



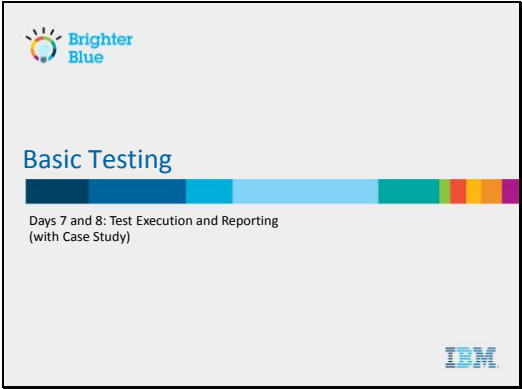
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Student Guide

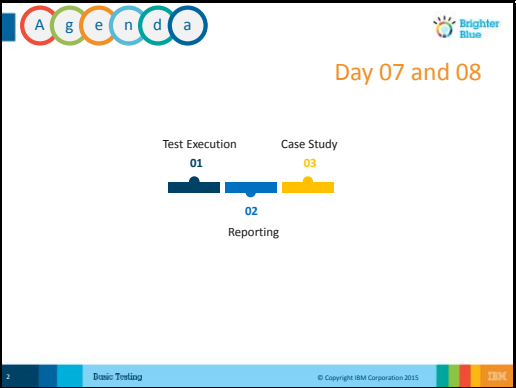
Contents

| | |
|----------------------------------|-----------|
| MODULE 01: TEST EXECUTION | 3 |
| MODULE 02: REPORTING | 18 |
| MODULE 03: CASE STUDY | 28 |

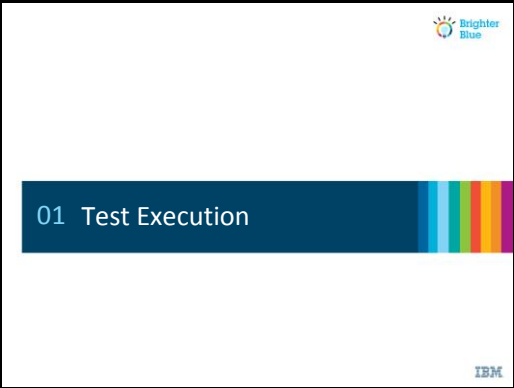
Module 01: Test Execution

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| <p>Slide 1</p>  | |
| <p>Slide 2</p> | |

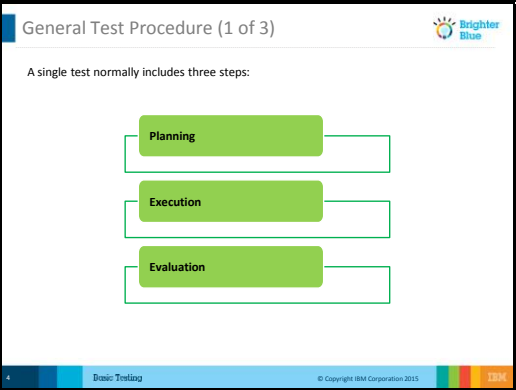
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|  <p>At the end of this module, you should be able to:</p> <ul style="list-style-type: none"> ▪ Recognize the features of test execution ▪ Explain the process of reporting ▪ List the process of case study | |
| Slide 3 | |

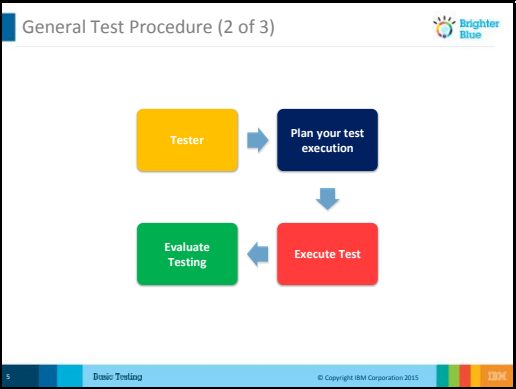
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|  <p>At the end of this module, you should be able to:</p> <ul style="list-style-type: none"> ▪ Understand the flow of general test procedures ▪ Plan and execute tests ▪ Set-up systems and software ▪ Execute test cases | | |
| Slide 4 | | |

