



# Core Testing>Basic Testing>Day 9



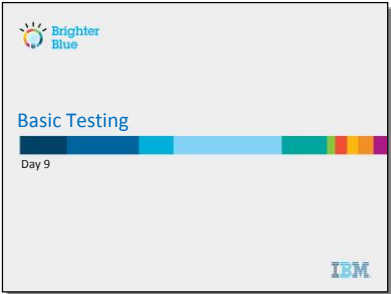
Student Guide



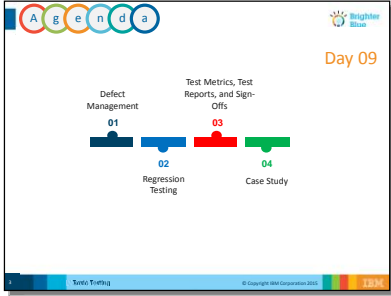
## Contents

<b>MODULE 01: DEFECT MANAGEMENT</b>	<b>3</b>
<b>MODULE 02: REGRESSION TESTING</b>	<b>41</b>
<b>MODULE 03: TEST METRICS, TEST REPORTS, AND SIGN-OFF</b>	<b>50</b>
<b>MODULE 04: CASE STUDY</b>	<b>83</b>

## Module 01: Defect Management

Slide Content	Use this space for your own notes
<p>Slide 1</p>  <p>The thumbnail shows a slide with the 'Brighter Blue' logo at the top left, the title 'Basic Testing' in the center, a horizontal bar with colored segments below the title, 'Day 9' at the bottom left, and the 'IBM' logo at the bottom right.</p>	


# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 2</p>  <p>At the end of the module, you should be able to:</p> <ul style="list-style-type: none"> <li>▪ Define defect</li> <li>▪ Define and illustrate defect life cycle</li> <li>▪ Describe the testing principles</li> <li>▪ Define and classify defect classes</li> <li>▪ List the requirement specification defects</li> <li>▪ Describe the different types of design defects</li> <li>▪ List the design and coding defects</li> <li>▪ Illustrate defect origination and the cost of fixing defects</li> <li>▪ Describe how to prevent defects, the cost of errors and the legal consequences of defective testing</li> <li>▪ Illustrate defect and change tracking</li> <li>▪ Describe how to conduct log change requests</li> </ul>	

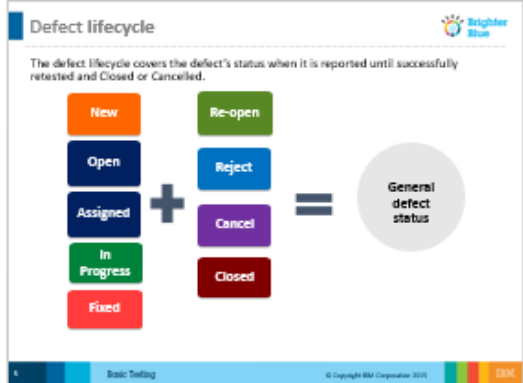
## Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<ul style="list-style-type: none"><li>▪ Describe what are test defect metrics, defect severity, defect find and fix rate, and other defect metrics</li><li>▪ Describe the common defect tracking tools</li><li>▪ Illustrate the common defect or change request life cycle</li><li>▪ Describe what are defect remarks and how to use checklist before entering a defect and how to avoid duplication</li></ul>	

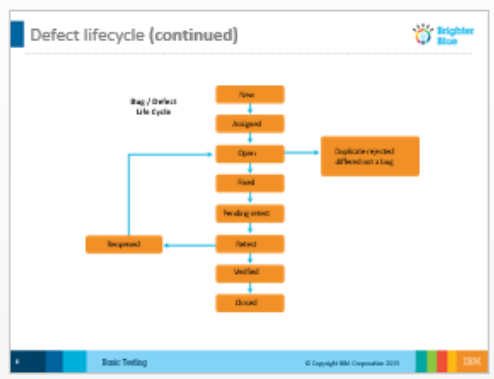
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 3</p> 	

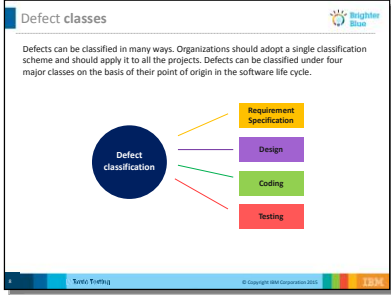
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 4</p> <div data-bbox="447 406 966 787">  <p><b>Defect lifecycle</b></p> <p>The defect lifecycle covers the defect's status when it is reported until successfully retested and Closed or Cancelled.</p> <p>Flow: New → Open → Assigned → In Progress → Fixed → Re-open → Reject → Cancel → Closed → General defect status</p> </div>	

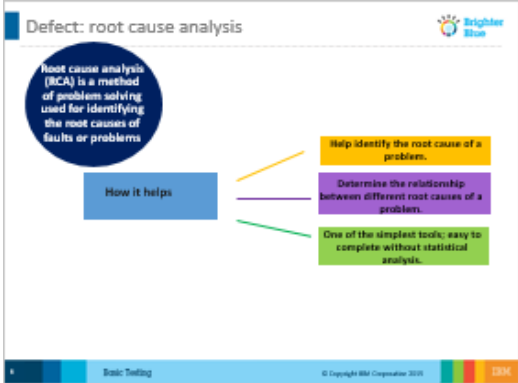
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 5</p>  <pre> graph TD     New[New] --&gt; Assigned[Assigned]     Assigned --&gt; Open[Open]     Open --&gt; Fixed[Fixed]     Fixed --&gt; Pending[Pending review]     Pending --&gt; Closed[Closed]     Closed --&gt; Reopened[Reopened]     Reopened --&gt; Open     Open --&gt; Duplicate[Duplicate reported different test case]     Duplicate --&gt; Closed     </pre> <p>The flowchart illustrates the defect lifecycle. It starts with 'New', followed by 'Assigned', 'Open', 'Fixed', 'Pending review', and 'Closed'. From 'Closed', it can either 'Reopened' (which loops back to 'Open') or 'Duplicate reported different test case' (which leads to 'Closed'). The diagram is titled 'Defect lifecycle (continued)' and includes the 'Brighter Blue' logo. At the bottom, it says 'Basic Testing' and '© Copyright IBM Corporation 2015'.</p>	

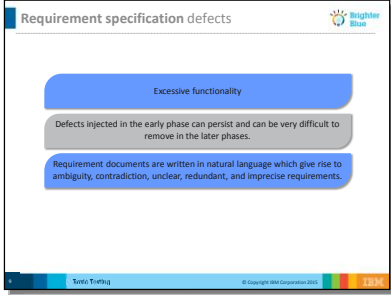
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 6</p> 	

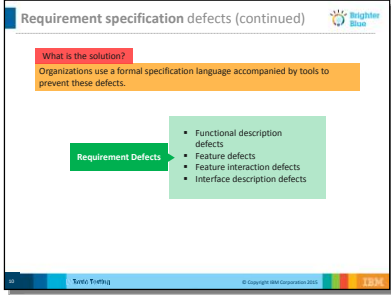
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 7</p>  <p>The diagram is titled "Defect: root cause analysis" and includes the Brighter Blue logo. It features a central blue circle with the text: "Root cause analysis (RCA) is a method of problem solving used for identifying the root causes of faults or problems." To the right of this circle is a box labeled "How it helps" which branches into three colored boxes: yellow ("Help identify the root cause of a problem."), purple ("Determine the relationship between different root causes of a problem."), and green ("One of the simplest tools; easy to complete without statistical analysis."). The footer contains "Basic Testing", "© Copyright IBM Corporation 2015", and the IBM logo.</p>	

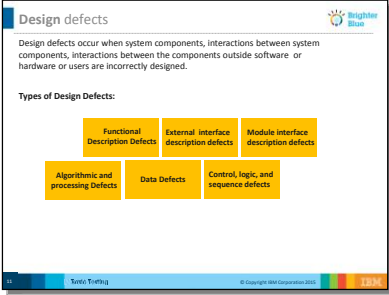
# Core Testing > Basic Testing > Day 9

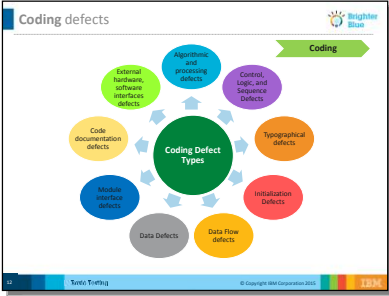
Slide Content	Use this space for your own notes
<p>Slide 8</p> 	

