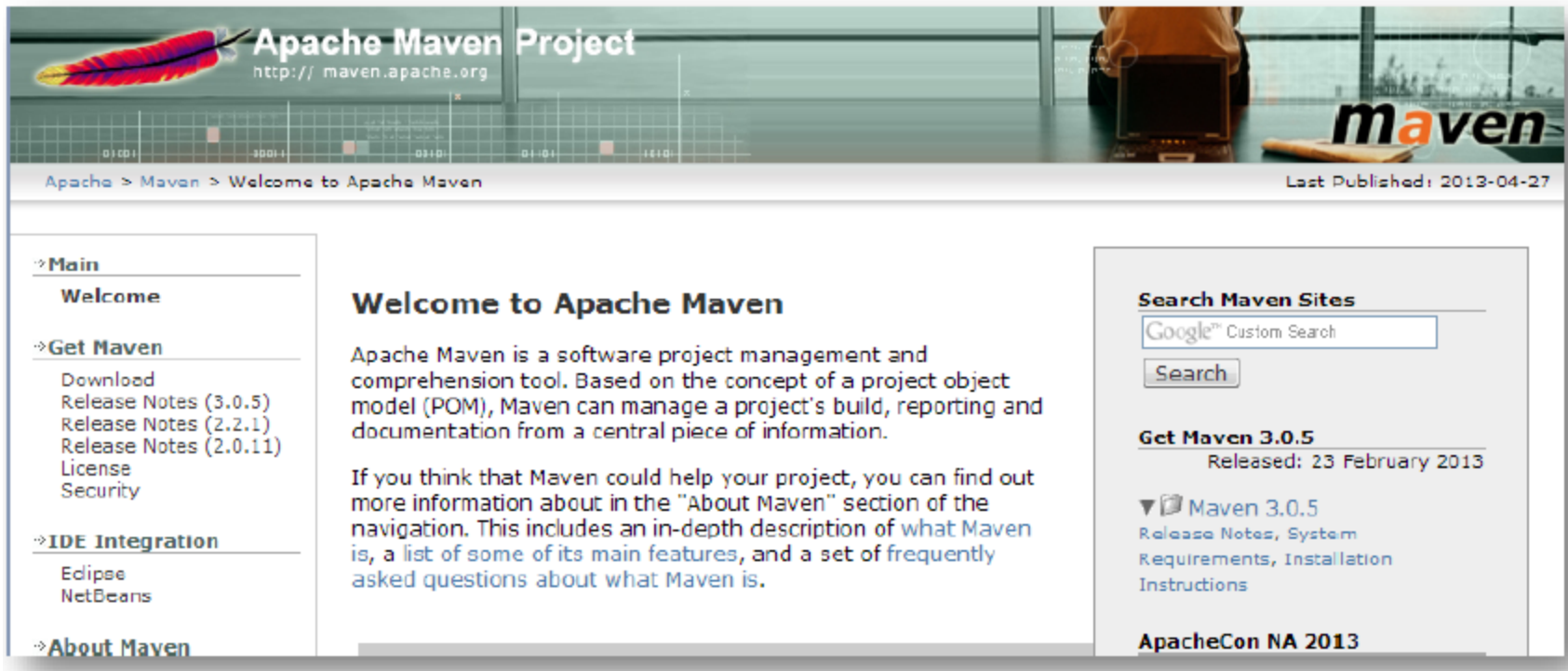
# Integrating JUnit

## JUnit And Ant



# Integrating JUnit

## JUnit And Maven



The screenshot shows the Apache Maven Project website. At the top, there is a banner with the Apache Maven Project logo (a red and yellow feather) and the URL <http://maven.apache.org>. Below the banner, the navigation bar shows "Apache > Maven > Welcome to Apache Maven" and "Last Published: 2013-04-27".

The main content area is titled "Welcome to Apache Maven". It contains the following text:

Apache Maven is a software project management and comprehension tool. Based on the concept of a project object model (POM), Maven can manage a project's build, reporting and documentation from a central piece of information.