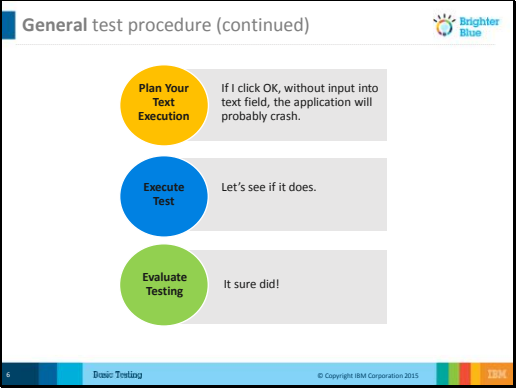
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|  <p>General Test Procedure (1 of 3)</p> <p>A single test normally includes three steps:</p> <ul style="list-style-type: none"> Planning Execution Evaluation <p>Slide 5</p> | |
| Slide 5 | |

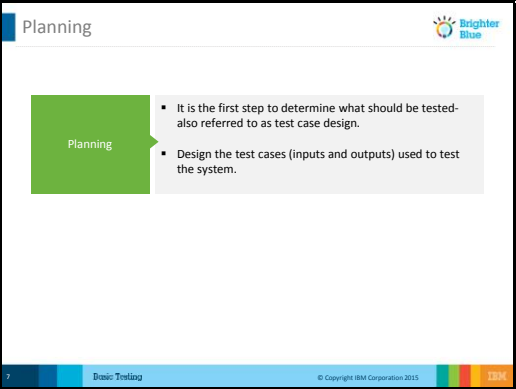
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|  <p>The slide titled "General Test Procedure (2 of 3)" shows a four-step process flow:</p> <pre> graph TD A[Tester] --> B[Plan your test execution] B --> C[Execute Test] C --> D[Evaluate Testing] </pre> <p>The flow starts with a yellow box labeled "Tester", followed by a blue box "Plan your test execution", then a red box "Execute Test", and finally a green box "Evaluate Testing". Arrows indicate the sequence from left to right and then down to the final step.</p> <p>At the bottom of the slide, there is a footer with the text "Brighter Blue" and "© Copyright IBM Corporation 2015".</p> | |
| Slide 6 | |

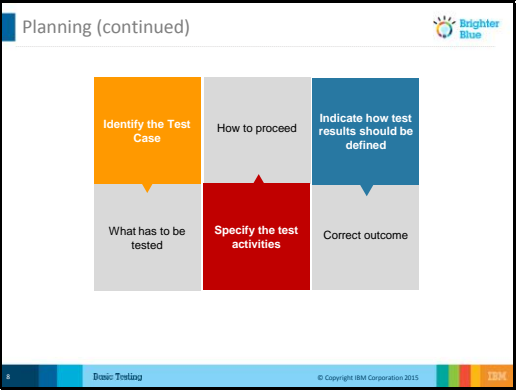
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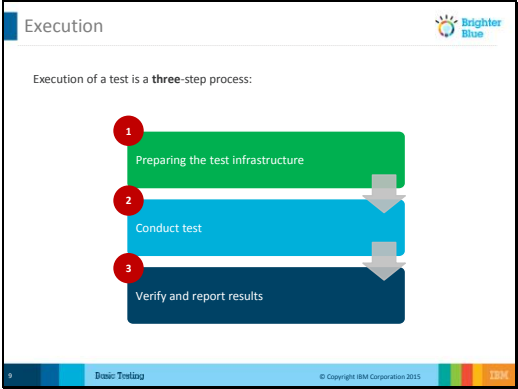
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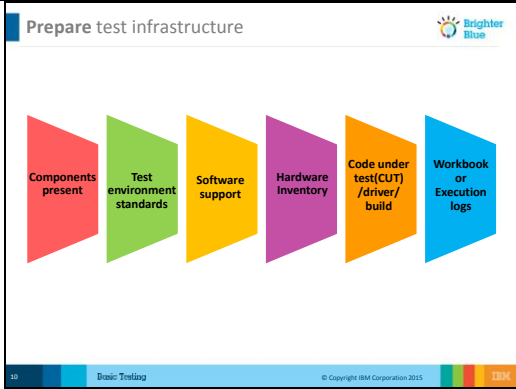
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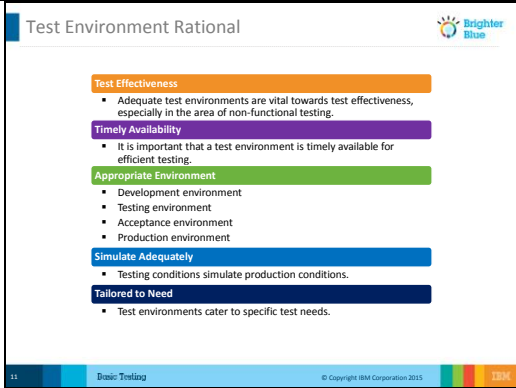
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|  <p>The diagram illustrates the execution of a test as a three-step process:</p> <ol style="list-style-type: none"> 1. Preparing the test infrastructure 2. Conduct test 3. Verify and report results <p>The slide also includes the title 'Execution', the Brighter Blue logo, and a footer with 'Oracle Testing' and '© Copyright IBM Corporation 2015'.</p> | |
| Slide 10 | |