# Core Testing > Basic Testing > Day 9

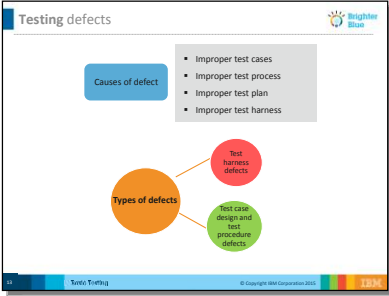
Slide Content	Use this space for your own notes
<p>Slide 9</p> 	

# Core Testing > Basic Testing > Day 9

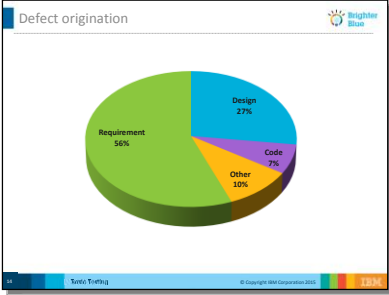
Slide Content	Use this space for your own notes
<p>Slide 10</p> 	

Slide Content	Use this space for your own notes
<p>Slide 11</p>  <p>Coding defects are derived from errors in implementing the code. Coding defects are similar to design defects.</p>	

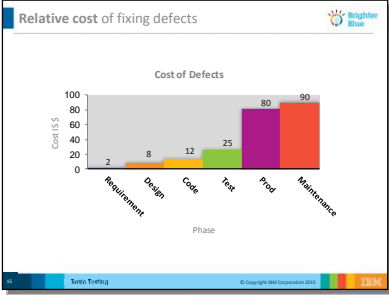
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 12</p>  <p>The diagram, titled 'Testing defects', illustrates the causes and types of defects. On the left, a blue box labeled 'Causes of defect' points to a list of four items: 'Improper test cases', 'Improper test process', 'Improper test plan', and 'Improper test harness'. On the right, an orange circle labeled 'Types of defects' points to two categories: 'Test harness defects' (in a red circle) and 'Test case design and test procedure defects' (in a green circle). The diagram is part of a presentation slide with a footer that reads 'Tested Training' and '© Copyright IBM Corporation 2015'.</p> <p>Defects originate due to improper Test Plan, Test Cases, Test Harness, and Test Process.</p>	

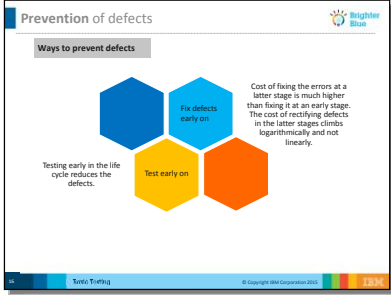
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 13</p> 	

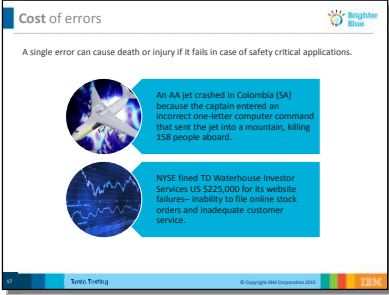
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes														
<p>Slide 14</p>  <table border="1"> <caption>Relative cost of fixing defects</caption> <thead> <tr> <th>Phase</th> <th>Cost (\$)</th> </tr> </thead> <tbody> <tr> <td>Requirement</td> <td>2</td> </tr> <tr> <td>Design</td> <td>8</td> </tr> <tr> <td>Code</td> <td>12</td> </tr> <tr> <td>Test</td> <td>25</td> </tr> <tr> <td>Prod</td> <td>80</td> </tr> <tr> <td>Maintenance</td> <td>90</td> </tr> </tbody> </table>	Phase	Cost (\$)	Requirement	2	Design	8	Code	12	Test	25	Prod	80	Maintenance	90	
Phase	Cost (\$)														
Requirement	2														
Design	8														
Code	12														
Test	25														
Prod	80														
Maintenance	90														

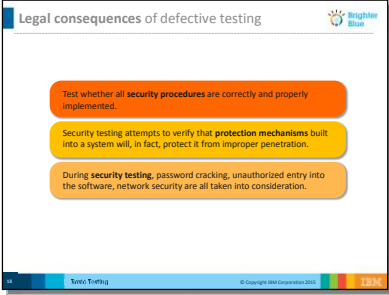
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 15</p>  <p>The slide titled 'Prevention of defects' features a diagram with four hexagons: 'Test early in the life cycle reduces the defects' (dark blue), 'Test early on' (yellow), 'Fix defects early on' (light blue), and an empty orange hexagon. Text on the right states: 'Cost of fixing the errors at a latter stage is much higher than fixing it at an early stage. The cost of rectifying defects in the latter stages climbs logarithmically and not linearly.' The slide footer includes 'Teste Testing', '© Copyright IBM Corporation 2015', and the IBM logo.</p>	

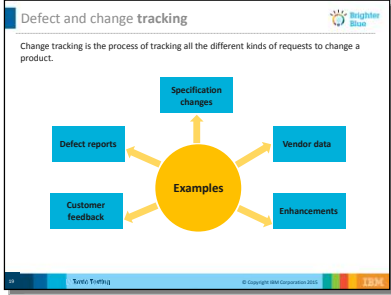
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 16</p> 	

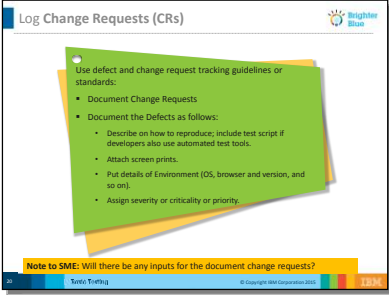
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 17</p> 	

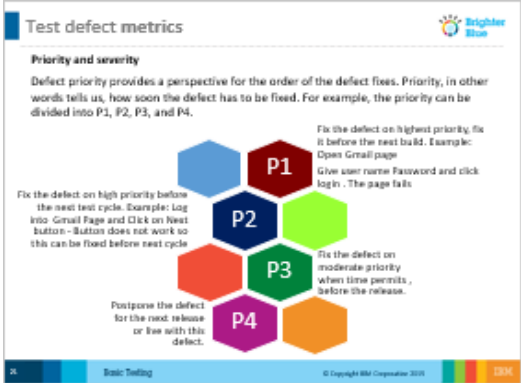
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 18</p>  <p>The diagram illustrates the process of change tracking. At the center is a yellow circle labeled 'Examples'. Four arrows point outwards from this circle to four blue rectangular boxes: 'Specification changes' (top), 'Vendor data' (right), 'Enhancements' (bottom), and 'Defect reports' (left). Above the diagram, the text reads: 'Defect and change tracking' followed by the Brighter Blue logo. Below the diagram, a small text box states: 'Change tracking is the process of tracking all the different kinds of requests to change a product.' At the bottom of the slide, there is a footer with 'Testa Training' on the left, '© Copyright IBM Corporation 2015' in the center, and the IBM logo on the right.</p>	

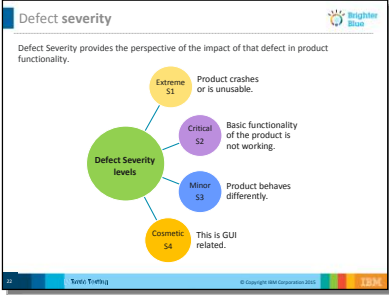
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 19</p>  <p><b>Log Change Requests (CRs)</b></p> <p>Use defect and change request tracking guidelines or standards.</p> <ul style="list-style-type: none"> <li>Document Change Requests</li> <li>Document the Defects as follows:             <ul style="list-style-type: none"> <li>Describe on how to reproduce include test script if developers also use automated test tools.</li> <li>Attach screen prints.</li> <li>Put details of Environment (OS, browser and version, and so on).</li> <li>Assign severity or criticality or priority.</li> </ul> </li> </ul> <p><b>Note to SME:</b> Will there be any inputs for the document change requests?</p> <p>Testa Training © Copyright IBM Corporation 2015 IBM</p>	

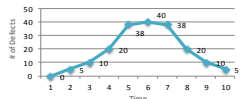
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 20</p>  <p><b>Test defect metrics</b></p> <p><b>Priority and severity</b></p> <p>Defect priority provides a perspective for the order of the defect fixes. Priority, in other words tells us, how soon the defect has to be fixed. For example, the priority can be divided into P1, P2, P3, and P4.</p> <p><b>P1</b> Fix the defect on highest priority, fix it before the next build. Example: Open Gmail page. Give user name Password and click login. The page fails.</p> <p><b>P2</b> Fix the defect on high priority before the next test cycle. Example: Log into Gmail Page and Click on Reset button - Button does not work so this can be fixed before next cycle.</p> <p><b>P3</b> Fix the defect on moderate priority when time permits, before the release.</p> <p><b>P4</b> Postpone the defect for the next release or live with this defect.</p> <p>Basic Testing © Copyright IBM Corporation 2015 IBM</p>	