If you think that Maven could help your project, you can find out more information about in the "About Maven" section of the navigation. This includes an in-depth description of what Maven is, a list of some of its main features, and a set of frequently asked questions about what Maven is.

The left sidebar contains the following navigation links:

- Main
  - Welcome
- Get Maven
  - Download
  - Release Notes (3.0.5)
  - Release Notes (2.2.1)
  - Release Notes (2.0.11)
  - License
  - Security
- IDE Integration
  - Eclipse
  - NetBeans
- About Maven

The right sidebar contains the following information:

- Search Maven Sites**
  - Google™ Custom Search
  - Search
- Get Maven 3.0.5**
  - Released: 23 February 2013
  - ▼ Maven 3.0.5
    - Release Notes, System Requirements, Installation Instructions
- ApacheCon NA 2013**

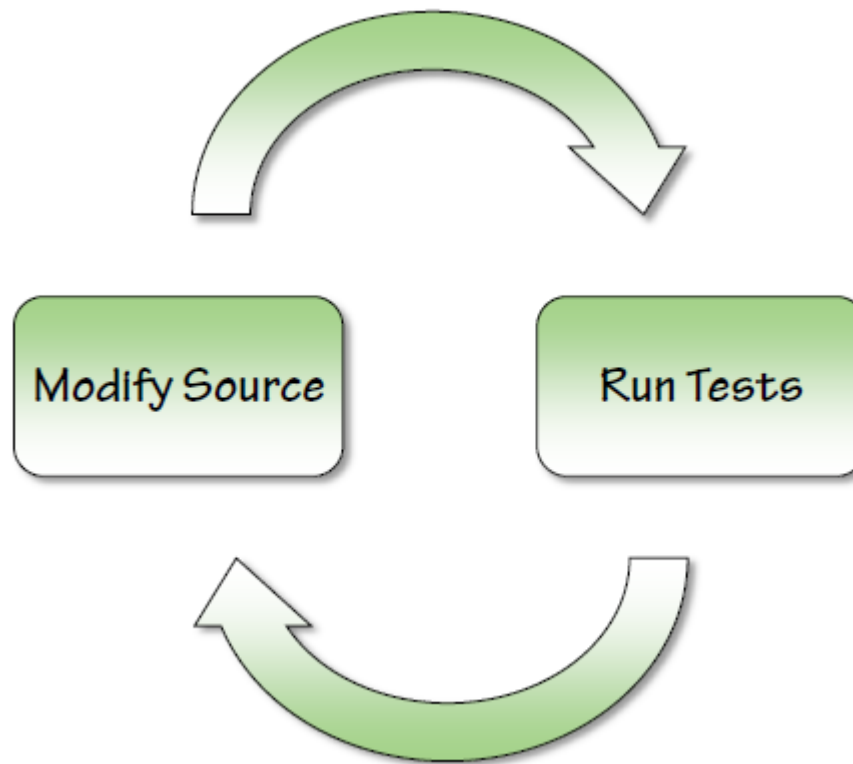


# Integrating JUnit

## Eclemma - CodeCoverage



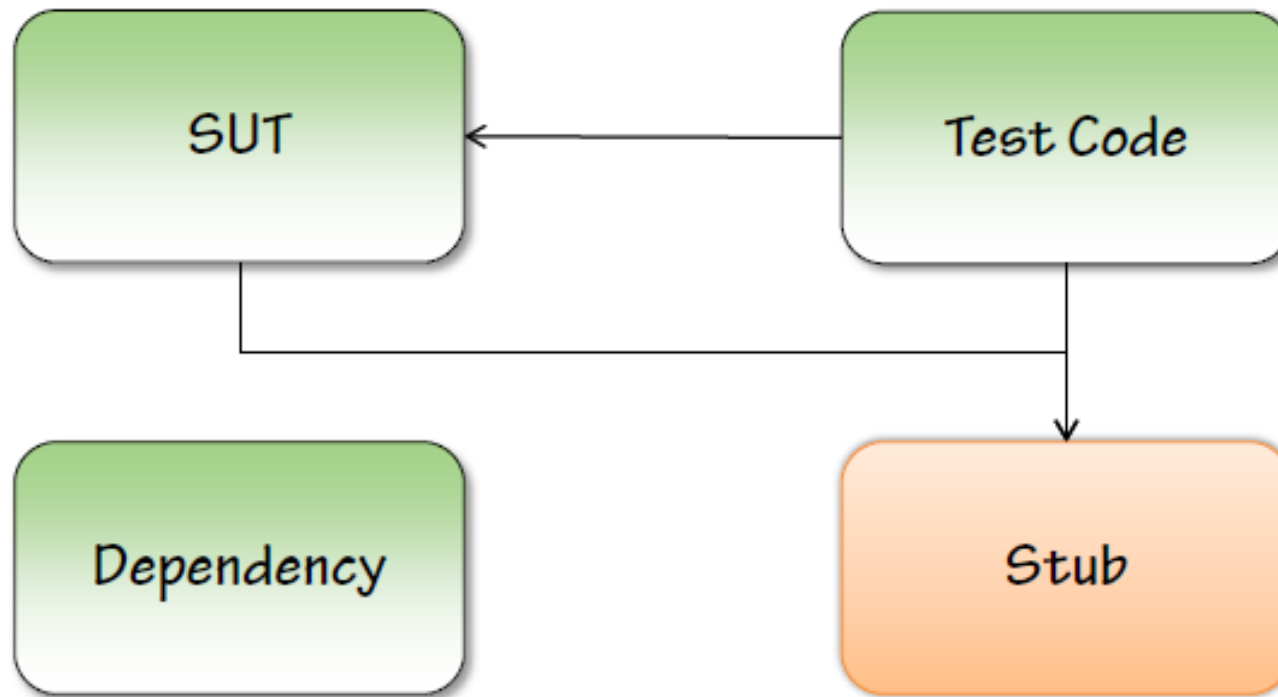
# Beyond Junit



# Beyond Junit

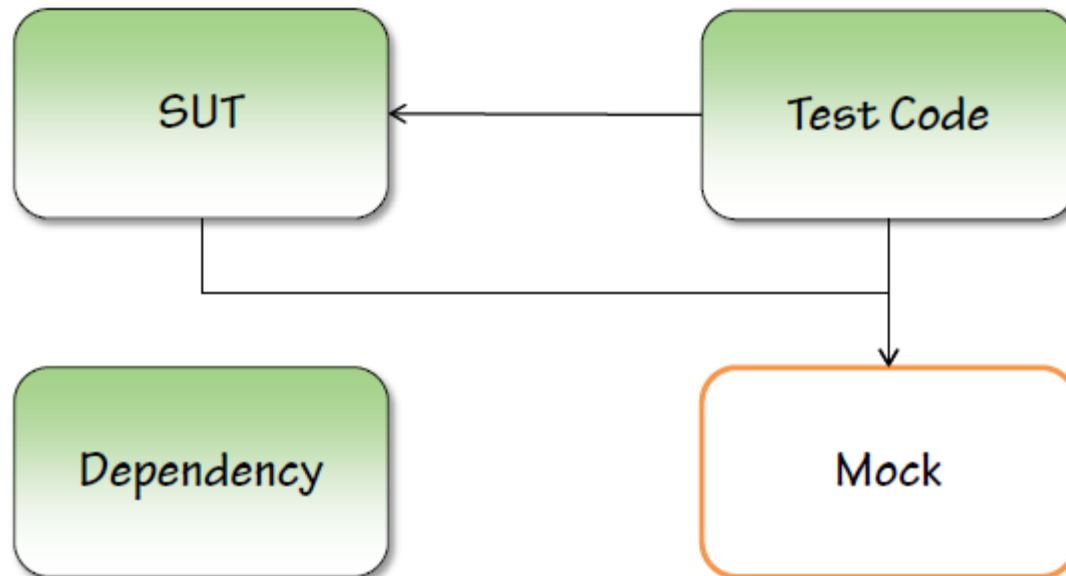
Dependencies

Stubs



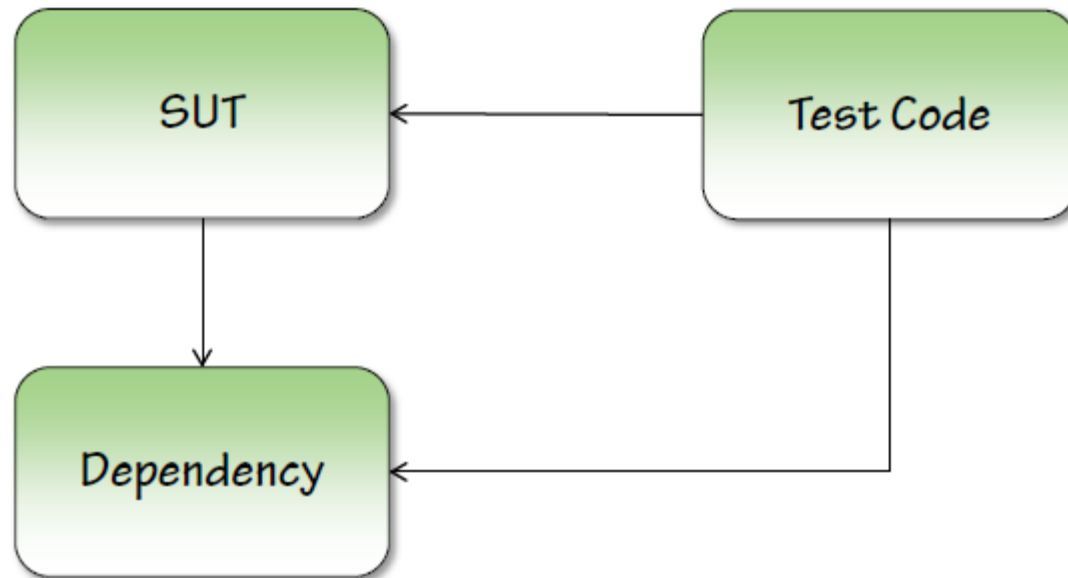
# Beyond Junit

## Mocks



# Beyond Junit

## Integration Testing



# Summary

**Junit Overview**

**Junit Basics**

**Advanced Junit**

**Beyond Junit**

People matter, results count.

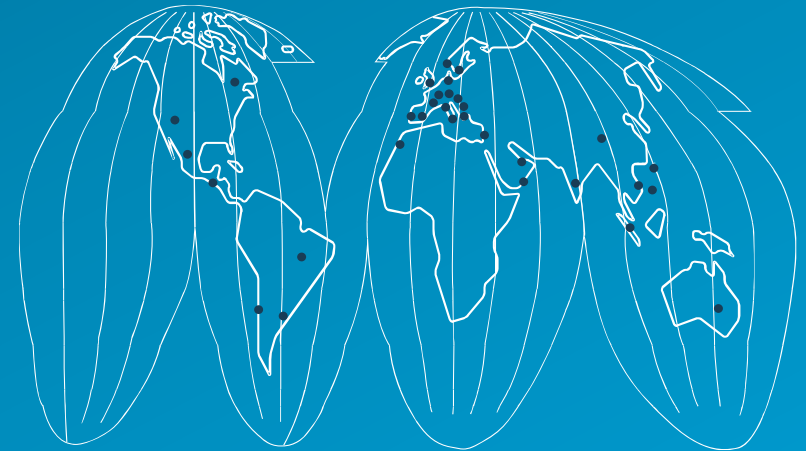


## About Capgemini

With more than 145,000 people in 40 countries, Capgemini is one of the world's foremost providers of consulting, technology and outsourcing services. The Group reported 2014 global revenues of EUR 10.5 billion.

Together with its clients, Capgemini creates and delivers business and technology solutions that fit their needs and drive the results they want. A deeply multicultural organization, Capgemini has developed its own way of working, the Collaborative Business Experience™, and draws on Rightshore®, its worldwide delivery model.

*Rightshore® is a trademark belonging to Capgemini*



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