

Writing Test Classes



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Overview



Overview of test classes

- What are test classes?
- Why are test classes important?
- Requirements of test classes

Demo time:

- HelloWorld test class
- AppleWatch test class

How Salesforce calculates test coverage

The Four Commandments

Demo: DedupeReminder test class



Overview of Test Classes



Test classes:

“Apex code that tests other Apex code.”



What Did We Do After HelloWorld?



What Did We Do After AppleWatch?



What Did We Do After DedupeReminder?



The General Testing Formula

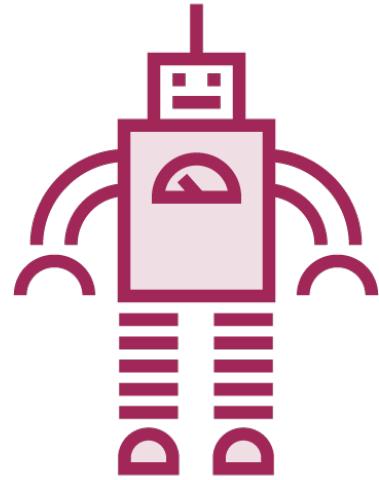
1. Create or
modify test
records

2. Force our
triggers to
execute

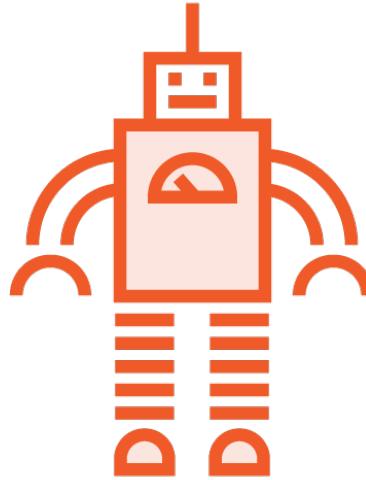
3. Verify the
results



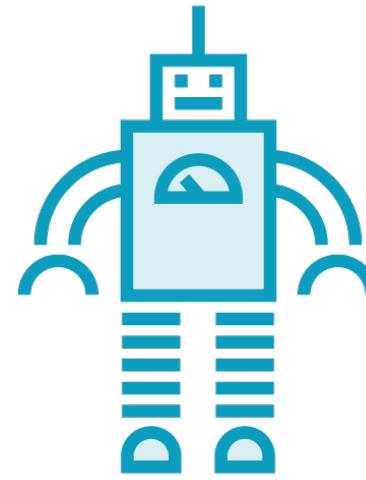
Test Classes Are Your Army of Testing Robots!



BEEP BEEP
MUST TEST
HELLOWORLD
TRIGGER



DOOT DOOT
MUST TEST
APPLEWATCH
TRIGGER



BZZZ BZZZ
MUST TEST
DEDUPEREMINDER
TRIGGER



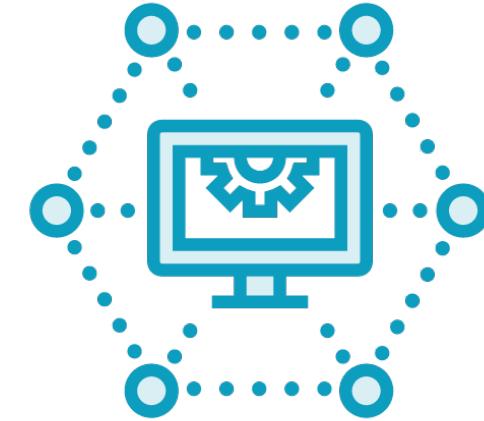
Why Salesforce Wants You to Write Tests



**“We want to make
sure you’re writing
good code.”**



**“You better not break
our servers by writing
bad code!”**



**All test classes are run
whenever a new
Salesforce version is
released**



Requirements for Test Classes

75%

Lines of code that
must be executed by
test classes



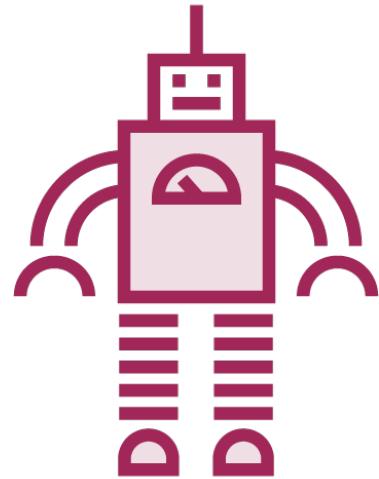
All assertions
must pass



All test classes in your org
must pass to deploy code in
production.



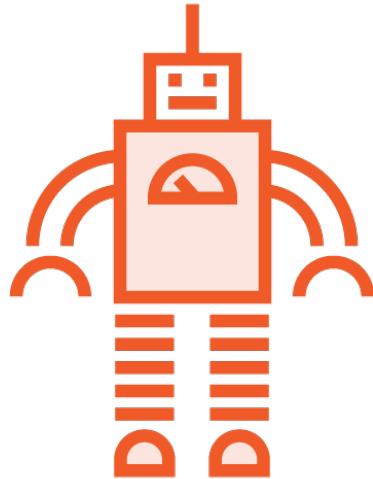
Test Classes Are Your Army of Testing Robots!