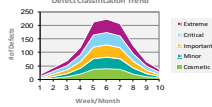
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 21</p>  <p>The diagram illustrates defect severity levels. A central green circle labeled 'Defect Severity levels' is connected to four colored circles: 'Extreme S1' (yellow), 'Critical S2' (purple), 'Minor S3' (blue), and 'Cosmetic S4' (orange). Each circle has a corresponding description: 'Extreme S1: Product crashes or is unusable.', 'Critical S2: Basic functionality of the product is not working.', 'Minor S3: Product behaves differently.', and 'Cosmetic S4: This is GUI related.' The diagram is part of a presentation slide titled 'Defect severity' with a subtitle 'Defect Severity provides the perspective of the impact of that defect in product functionality.' The slide also features the 'Brighter Blue' logo and an 'IBM' logo at the bottom.</p>	

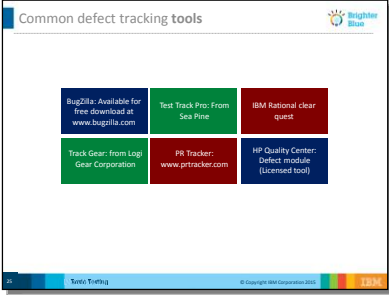
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 22</p> <div data-bbox="504 406 892 698"> <p>Defect find and fix rate</p> <div data-bbox="525 454 703 527"> <p><b>Find Rate</b></p> <p>Defect find rate is a measure of tracking and plotting the total number of defects found in the product at regular intervals (say, daily, or weekly) from beginning to the end of the product development cycle.</p> </div> <div data-bbox="714 454 882 527"> <p><b>Fix Rate</b></p> <p>Defect fix rate is a measure of tracking and plotting the total number of defects fixed in the product at regular intervals (say, daily, or weekly) from beginning to the end of the product development cycle.</p> </div> <p>Defect Find Rate</p>  <p>TIP: The same bell curve applies to fixed rate also.</p> <p>Source: Testing</p> </div>	

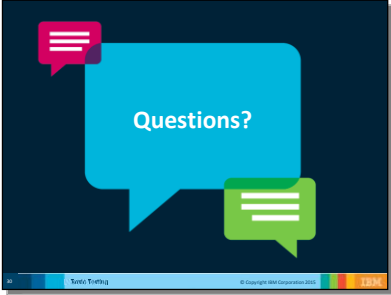
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 23</p> <div data-bbox="506 407 896 699"> <p>Other defect metrics</p> <div> <div> <p><b>Outstanding defect rate</b></p> <p>This is the number of outstanding defects which should be close to zero at all times in a well executed project during the entire test cycle.</p> </div> <div> <p><b>Priority outstanding rate</b></p> <p>It provides additional focus on those defects that matter for the release.</p> </div> <div> <p><b>Defect classification trend</b></p> <p>It measures the product from a release perspective of the defect classification in the chart and helps in finding out the release readiness of the product:</p> <ul style="list-style-type: none"> <li>How many are extreme defects</li> <li>How many are critical</li> <li>How many are important</li> </ul> </div> </div> <p>Defect Classification Trend</p>  <p>Tested Training</p> <p>© Copyright IBM Corporation 2015</p> </div>	

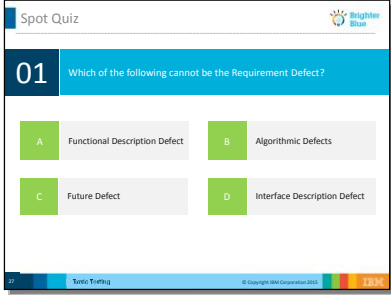
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 24</p>  <p>The slide titled 'Common defect tracking tools' features the Brighter Blue logo in the top right corner. It displays six colored boxes arranged in a 2x3 grid, each representing a different tool: Bugzilla (blue), Test Track Pro (green), IBM Rational clear quest (red), Track Gear (green), PR Tracker (red), and HP Quality Center (blue). Each box contains the tool name and either its source or website. At the bottom of the slide, there is a footer with 'Test Tracking' on the left, a copyright notice '© Copyright IBM Corporation 2015' in the center, and the IBM logo on the right.</p>	

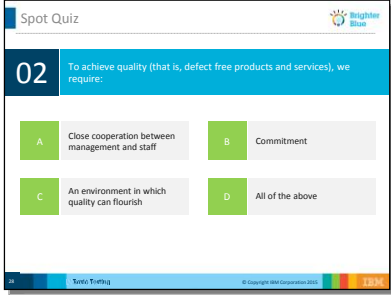
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 25</p> 	

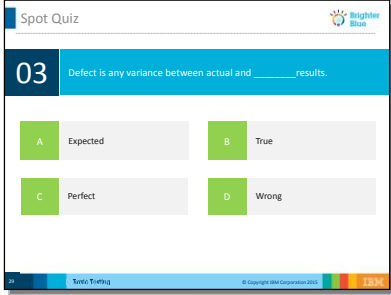
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 26</p>  <p>The image shows a 'Spot Quiz' slide from a presentation. The slide title is 'Spot Quiz' with the 'Brighter Blue' logo in the top right corner. The question is '01 Which of the following cannot be the Requirement Defect?'. There are four options: A Functional Description Defect, B Algorithmic Defects, C Future Defect, and D Interface Description Defect. The slide has a blue header and footer with the 'IBM' logo.</p>	


# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 27</p>  <p>The image shows a 'Spot Quiz' slide from a presentation. The slide title is 'Spot Quiz' with the 'Brighter Blue' logo in the top right corner. The question number '02' is in a blue box on the left. The question text is 'To achieve quality (that is, defect free products and services), we require:'. There are four options in green boxes: A 'Close cooperation between management and staff', B 'Commitment', C 'An environment in which quality can flourish', and D 'All of the above'. At the bottom, there is a footer with 'Basic Testing' and '© Copyright IBM Corporation 2015'.</p>	

# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 28</p>  <p>The image shows a 'Spot Quiz' slide from a presentation. The slide has a blue header with the text 'Spot Quiz' and the 'Brighter Blue' logo. Below the header, there is a question: '03 Defect is any variance between actual and _____ results.' There are four multiple-choice options: A Expected, B True, C Perfect, and D Wrong. The slide also features a footer with the text 'Tested Training' and '© Copyright IBM Corporation 2015'.</p>	

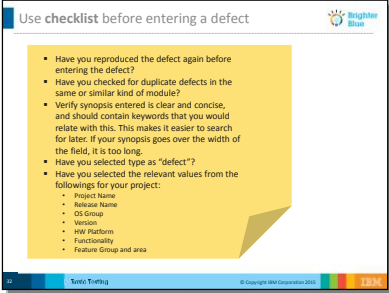
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 29</p>  <ul style="list-style-type: none"> <li>▪ <b>Condense:</b> Say it clearly but briefly.</li> <li>▪ <b>Accurate:</b> Is it a defect or could it be user error, misunderstanding, and so on?</li> <li>▪ <b>Neutralize:</b> Just the facts. No zingers. No humor. No emotion.</li> <li>▪ <b>Precise:</b> Explicitly, what is the problem?</li> <li>▪ <b>Isolate:</b> What has been done to isolate the problem?</li> <li>▪ <b>Re-create:</b> What are the essentials in triggering/re-creating this problem? (environment, steps, conditions)</li> <li>▪ <b>Impact:</b> What is the impact to the customer? What is the impact to testing? Sell the defect.</li> <li>▪ <b>Debug:</b> What does development need to make it easier to debug? (Traces, dumps, logs, immediate access, and so on.)</li> <li>▪ <b>Evidence:</b> What documentation will prove the existence of the error?</li> </ul>	



## Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes

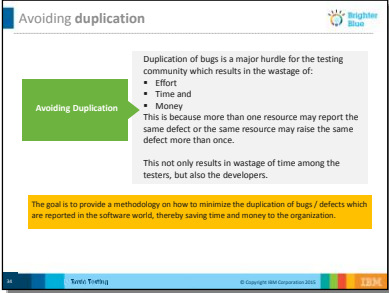
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 30</p> 	

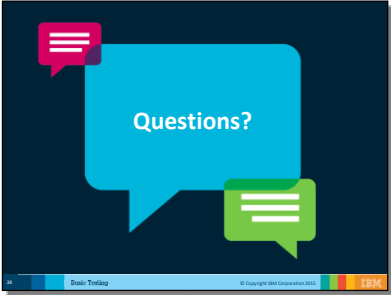
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 31</p> <div data-bbox="447 406 961 787"> <p>Use checklist before entering a defect (continued) </p> <ul style="list-style-type: none"> <li>• Have you selected the most appropriate severity of the defect based on the defect complexity?</li> <li>• Have you entered the description for: <ul style="list-style-type: none"> <li>■ Expected behavior</li> <li>■ Observed behavior</li> </ul> </li> <li>• Have you entered the description for steps to reproduce to contain detailed reproductive steps so that reviewers or developers will not request for more information?</li> <li>• What are the builds used for testing?</li> <li>• What about connection information like database, server name, and so on?</li> <li>• Have you attached screenshot(s), log file(s), trace file(s), sample report(s), Sample application(s) for defect?</li> <li>• Have you verified that there are no typo error within defect entry?</li> </ul> <p></p> </div>	