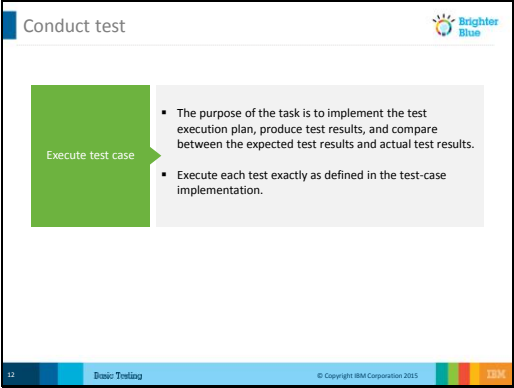
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| <div data-bbox="466 557 978 943">  <p>Prepare test infrastructure</p> <p>Components present</p> <p>Test environment standards</p> <p>Software support</p> <p>Hardware inventory</p> <p>Code under test(CUT) /driver/ build</p> <p>Workbook or Execution logs</p> <p>10 DevOps Tooling © Copyright IBM Corporation 2015</p> </div> <p>Components present</p> <ul style="list-style-type: none"> Prepare test infrastructure task ensures that all the components such as technical resources, human resources, configurations, data, and test design specification are in place for successful execution of the test <p>Test environment standards</p> <ul style="list-style-type: none"> The key to set up a test environment is to establish a set of standards that everyone in the project can adhere to. Software support Includes operating systems, middleware, system utilities, application, and patches and so on. Supporting software is stored on CD or available on a shared file system. | |

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| <ul style="list-style-type: none"> • All supporting software will need to be installed in the environment in the exact sequence required by the components. • Detailed installation steps will be needed as it is a part of the implementation of the test cases. • When installing multiple supporting software elements, the order of installation is critical to the proper functioning of the environment. <p>Hardware Inventory</p> <ul style="list-style-type: none"> • Properly setting up the test-execution environment requires to have access the inventory of hardware that is needed, along with any special instructions for configuring the hardware. • It is important to ensure that you execute the test case in the exact hardware configuration identified by the test cases. • Tester must confirm that the hardware meets all the requirements and specifications such as memory, disk space, processor speeds and so on <p>Code under test(CUT) /driver/ build</p> <ul style="list-style-type: none"> • Code under test, also referred as a Driver or a Build is the packaged new / updated code that is ready to be installed and tested. • Properly preparing the environment for test-case execution also requires that you have access to the CUT. • Code is stored in a well-known place with naming conventions that indicate the exact driver or build levels. • Detailed procedures need to be in place to enable you to install the code | |

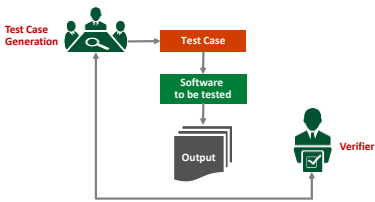
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| <p>accurately and efficiently.</p> <p>Workbook or Execution logs</p> <ul style="list-style-type: none"> • Workbook and execution logs are used to record the test-execution activity. • Workbooks are used when manually running tests, while execution logs are used to capture execution of tests run programmatically. • Store the log files in a well-known place with naming conventions to indicate the date captured and the build level being tested | |
| Slide 11 | |

