

Task Based Approach

Lesson 00

People matter, results count.



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Task Based Approach

Document History

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	0.1	NA				Review
May 2009	2.0	NA	Priya Rane			Material Revamp
Jun 2011	2.1	NA	Selvalaxmi			Material revamp
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Objectives

- Course Goals

- At the end of this program, participants gain an understanding of how to describe the Task based approach to software testing and to describe the "sequence of developing test cases" using the task based approach.



- Course Non Goals

- This course does not cover automation process of testing.

Pre-requisites

- The participants have attended the training on Software Testing Concepts, RVFD and Use cases.
- The participants have been understanding of Testing concepts, Requirement Validation and Functional Decomposition and Use cases.



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Intended Audience

- Test Engineers and Senior Test Engineers.



Day Wise Schedule

■ Day 1

- Lesson 1: Functional Validation
- Lesson 2: Reports Validation
- Lesson 3: Import Export Validation
- Lesson 4: Help Validation
- Lesson 5: Install Validation



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References

Book:

- Techniques for Functional Testing of Software and Systems - Boris Beizer
- The Software Test Engineer's Handbook - Graham Bath and Judy McKay



Next Step Courses

- Defect Reporting and Defect Life Cycle Management



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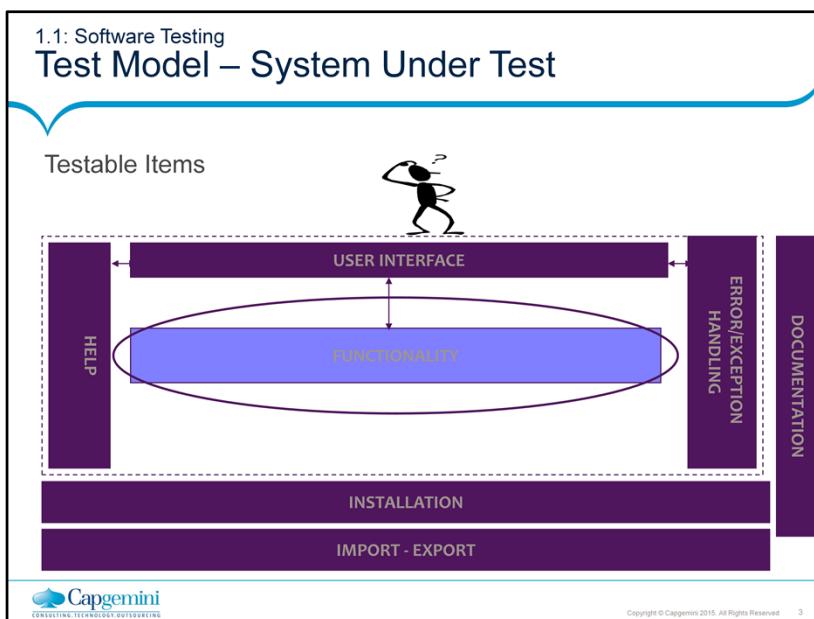
Task Based Approach

Lesson 01: Functional Validation

Lesson Objectives

- To understand the following topics:
 - Form Level and Inter-form level V&V
 - Field Level and Inter-Field Level validation V&V
 - UI Validation - Components & Containers
 - Error Messages validation





The system under test is considered for different validations during testing. They are as follows

- Functional Validation
- User Interface Validation
- Import Export Validation
- Help Validation
- Install Validation
- Reports Validation

1.2: Form Level and Inter-form level validation

Data Validation in Forms

- Forms represent Entities in the business domain.
- Entities have Relationships among themselves which define how the Forms are inter-related.
- Each Entity has Attributes which map to the Fields and their specifications.
- All applications implement the Business rules. These rules may not be consistent across projects.
- Data should comply with the Business rules and their Anomalies that define the enterprise.
- Changes made to the data should not result in a loss of data consistency thereby maintaining the Integrity.



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1.2: Form Level and Inter-form level validation

Data Validation in Forms (Cont.)