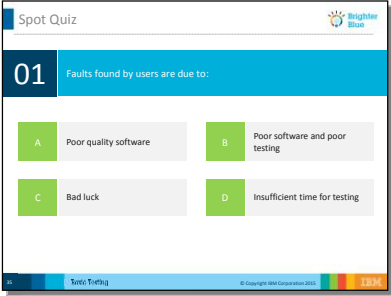
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 32</p>  <p><b>Avoiding duplication</b></p> <p>Duplication of bugs is a major hurdle for the testing community which results in the wastage of:</p> <ul style="list-style-type: none"> <li>• Effort</li> <li>• Time and</li> <li>• Money</li> </ul> <p>This is because more than one resource may report the same defect or the same resource may raise the same defect more than once.</p> <p>This not only results in wastage of time among the testers, but also the developers.</p> <p>The goal is to provide a methodology on how to minimize the duplication of bugs / defects which are reported in the software world, thereby saving time and money to the organization.</p> <p>© Copyright IBM Corporation 2015</p>	

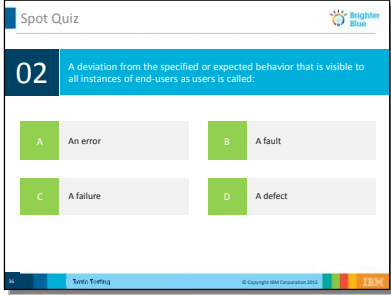
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 33</p>  <p>Slide 34</p>	

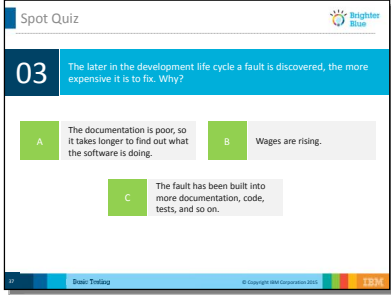
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
 <p>The slide content shows a 'Spot Quiz' titled 'Faults found by users are due to:'. It lists four options: A. Poor quality software, B. Poor software and poor testing, C. Bad luck, and D. Insufficient time for testing. The slide also includes the IBM logo and copyright information at the bottom.</p>	


# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 35</p>  <p>The image shows a 'Spot Quiz' slide from a presentation. It features a blue header with the 'Brighter Blue' logo. The main content area has a blue background with white text. It asks for a definition of a deviation from specified or expected behavior visible to all instances of end-users. There are four options: A. An error, B. A fault, C. A failure, and D. A defect. The slide is numbered 02 in the top left corner. At the bottom, there is a footer with 'Testo Training' and a copyright notice for IBM Corporation 2015.</p>	


# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 36</p>  <p>The slide is titled 'Spot Quiz' and features the IBM logo. It contains a question: '03 The later in the development life cycle a fault is discovered, the more expensive it is to fix. Why?'. There are three options: A 'The documentation is poor, so it takes longer to find out what the software is doing.', B 'Wages are rising.', and C 'The fault has been built into more documentation, code, tests, and so on.' The slide also has a footer with 'Basic Testing', '© Copyright IBM Corporation 2015', and the IBM logo.</p>	

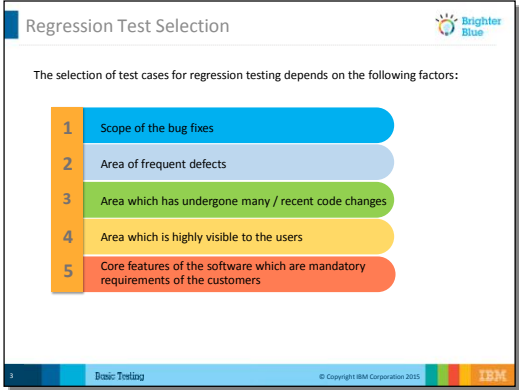
## Module 02: Regression Testing

Slide Content	Use this space for your own notes
<p>Slide 37</p>  <p>The objectives of this module are to:</p> <ul style="list-style-type: none"> <li>▪ Define and describe the importance and pre-requisites of Test Case writing</li> <li>▪ Describe the characteristics of a good Test Case and how to write it</li> <li>▪ List the attributes of Test Case and the documents required to write a Test case</li> </ul>	

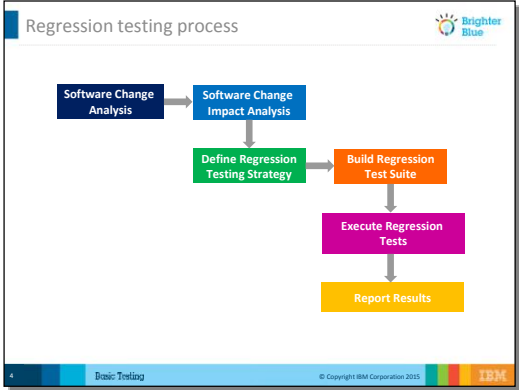
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 38</p> <div data-bbox="388 407 905 797"> <p>Software regression testing</p>  <ul style="list-style-type: none"> <li>• It verifies that no unwanted changes were introduced to one part of the system as a result of making changes to another part of the system.</li> <li>• It is done to make sure that new code changes do not have side effects on the existing functionalities.</li> <li>• It ensures that the old code still works after the new code changes are done.</li> <li>• It is nothing but full or partial selection of already executed test cases which are re-executed to ensure existing functionalities are working fine.</li> </ul> <p>2 Basic Testing © Copyright IBM Corporation 2015 IBM</p> </div>	
Slide 39	

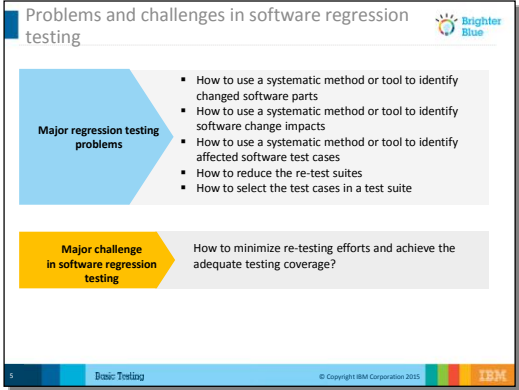
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
 <p>Regression Test Selection</p> <p>The selection of test cases for regression testing depends on the following factors:</p> <ol style="list-style-type: none"> <li>1. Scope of the bug fixes</li> <li>2. Area of frequent defects</li> <li>3. Area which has undergone many / recent code changes</li> <li>4. Area which is highly visible to the users</li> <li>5. Core features of the software which are mandatory requirements of the customers</li> </ol> <p>Basic Testing   © Copyright IBM Corporation 2015   IBM</p>	
Slide 40	

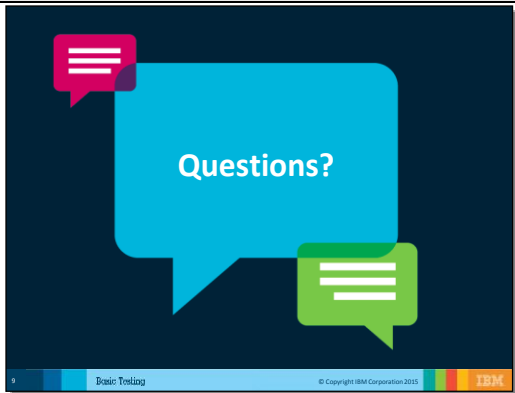
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
 <p>The flowchart illustrates the regression testing process. It begins with 'Software Change Analysis' (dark blue box), which leads to 'Software Change Impact Analysis' (blue box). From there, the process moves to 'Define Regression Testing Strategy' (green box), then to 'Build Regression Test Suite' (orange box). This is followed by 'Execute Regression Tests' (pink box) and finally 'Report Results' (yellow box). The flow is indicated by arrows connecting the boxes in sequence. The slide is titled 'Regression testing process' and includes the IBM logo and copyright information at the bottom.</p>	
Slide 41	

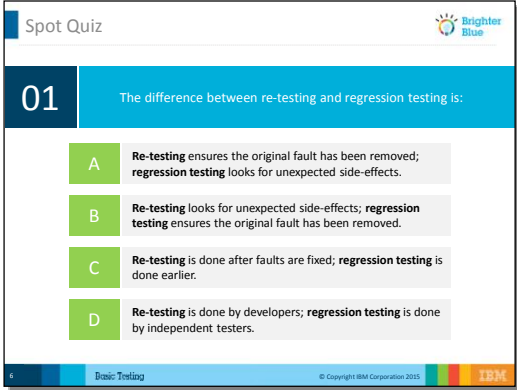
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
	