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| <div data-bbox="466 557 978 943">  <p>Test Environment Rational</p> <ul style="list-style-type: none"> Test Effectiveness <ul style="list-style-type: none"> Adequate test environments are vital towards test effectiveness, especially in the area of non-functional testing. Timely Availability <ul style="list-style-type: none"> It is important that a test environment is timely available for efficient testing. Appropriate Environment <ul style="list-style-type: none"> Development environment Testing environment Acceptance environment Production environment Simulate Adequately <ul style="list-style-type: none"> Testing conditions simulate production conditions. Tailored to Need <ul style="list-style-type: none"> Test environments cater to specific test needs. </div> <ul style="list-style-type: none"> ▪ Adequate test environments are vital towards test effectiveness, especially in the area of non-functional testing, where environment factors have a large influence on the behaviors. ▪ Similarly, the timely availability of such a test environment is paramount towards the efficiency of the test activity. ▪ Testing is performed in the appropriate dedicated environment, according to the principles of: <ul style="list-style-type: none"> - Development environment - Testing environment - Acceptance environment - Production environment ▪ Testing environments simulate the production conditions adequately. | |

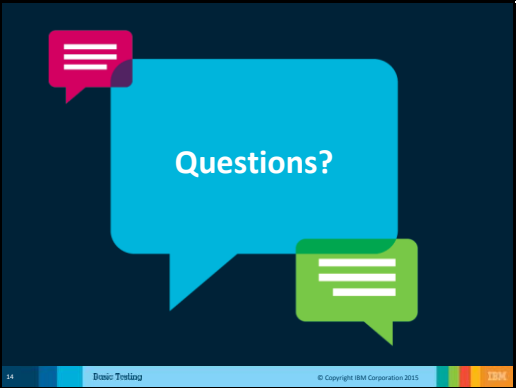
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| <ul style="list-style-type: none"> Testing environments are tailored to specific testing needs under control of the test manager. | |
| <p>Slide 12</p>  <p>The screenshot shows a presentation slide titled "Conduct test" with the Brighter Blue logo in the top right. A green box on the left is labeled "Execute test case". To its right, two bullet points are listed: "The purpose of the task is to implement the test execution plan, produce test results, and compare between the expected test results and actual test results." and "Execute each test exactly as defined in the test-case implementation." The slide footer includes the number "12", the text "Basic Testing", the copyright notice "© Copyright IBM Corporation 2015", and the IBM logo.</p> | |

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| <p>Slide 13</p> <div data-bbox="464 615 978 1003">  <p>Execute test case</p> <p>The process to execute a test case is shown below.</p> <pre> graph TD A[Test Case Generation] --> B[Test Case] B --> C[Software to be tested] C --> D[Output] D --> E[Verifier] E --> A </pre> </div> | |
| <p>Slide 14</p> | |


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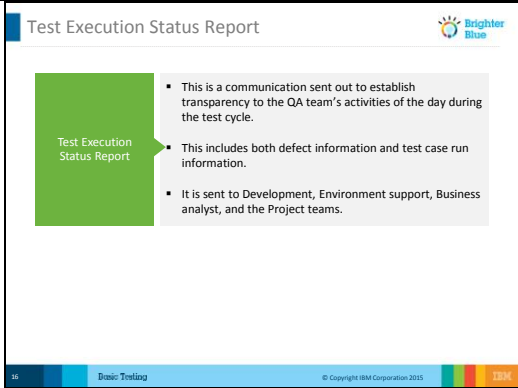
Module 02: Reporting