HELLOWORLD ROBOT:

75% code executed:
PASS

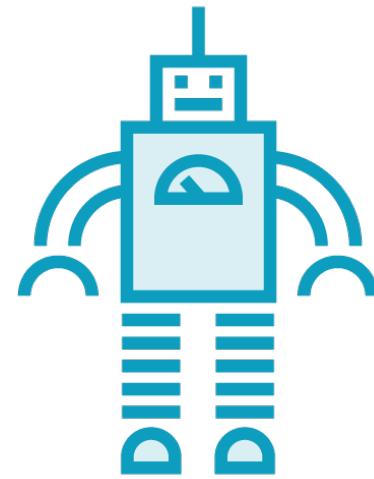
Assertions pass:
PASS



APPLEWATCH ROBOT:

75% code executed:
PASS

Assertions pass:
FAIL



DEDUPEREMINDER ROBOT:

75% code executed:
PASS

Assertions pass:
PASS



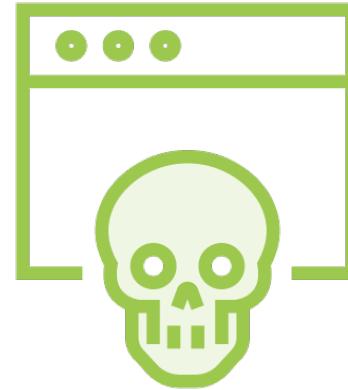
Why YOU Love Writing Tests



Never manually
test your work
again!



Make sure you
don't break
someone else's
code



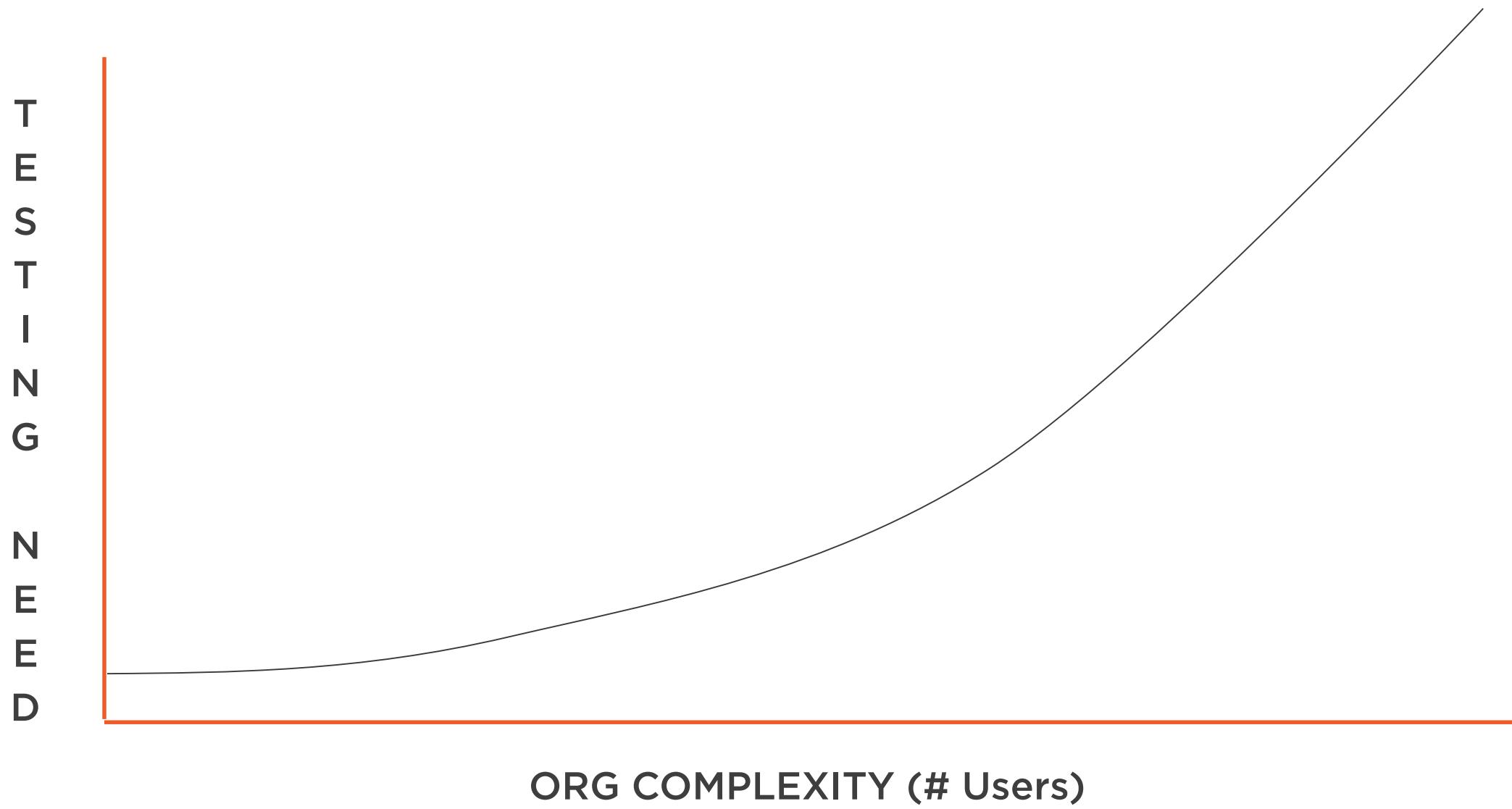
Make sure
someone else
doesn't break
your code