Slide 42	

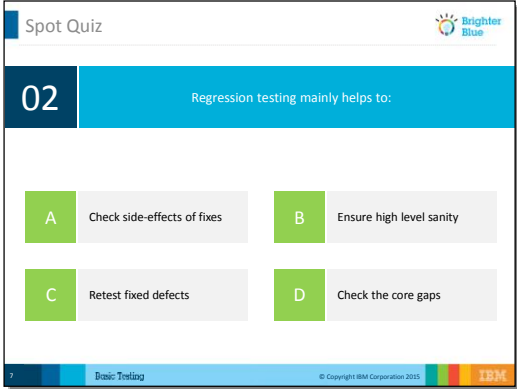
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<div data-bbox="392 345 903 735">  </div> <div data-bbox="149 1125 264 1162">Slide 43</div>	

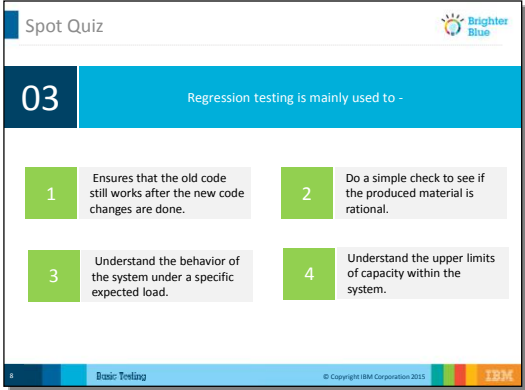
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
 <p>Spot Quiz</p> <p>01 The difference between re-testing and regression testing is:</p> <ul style="list-style-type: none"> <li>A Re-testing ensures the original fault has been removed; regression testing looks for unexpected side-effects.</li> <li>B Re-testing looks for unexpected side-effects; regression testing ensures the original fault has been removed.</li> <li>C Re-testing is done after faults are fixed; regression testing is done earlier.</li> <li>D Re-testing is done by developers; regression testing is done by independent testers.</li> </ul> <p>Basic Testing © Copyright IBM Corporation 2015 IBM</p>	
Slide 44	


# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
 <p>The image shows a slide titled 'Spot Quiz' with a 'Brighter Blue' logo in the top right corner. The slide number '02' is in a dark blue box on the left. The main text asks 'Regression testing mainly helps to:'. Below this are four options, each in a green box with a letter and a grey box with text: A Check side-effects of fixes, B Ensure high level sanity, C Retest fixed defects, and D Check the core gaps. The bottom of the slide has a footer with 'Basic Testing', '© Copyright IBM Corporation 2015', and the 'IBM' logo.</p>	
Slide 45	

# Core Testing > Basic Testing > Day 9

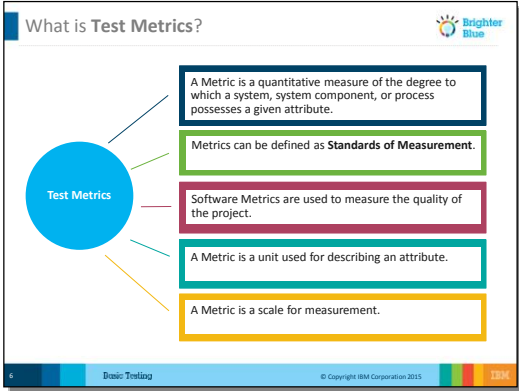
Slide Content	Use this space for your own notes
 <p>The slide content is a quiz titled "Spot Quiz" with the question "Regression testing is mainly used to -". It lists four options:</p> <ol style="list-style-type: none"> <li>1 Ensures that the old code still works after the new code changes are done.</li> <li>2 Do a simple check to see if the produced material is rational.</li> <li>3 Understand the behavior of the system under a specific expected load.</li> <li>4 Understand the upper limits of capacity within the system.</li> </ol> <p>The slide footer includes "Basic Testing", "© Copyright IBM Corporation 2015", and the IBM logo.</p>	

## Module 03: Test Metrics, Test Reports, and Sign-off

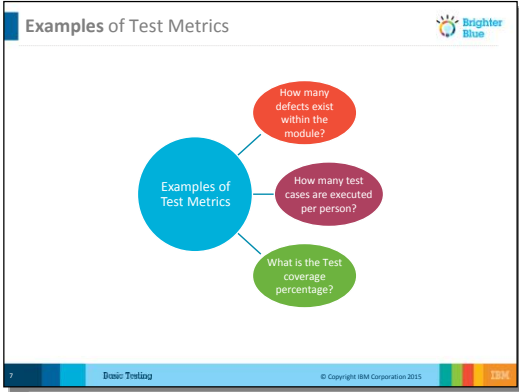
Slide Content	Use this space for your own notes
<p>Slide 46</p>  <p>At the end of this module, you should be able to:</p> <ul style="list-style-type: none"> <li>▪ Define Test Metrics</li> <li>▪ Recall the difference between Measurements and Metrics</li> <li>▪ Identify the significance of Software Testing Metrics</li> <li>▪ List the benefits of Metrics</li> <li>▪ Explain The Metrics Life Cycle</li> <li>▪ Recognize the types of Test Reports, such as Test Execution And Test Summary Report</li> <li>▪ Describe Sign-offs</li> </ul>	

Slide Content	Use this space for your own notes

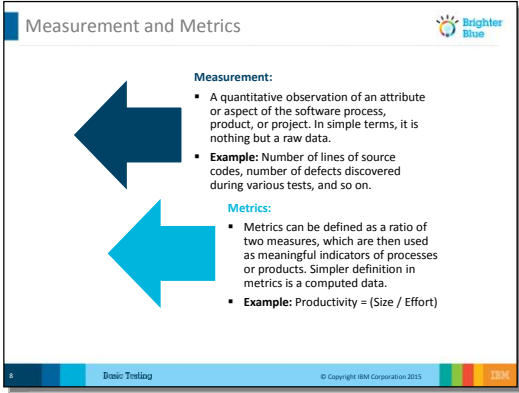
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 47</p>  <p>The slide content includes a central blue circle labeled "Test Metrics" with five lines radiating from it to five colored boxes, each containing a definition of a metric:</p> <ul style="list-style-type: none"> <li><b>Blue box:</b> A Metric is a quantitative measure of the degree to which a system, system component, or process possesses a given attribute.</li> <li><b>Green box:</b> Metrics can be defined as <b>Standards of Measurement</b>.</li> <li><b>Pink box:</b> Software Metrics are used to measure the quality of the project.</li> <li><b>Teal box:</b> A Metric is a unit used for describing an attribute.</li> <li><b>Orange box:</b> A Metric is a scale for measurement.</li> </ul> <p>At the bottom of the slide, there is a footer bar with the text "Basic Testing" on the left, "© Copyright IBM Corporation 2015" in the center, and a small "13/34" indicator on the right.</p>	

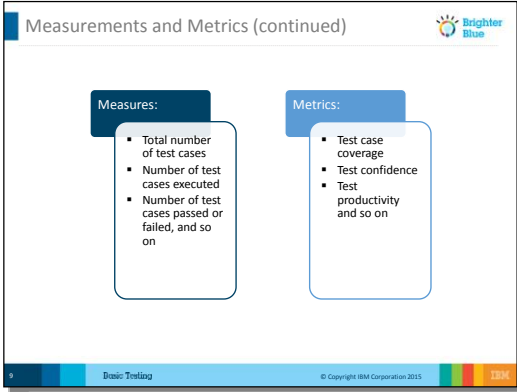
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 48</p>  <p>The diagram, titled 'Examples of Test Metrics', features a central blue circle with the text 'Examples of Test Metrics'. Three lines radiate from this central circle to three surrounding ovals: a red oval at the top containing 'How many defects exist within the module?', a purple oval on the right containing 'How many test cases are executed per person?', and a green oval at the bottom containing 'What is the Test coverage percentage?'. The diagram is presented within a slide frame that includes a 'Brighter Blue' logo in the top right corner and a footer with the text 'Basic Testing', '© Copyright IBM Corporation 2015', and a small '13:34' timer.</p>	