- Domain Constraints
- Real World Rules
- Inter Form Dependencies
- NULL checks
- Functionality Check



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1.2: Form Level and Inter-form level validation**Domain Constraints**

- Domain Constraints are easy to check for when data is entered.
- Domain Types: Attributes may have the same domain e.g. employee's name, manager's name, subordinate's name
- At the implementation level they all are character strings
- At the conceptual level, we do not expect customers to have the same names as branches, in general.
- Strong typing of domains allows us to test for values inserted.
 - E.g. Salary cannot exceed Rs. 20000.
 - E.g. For an Airlines Application the from – to cities combination may not exist

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1.2 : Form Level and Inter-form level validation

Real World Rules

- Real World Rules would not be domain/project specific.
- Examples:
 - An employee has only one name, is in one department.
 - An employee's salary should not be greater than that of the manager of the department.
 - A check on the salary and commission values to prevent the commission value from being greater than the salary value.



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1.2: Form Level and Inter-form level validation

Inter Form dependencies

- Inter Form dependencies – requires that a value referred to in some attribute actually exists in some entity
- Examples:
 - The employee must exist as an employee ID in the Employee list.
 - Ensure that each employee in the employee list works for a department that is listed in the department list.
 - If you try to delete a customer and there is an order which references that customer, you need to decide what to do.
 - Delete any order associated with the customer and then delete the customer OR do not allow the deletion unless the order is deleted.



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Note : For E.g.1 applicable when giving a ref. Of Emp Id. for say logging a call & not when profiling the employee.

Some More Examples

When an order is entered, the entered customer id must exist in Customers list.

If the customer associated with an order is changed, the new value must exist in Customers list.

1.2: Form Level and Inter-form level validation

NULL Checks

- It might not be detrimental if an employee's manager or hire date were temporarily omitted.
- However, it might not be permitted to have a record of an employee that does not have an employee name.



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1.2: Form Level and Inter-form level validation

Functionality Checks

- The Form must perform its intended functionality as per the specifications
E.g. The form for updating an employee profile must update it and not add a duplicate one.



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1.3: Field Level and Inter-Field Level validation**Definitions**

- Validation - ensures that data is valid before attempting to process it, thereby avoiding the generation of a run time error (or invalid results).
- Field level validation includes validating each field with respect to its specifications.

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For instance in a date field characters are entered, and the form is submitted then it will not get recorded in the database, because of incompatible types in the data provided and the data expected.

The database operation will return an error, which will be conveyed to the user. The user will then rectify the error and re submit the data.

This approach is time consuming, increases the response time. This can be avoided by ensuring that the data provided is in the same format / range as expected before submitting it. This is accomplished through field level validations. The tester has to ensure that all fields are validated before submitting the data.

If the user is not allowed to work with certain Fields on the Window, then those Fields should not be enabled for that user, thereby, reducing the possibility of invalid information from entering into the Database.

This approach can be divided into two sections, the Setup/Infrastructure of Field Level Validation/Security and the actual Implementation/Usage of it.

With the use of an example – Maintaining Customer Information. Lets say we need to maintain a few Fields in the Customer Table

Customer Number, Name, Sales Rep., Country, State, Credit Limit and Comments.

We have also determined that Customer Number, Sales Rep., Country and Terms are Required Fields (have to be filled in). In addition, we need to validate (information has to conform to allowed values) the Sales Rep., Country, State, and Credit Limit Fields.

Based on this example, we will develop a dynamic Field Level Validation/Security mechanism for the Customer Maintenance. Not only will this mechanism allow us to validate the information entered on the UI, but furthermore, allow us to validate it based on the User, or the User's Group properties.

1.3: Field Level and Inter-Field Level validation

Types of Field Level Validations

- There are basically two types of field validations:
 - Independent Validations
 - Dependent Validations



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1.3: Field Level and Inter-Field Level validation**Independent Validation**

- Validating each field individually.
- Independent validation does not depend on other fields.
- This type of validation can be done at the field level.
- In some cases, such as entering a valid customer number, immediate validation is necessary.
- In many other cases it's questionable, however, whether or not this is helpful to the user.

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This will involve applying all the testing techniques

Valid equivalence classes

Invalid equivalence classes

Boundary value analysis

Almost every field in your database requires some type of input validation. Checklist

1. What characters are valid or invalid for the field?
2. Do you want only numeric data? Do you want uppercase letters only?
3. For numeric fields, is there a high/low range limit?

1.3: Field Level and Inter-Field Level validation
Independent Validation (Cont.)