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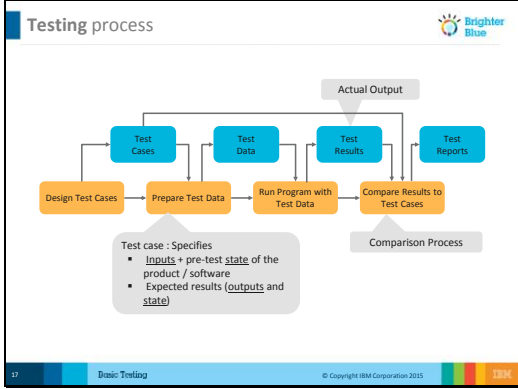
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| <p>Slide 15</p>  <p>At the end of this module, you should be able to:</p> <ul style="list-style-type: none"> ▪ Verify and analyze results ▪ Perform reporting | |
| Slide 16 | |

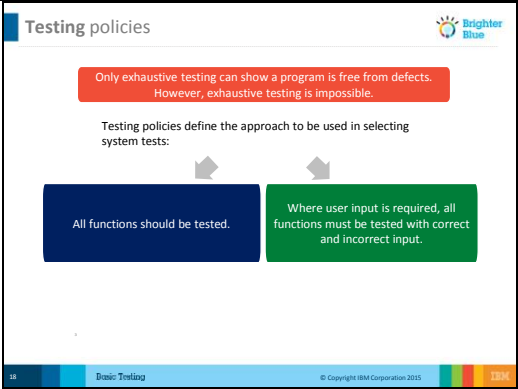
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|  <p>The slide content shows a presentation slide titled "Test Execution Status Report" with the Brighter Blue logo. A green box on the left contains the title. To the right, a list of bullet points explains the report's purpose and distribution.</p> <ul style="list-style-type: none"> This is a communication sent out to establish transparency to the QA team's activities of the day during the test cycle. This includes both defect information and test case run information. It is sent to Development, Environment support, Business analyst, and the Project teams. <p>The slide footer includes "Basic Testing" and "© Copyright IBM Corporation 2015".</p> | |
| Slide 17 | |

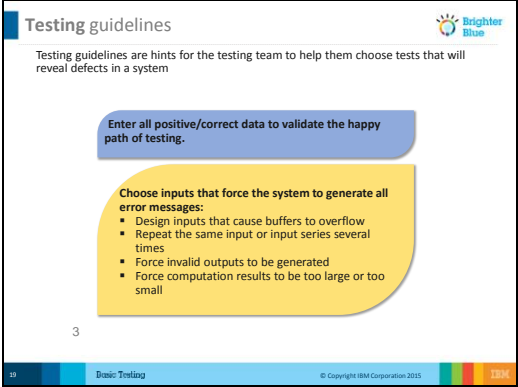
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|  <p>The diagram illustrates the testing process flow. It starts with 'Design Test Cases' (orange box) leading to 'Prepare Test Data' (orange box), which then leads to 'Run Program with Test Data' (orange box). From 'Run Program with Test Data', the flow goes to 'Compare Results to Test Cases' (orange box), which leads to 'Test Reports' (blue box). A feedback loop exists from 'Test Reports' back to 'Design Test Cases'. Above the main flow, 'Test Cases' (blue box) leads to 'Test Data' (blue box), which leads to 'Test Results' (blue box), which leads to 'Test Reports' (blue box). A callout box for 'Test case' specifies: 'Inputs + pre-test state of the product / software' and 'Expected results (outputs and state)'. A 'Comparison Process' box is shown below 'Compare Results to Test Cases'. 'Actual Output' is shown as a result of 'Run Program with Test Data'.</p> <p>© Copyright IBM Corporation 2015</p> | |
| Slide 18 | |