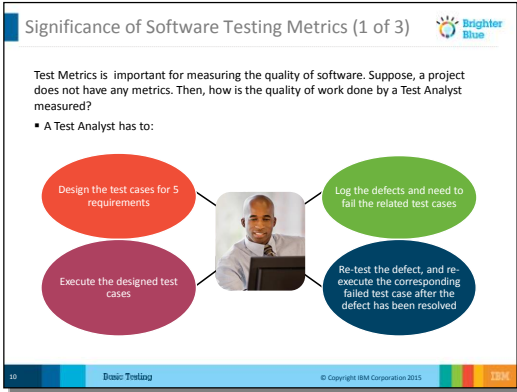
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 49</p>  <p><b>Measurement and Metrics</b></p> <p><b>Measurement:</b></p> <ul style="list-style-type: none"> <li>A quantitative observation of an attribute or aspect of the software process, product, or project. In simple terms, it is nothing but a raw data.</li> <li><b>Example:</b> Number of lines of source codes, number of defects discovered during various tests, and so on.</li> </ul> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>Metrics can be defined as a ratio of two measures, which are then used as meaningful indicators of processes or products. Simpler definition in metrics is a computed data.</li> <li><b>Example:</b> Productivity = (Size / Effort)</li> </ul> <p>Basic Testing © Copyright IBM Corporation 2015 13/34</p>	

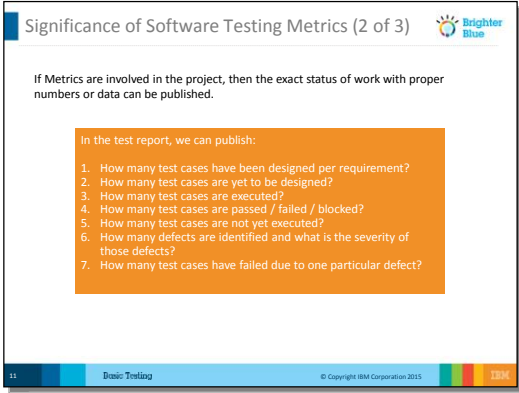
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 50</p>  <p>Measurements and Metrics (continued)</p> <p><b>Measures:</b></p> <ul style="list-style-type: none"> <li>Total number of test cases</li> <li>Number of test cases executed</li> <li>Number of test cases passed or failed, and so on</li> </ul> <p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>Test case coverage</li> <li>Test confidence</li> <li>Test productivity and so on</li> </ul> <p>Basic Testing © Copyright IBM Corporation 2015 13/34</p>	


# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 51</p>  <p>In the above scenario, if metrics are not followed, then the work completed by the test analyst will be subjective. For example, the test report will not have the proper information to know the status of his work or project.</p>	

# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 52</p>  <p>Based on the project needs, we can have more metrics than the above mentioned list, to know the status of the project in detail.</p>	

# Core Testing > Basic Testing > Day 9


Slide Content	Use this space for your own notes
<p>Slide 53</p> <div data-bbox="405 423 919 812"> <p>Significance of Software Testing Metrics (3 of 3) </p> <p>Based on the metrics (on the previous slide), test lead or manager will get the understanding of the below mentioned key points:</p> <ul style="list-style-type: none"> <li>▶ Percentage (%) of work completed</li> <li>▶ Percentage (%) of work yet to be completed</li> <li>▶ Time to complete the remaining work</li> <li>▶ Whether the project is going as per the schedule or lagging, and so on</li> </ul> <p>22 Basic Testing © Copyright IBM Corporation 2015 13:34</p> </div> <p>Based on the metrics, if the project is not going to complete as per schedule, then the manager will raise the alarm to the client and other stake holders by providing the reasons for lagging to avoid the last minute surprises.</p>	

# Core Testing > Basic Testing > Day 9


## Slide Content

## Use this space for your own notes

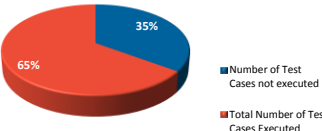
Slide 54

Example of Measurements 

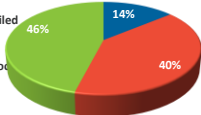
S. Number	Testing	Data retrieved during test case development and execution
1	Number of Requirements	5
2	Avg. Number of Test cases written per Requirement	20
3	Total Number of Test cases written for all Requirements	100
4	Total Number of Test cases Executed	65
5	Number of Test cases Passed	30
6	Number of Test cases Failed	26
7	Number of Test cases Blocked	9
8	Number of Test cases not executed	35
9	Total Number of Defects Identified	30
10	Critical Defects count	6
11	High Defects Count	10
12	Medium Defects Count	6
13	Low Defects Count	8

23 Basic Testing © Copyright IBM Corporation 2015 


# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 55</p> <div data-bbox="403 422 919 812"> <p><b>Metrics Examples</b></p> <p><b>Percentage (%) Test Cases Executed:</b> This metric is used to obtain the execution status of the test cases in terms of <b>Percentage (%)</b>.</p> <p><b>Percentage (%) Test cases Executed</b> = (Number of Test cases executed / Total Number of Test cases written) * 100.</p> <p>So, from the above data,</p> <p><b>Percentage (%) Test cases Executed</b> = (65 / 100) * 100 = 65%</p> <p><b>Test execution completion percentage (%)</b></p>  <p>■ Number of Test Cases not executed ■ Total Number of Test Cases Executed</p> <p>24 Basic Testing © Copyright IBM Corporation 2015 13/34</p> </div>	

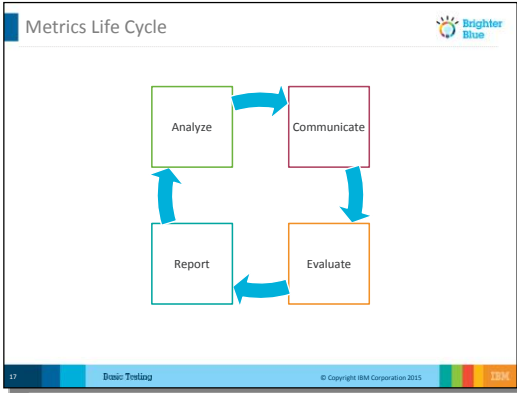
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 56</p> <div data-bbox="403 422 919 812"> <p>Metrics Examples (continued)</p> <p>Percentage (%) Test cases Passed / Failed / Blocked</p> <p>Formula: Percentage (%) Test cases Passed / Failed / Blocked = (Number of Test cases Passed / Failed / Blocked / Total Number of Test cases Executed) * 100.</p> <p>So, from the above data,</p> <p>Percentage (%) Test cases Passed</p> <p>= (30 / 65) * 100 = 46%</p> <p>Percentage (%) Test cases Failed</p> <p>= (26 / 65) * 100 = 40%</p> <p>Percentage (%) Test cases Blocked</p> <p>= (9 / 65) * 100 = 14%</p> <p>Test execution status</p>  <ul style="list-style-type: none"> <li>Number of Test Cases Blocked</li> <li>Number of Test Cases Failed</li> <li>Number of Test Cases Passed</li> </ul> <p>IBM Testing © Copyright IBM Corporation 2015</p> </div>	

# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 57</p> 	

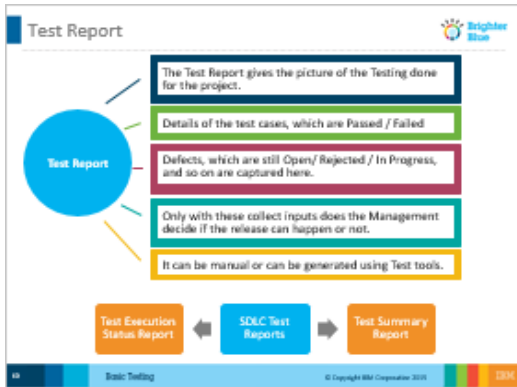
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 58</p>  <p>Analyze:</p> <ul style="list-style-type: none"> <li>Identify the Test Metrics</li> <li>Define the identified Metrics</li> </ul> <p>Communicate:</p> <ul style="list-style-type: none"> <li>Explain the need of metrics to stakeholder and testing team.</li> <li>Educate the testing team about the data points that need to be captured for processing the metric.</li> </ul> <p>Evaluate:</p> <ul style="list-style-type: none"> <li>Capture and verify data.</li> <li>Calculating the metric(s) value using the data captured.</li> </ul>	


## Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Generate:</p> <ul style="list-style-type: none"><li>▪ Develop the report with effective conclusion.</li><li>▪ Distribute report to the stakeholder and respective representative.</li><li>▪ Take feedback from stakeholder.</li></ul>	

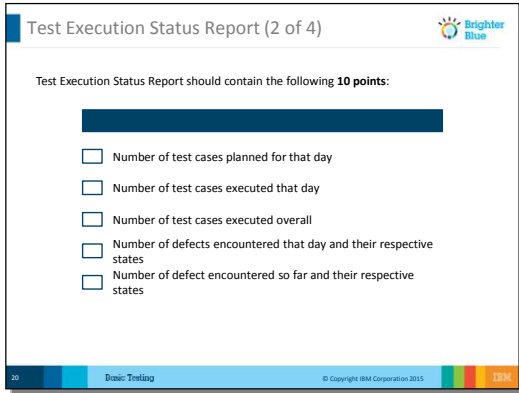
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 59</p>  <p>The diagram illustrates the components and flow of a Test Report. A central blue circle labeled 'Test Report' is connected to five text boxes: 'The Test Report gives the picture of the Testing done for the project.', 'Details of the test cases, which are Passed / Failed', 'Defects, which are still Open/ Rejected / In Progress, and so on are captured here.', 'Only with these collect inputs does the Management decide if the release can happen or not.', and 'It can be manual or can be generated using Test tools.'. Below this, a flow shows 'Test Execution Status Report' and 'Test Summary Report' both feeding into 'SDLC Test Reports'.</p> <p><b>Test reports used in the SDLC:</b></p> <ul style="list-style-type: none"> <li>▪ Test Execution Status Report</li> <li>▪ Test Summary Report</li> </ul>	