Testing is a
standard for any
coding language



Testing Importance Graph



Demo



Write a test class for HelloWorld:

```
trigger HelloWorld on Lead (before update) {  
    for (Lead l : Trigger.new) {  
        l.FirstName = 'Hello';  
        l.LastName = 'World';  
    }  
}
```

Goal: 100% test coverage



Demo



Write a test class for AppleWatch:

```
trigger AppleWatch on Opportunity  
(after insert) {  
  
    for (Opportunity opp : Trigger.new) {  
  
        Task t = new Task();  
  
        t.Subject      = 'Apple Watch Promo';  
        t.Description = 'Send one ASAP!';  
        t.Priority     = 'High';  
        t.WhatId       = opp.Id;  
  
        insert t;  
    }  
}
```

Goal: 100% test coverage



How Salesforce Calculates Test Coverage



How Salesforce Calculates Test Coverage

HelloWorld

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trigger HelloWorld on Lead  
(before update) {  
  
    for (Lead l : Trigger.new) {  
  
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    }  
  
}
```

HelloWorldTest

```
@isTest  
private class HelloWorldTest {  
  
    @isTest static void updateLead() {  
  
        Lead myLead = new Lead();  
        myLead.FirstName = 'David';  
        myLead.LastName  = 'Liu';  
        myLead.Company    = 'Google';  
        insert myLead;  
  
        myLead.Company = 'PluralSight';  
        update myLead;  
  
    }  
}
```



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AppleWatch

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(after insert) {  
  
    for (Opportunity opp : Trigger.new) {  
  
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        t.Subject      = 'Apple Watch Promo';  
        t.Description = 'Send one ASAP!';  
        t.Priority     = 'High';  
        t.WhatId       = opp.Id;  
  
        insert t;  
    }  
}
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@isTest  
private class AppleWatchTest {  
  
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    static void createOpportunity() {  
  
        Opportunity opp = new Opportunity();  
        opp.Name          = 'Swift Deal';  
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        insert opp;  
    }  
}
```



How Salesforce Calculates Test Coverage

AppleWatchGold

```
trigger AppleWatchGold on Opportunity  
(after insert) {  
  
    for (Opportunity opp : Trigger.new) {  
        if (opp.Amount > 50000) {  
  
            Task t = new Task();  
  
            t.Subject      = 'Apple Watch Gold';  
            t.Description = 'Send one ASAP!';  
            t.Priority     = 'High';  
            t.WhatId       = opp.Id;  
  
            insert t;  
        }  
    }  
}
```

AppleWatchTest

```
@isTest  
private class AppleWatchGoldTest {  
  
    @isTest  
    static void createOpportunity() {  
  
        Opportunity opp = new Opportunity();  
        opp.Name         = 'Swift Deal';  
        opp.StageName   = 'Prospecting';  
        opp.CloseDate   = Date.today();  
        insert opp;  
    }  
}
```



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AppleWatchGold

```
trigger AppleWatchGold on Opportunity  
(after insert) {  
  
    for (Opportunity opp : Trigger.new) {  
  
        if (opp.Amount > 50000) {  
  
            Task t = new Task();  
  
            t.Subject      = 'Apple Watch Gold';  
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            t.Priority     = 'High';  
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            insert t;  
  
        }  
    }  
}
```

AppleWatchTest

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@isTest  
private class AppleWatchGoldTest {  
  
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        insert opp;  
  
    }  
}
```



The Salesforce Dating Game!



Lazy Larry

Only meets the
minimum 75% testing
requirement and
nothing more!



SeeAllData=True Sally

Never bothers to
create records from
scratch!



Architect Angela

Writes gorgeous,
enterprise-grade
scalable test classes!



Demo



Write a test class for DedupeReminder:

```
trigger DedupeReminder on Account (after insert) {  
    for (Account acc : Trigger.new) {  
  
        Case c = new Case();  
        c.Subject = 'Dedupe this Account';  
        c.OwnerId = '00561000000bECH';  
        c.AccountId = acc.Id;  
        insert c;  
    }  
}
```

Goal: 100% test coverage



DedupeReminder Test Class Answer

```
@isTest
private class DedupeReminderTest {
    @isTest static void createAccount() {
        Account acc = new Account();
        acc.Name      = 'SFDC99';
        insert acc;
    }
}
```



Summary



Test class overview

- Code that tests other code
- Salesforce requires 75% coverage
- Best practice for reducing bugs

How to write test classes

- Mimic how you'd manually test code
- Create all data from scratch

We love writing test classes!