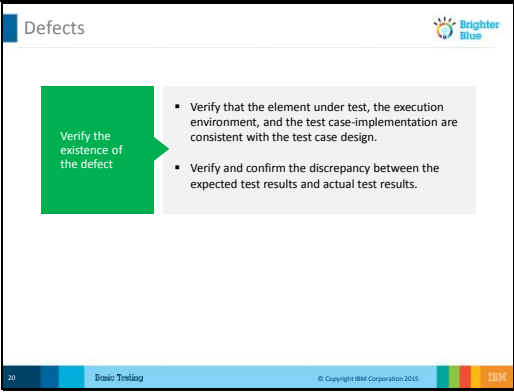
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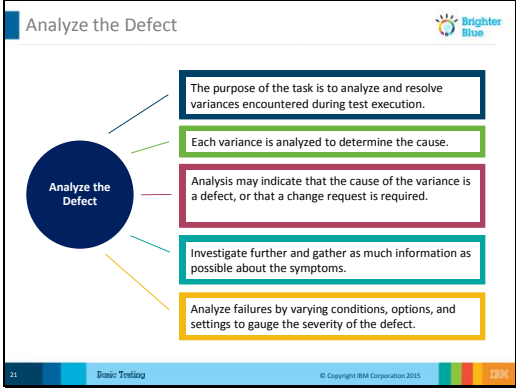
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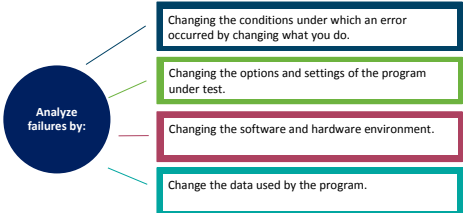
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| Slide 21 | |

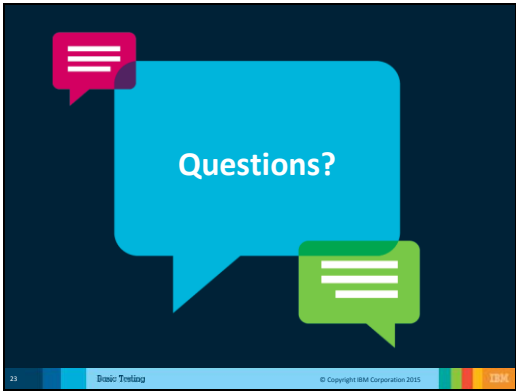
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| Slide 22 | |


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| <div data-bbox="428 557 940 943"> <p>Analyze Failures by varying Conditions, Options, and Settings</p>  <p>Analyze failures by:</p> <ul style="list-style-type: none"> Changing the conditions under which an error occurred by changing what you do. Changing the options and settings of the program under test. Changing the software and hardware environment. Change the data used by the program. </div> <p>Change the conditions under which an error occurred by changing what you do. As an example, if the problem seems related to entering data very quickly, try slowing your rate of input.</p> <p>Change the options and settings of the program under test. As an example, if the problem seems related to desktop screen-resolution settings, try varying the settings.</p> <p>Change the software and hardware environment. For example, if the defect seems related to a low-end hardware configuration, try using the lowest configuration specified in the requirements.</p> <p>Change the data used by the program. As an example, if the defect seems related to strings exceeding a certain number of characters in length, create a second set of test data to check the hypothesis</p> | |

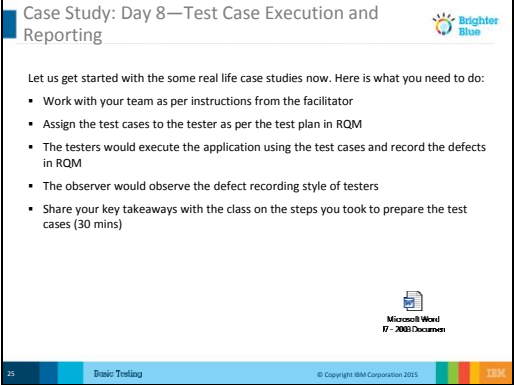
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| <p>Slide 23</p>  | |

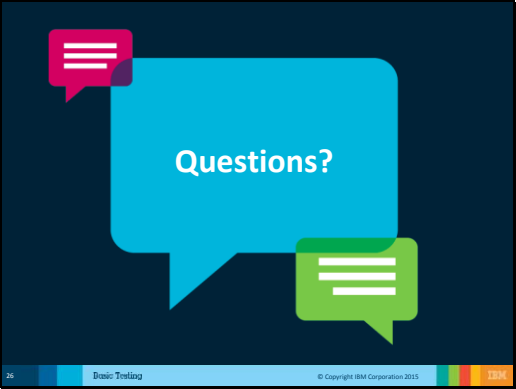
Module 03: Case Study

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| <p>Slide 24</p>  | |
| <p>Slide 25</p> | |

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