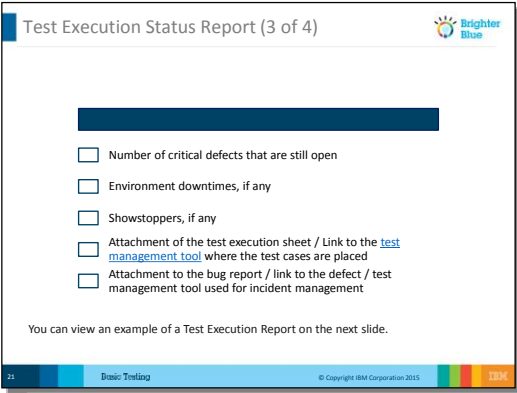
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 60</p> <div data-bbox="403 423 919 813"> <p>Test Execution Status Report (1 of 4)</p>  <div> <p>Test Execution Status Report</p> <ul style="list-style-type: none"> <li>This is a communication sent out to establish transparency to the QA team's activities of the day during the test cycle.</li> <li>This includes both defect information and test case run information.</li> <li>It is sent to Development, Environment support, Business analyst, and the Project teams.</li> </ul> </div> <p>29 Basic Testing © Copyright IBM Corporation 2015 13:34</p> </div>	


# Core Testing > Basic Testing > Day 9

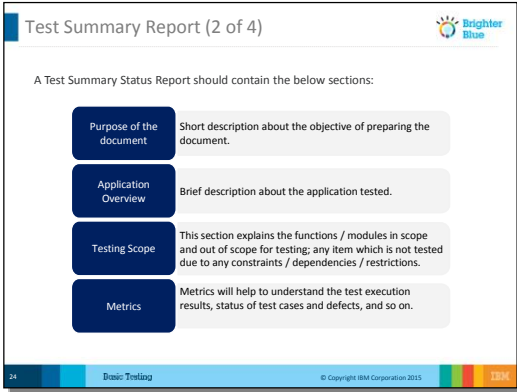
Slide Content	Use this space for your own notes
<p>Slide 61</p> <div data-bbox="403 422 919 812">  <p>Test Execution Status Report (2 of 4)</p> <p>Test Execution Status Report should contain the following 10 points:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Number of test cases planned for that day</li> <li><input type="checkbox"/> Number of test cases executed that day</li> <li><input type="checkbox"/> Number of test cases executed overall</li> <li><input type="checkbox"/> Number of defects encountered that day and their respective states</li> <li><input type="checkbox"/> Number of defect encountered so far and their respective states</li> </ul> <p>20 Basic Testing © Copyright IBM Corporation 2015 10/24</p> </div>	

# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 62</p> 	

# Core Testing > Basic Testing > Day 9

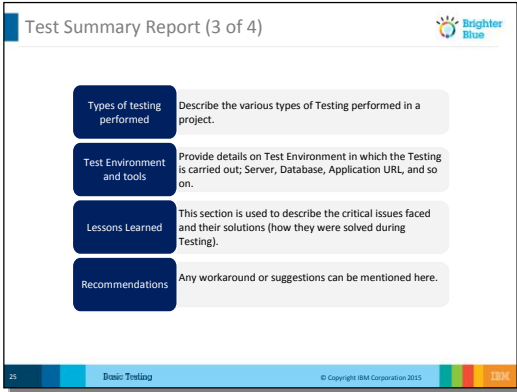
Slide Content	Use this space for your own notes
<p>Slide 63</p> <div data-bbox="386 418 936 837"> <p>Test Summary Report (1 of 4)</p>  <div> <p>Test Summary Report</p> <ul style="list-style-type: none"> <li>Test Summary Report is an important deliverable which is prepared at the end of a Testing project, or rather after Testing is completed.</li> <li>The prime objective of this document is to explain various details and activities about the Testing performed for the project to the respective stakeholders like senior management, client, and so on.</li> <li>As part of Test execution report, daily testing results are shared with involved stakeholders every day. But Test Summary Report provides a consolidated report on the Testing performed so far for the project.</li> </ul> </div> <p>69 Basic Testing © Copyright IBM Corporation 2018 IBM</p> </div>	

Slide Content	Use this space for your own notes
<p>Slide 64</p>  <p>A Test Summary Status Report should contain the below sections:</p> <ul style="list-style-type: none"> <li><b>Purpose of the document:</b> Short description about the objective of preparing the document.</li> <li><b>Application Overview:</b> Brief description about the application tested.</li> <li><b>Testing Scope:</b> This section explains the functions / modules in scope and out of scope for testing; any item which is not tested due to any constraints / dependencies / restrictions.</li> <li><b>Metrics:</b> Metrics will help to understand the test execution results, status of test cases and defects, and so on.</li> </ul> <p>24 Basic Testing © Copyright IBM Corporation 2015 10/24</p> <ul style="list-style-type: none"> <li>▪ <b>Purpose of the document:</b> Short description about the objective of preparing the document</li> <li>▪ <b>Application Overview:</b> Brief description about the application tested.</li> <li>▪ <b>Testing Scope:</b> This section explains about the functions / modules in scope and out of scope for testing; any items which are not tested due to any constraints / dependencies/ restrictions.</li> <li>▪ <b>Metrics:</b> Metrics will help to understand the test execution results, status of test cases and defects, and so on. Required Metrics can be added as necessary. For example: Defect Summary-Severity wise; Defect</li> </ul>	

## Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Distribution-Function/Module wise; Defect Ageing and so on, Charts / Graphs can be attached for better visual representation.</p>	

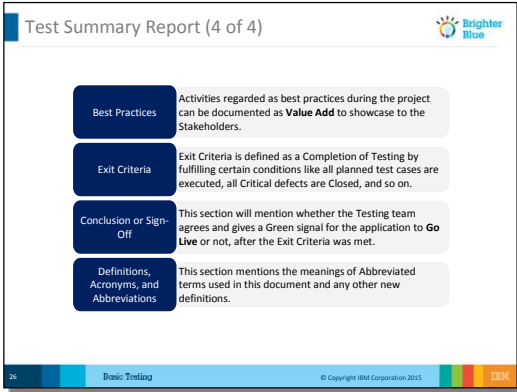
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 65</p>  <ul style="list-style-type: none"> <li>▪ <b>Types of testing performed:</b> Describe the various types of Testing performed for the Project. This will make sure the application is being tested properly through testing types agreed as per Test Strategy.</li> <li>▪ <b>Test Environment and tools:</b> Provide details on Test Environment in which the Testing is carried out; Server, Database, Application URL and so on. If any Tools were used like Quality Center (now HP ALM) for logging defects.</li> <li>▪ <b>Lessons Learned:</b> This section is used to describe the critical issues faced and their solutions (how they were solved during the Testing). Lessons learned will help to make proactive decisions during the next Testing</li> </ul>	

## Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>engagement, by avoiding these mistakes or finding a suitable workaround.</p> <ul style="list-style-type: none"><li>▪ <b>Recommendations:</b> Any workaround or suggestions can be mentioned here.</li></ul>	

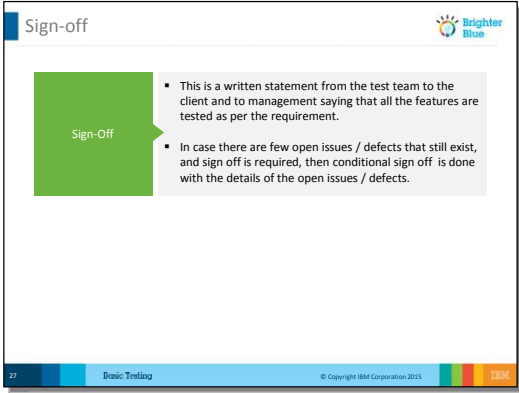
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 66</p>  <p>The slide titled 'Test Summary Report (4 of 4)' contains four key sections:</p> <ul style="list-style-type: none"> <li><b>Best Practices:</b> Activities regarded as best practices during the project can be documented as <b>Value Add</b> to showcase to the Stakeholders.</li> <li><b>Exit Criteria:</b> Exit Criteria is defined as a Completion of Testing by fulfilling certain conditions like all planned test cases are executed, all Critical defects are Closed, and so on.</li> <li><b>Conclusion or Sign-Off:</b> This section will mention whether the Testing team agrees and gives a Green signal for the application to <b>Go Live</b> or not, after the Exit Criteria was met.</li> <li><b>Definitions, Acronyms, and Abbreviations:</b> This section mentions the meanings of Abbreviated terms used in this document and any other new definitions.</li> </ul> <p>At the bottom of the slide, it says 'Basic Testing' and '© Copyright IBM Corporation 2015'.</p> <ul style="list-style-type: none"> <li>▪ <b>Best Practices:</b> There will be lot of activities done by the Testing team during the project. Some of them could have saved time, some proved to be a good and efficient way to work, and so on. These can be documented as a <b>Value Add</b> to showcase to the Stakeholders.</li> <li>• <b>Exit Criteria:</b> Exit Criteria is defined as a Completion of Testing by fulfilling certain conditions like:             <ol style="list-style-type: none"> <li>a. All planned test cases are executed;</li> <li>b. All Critical defects are Closed and so on.</li> </ol> </li> <li>▪ <b>Conclusion / Sign Off:</b> This section will mention whether the Testing team agrees and gives a Green signal for the application to <b>Go Live</b> or not, after</li> </ul>	

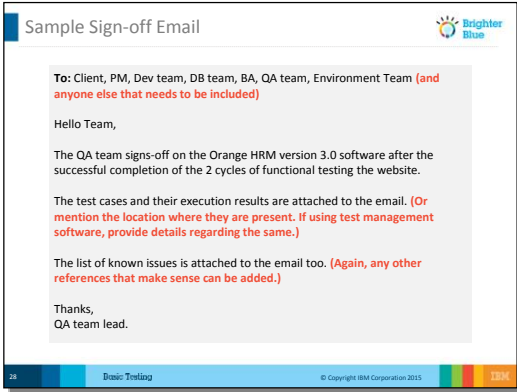
## Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>the Exit Criteria was met. If the application does not meet the Exit Criteria, then it can be mentioned as the application is not suggested to <b>Go Live</b>. It will be left with the decision of Senior Management and Client and other Stakeholders involved to take the call on whether the application can <b>Go Live</b> or not.</p> <ul style="list-style-type: none"> <li>▪ <b>Definitions, Acronyms, and Abbreviations:</b> This section mentions the meanings of Abbreviated terms used in this document and any other new definitions.</li> </ul>	


# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 67</p>  <p>As we have to notify all the stakeholders that testing has begun, it is also the QA team's duty to let everyone know that testing has been complete and share the results. So, typically an email is sent from the QA team (usually the team lead / QA manager) giving an indication that QA team has signed off on the product attaching the test results and the list of open or known issues.</p>	

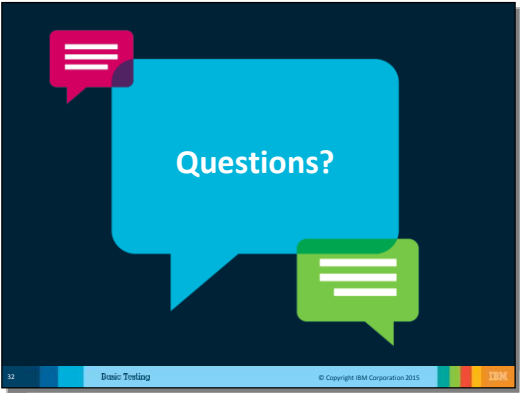
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 68</p> <div data-bbox="405 423 919 812">  <p><b>Sample Sign-off Email</b></p> <p><b>To:</b> Client, PM, Dev team, DB team, BA, QA team, Environment Team <i>(and anyone else that needs to be included)</i></p> <p>Hello Team,</p> <p>The QA team signs-off on the Orange HRM version 3.0 software after the successful completion of the 2 cycles of functional testing the website.</p> <p>The test cases and their execution results are attached to the email. <i>(Or mention the location where they are present. If using test management software, provide details regarding the same.)</i></p> <p>The list of known issues is attached to the email too. <i>(Again, any other references that make sense can be added.)</i></p> <p>Thanks, QA team lead.</p> <p>28 Basic Testing © Copyright IBM Corporation 2015 10/24</p> </div>	

# Core Testing > Basic Testing > Day 9

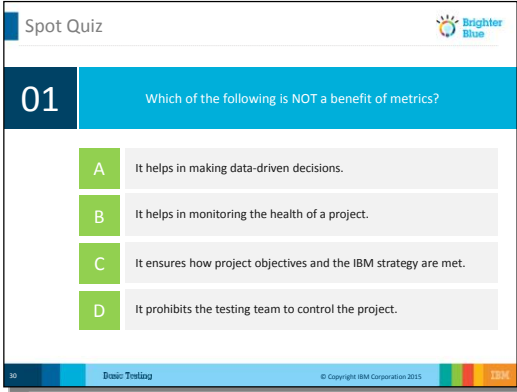
Slide Content	Use this space for your own notes
<p>Slide 69</p>  <ul style="list-style-type: none"> <li>▪ Create your own sample sign-off email based on the example found in the previous slide.</li> <li>▪ Make sure you include all the relevant details as what was discussed.</li> </ul>	

# Core Testing > Basic Testing > Day 9


Slide Content	Use this space for your own notes
<p>Slide 70</p> 	

Slide Content	Use this space for your own notes

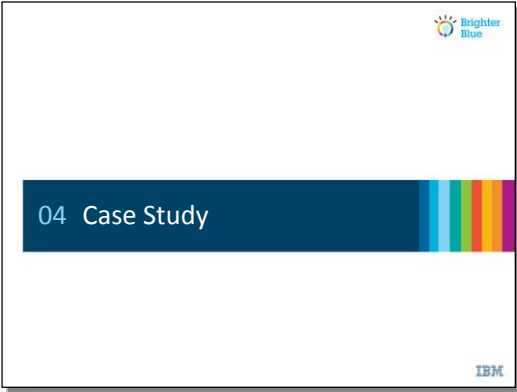
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 71</p>  <p>The image shows a 'Spot Quiz' slide from a presentation. The slide has a blue header with the text 'Spot Quiz' and the 'Brighter Blue' logo. Below the header, there is a blue box with the number '01' and the question 'Which of the following is NOT a benefit of metrics?'. There are four options listed in green boxes: A. It helps in making data-driven decisions. B. It helps in monitoring the health of a project. C. It ensures how project objectives and the IBM strategy are met. D. It prohibits the testing team to control the project. At the bottom of the slide, there is a footer with the text 'Basic Testing' and '© Copyright IBM Corporation 2015'.</p>	

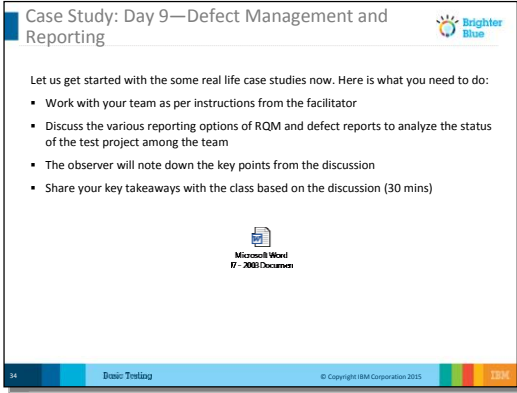
# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 72</p>  <p>The image shows a 'Spot Quiz' slide from a presentation. The slide has a blue header with the 'Brighter Blue' logo. The main content area has a blue background with a white box containing the question: 'Which of the following is included in a test summary report?'. Below the question are four options, each in a green box: A. Names of the Testing Team, B. Testing Scope, C. Weekly Showstoppers, and D. Team Assignments. The slide number '02' is in the top left corner. The footer shows 'Basic Testing' and '© Copyright IBM Corporation 2015'.</p>	

## Module 04: Case Study

Slide Content	Use this space for your own notes
<p>Slide 73</p> 	

# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 74</p> <div data-bbox="384 423 898 813">  <p>Case Study: Day 9—Defect Management and Reporting</p> <p>Let us get started with the some real life case studies now. Here is what you need to do:</p> <ul style="list-style-type: none"> <li>• Work with your team as per instructions from the facilitator</li> <li>• Discuss the various reporting options of RQM and defect reports to analyze the status of the test project among the team</li> <li>• The observer will note down the key points from the discussion</li> <li>• Share your key takeaways with the class based on the discussion (30 mins)</li> </ul> <p>Microsoft Word 17 - 2003 Document</p> <p>Basic Testing © Copyright IBM Corporation 2015</p> </div>	

# Core Testing > Basic Testing > Day 9

Slide Content	Use this space for your own notes
<p>Slide 75</p> 