■ Data Type:

E.g.: Tickets is an integer field

Data type is **integer**
No Characters can be entered.

■ Length:

- Minimum
- Maximum

Tickets:

Minimum Length : 1
Maximum Length : 2



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Length

The number of characters to be entered in a field.

For example, a required zip code field must have 5 or 9 numeric characters to be considered valid, and the UI may prevent the user from leaving the field while the value is not valid.

1.3: Field Level and Inter-Field Level validation

Independent Validation (Cont.)

- Mandatory Field:
 Must data be entered into a field?
Tickets:

 Is there a specific list of valid values for the field?
The number of tickets for an airline reservation is mandatory.
Minimum Value : 1
Maximum Value : 10
Default Value : 1
Typical Value : none
- Value Range:
 - Minimum Value
 - Maximum Value
 - Default Value
 - Typical Value


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Range

Implicit constraints - $0 < \text{age} < 100$

Explicit constraints - In case of an employee related form the $18 \leq \text{age} \leq 55$ (retirement age)

Default Value – 18

Mandatory

Q. Must data be entered into a field?

Are there any required fields on the form? Almost every input form has at least one required field.

While placing an order, there should be at least 1 item in the order.

Validation stage – on submit (to avoid forcing the user to enter the mandatory fields in a specific order)

Typical Values

Q. Is there a specific list of valid values for the field?

If you have a customer type field, and you only deal with Retail, Wholesale, and Distributor customers, then providing a list for the user would almost guarantee a valid input.

1.3: Field Level and Inter-Field Level validation

Dependent Validation

- Dependent Field Level Validation:
 - With dependent validation, the validation rule of a field depends on one or more other fields.
 - E.g. A date range where date1 must be smaller than date2. There is no way to validate this with field-level validation since you never know if the user is going to change the other field before committing. Therefore, dependent validation in general can only be performed when the user commits his work.



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1.3: Field Level and Inter-Field Level validation

Dependent Validation (Cont.)

- Derived Field: no. of rules and calculations that are applied to the data to produce the derived field

E.g: Years of Service gets calculated based on the Date of Joining and Date of Retirement entered.

- Next field to enter based on other field(s) contents

E.g: Date of Retirement of an employee to be entered is dependent on the Date of Joining entered.



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Example

Age gets calculated automatically based on birth date and current date.

What is this a conditional field?

For instance, if the user indicates on a form that the customer wishes to have his purchase shipped instead of picked up, the shipping address would be a conditional field.

1.3: Field Level and Inter-Field Level validation

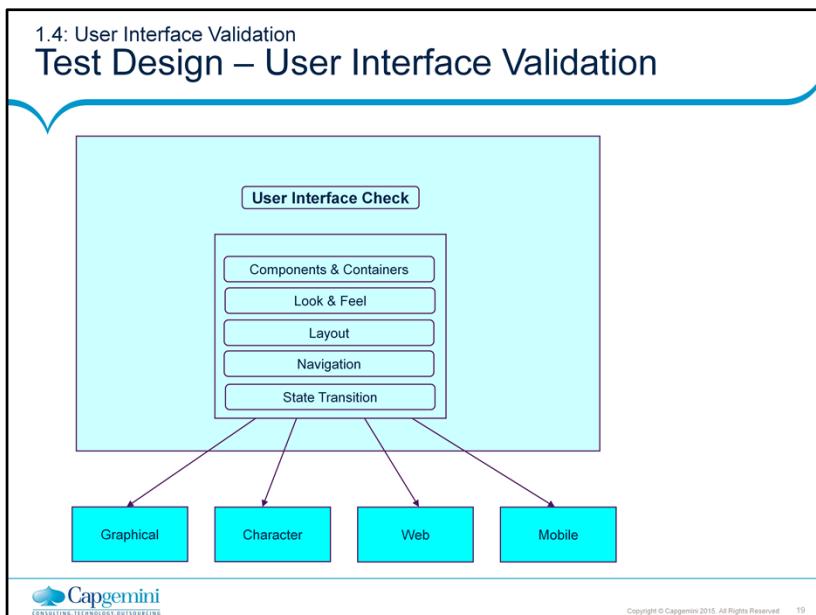
Validation Stage

- When should a field be validated?
 - As you type -- certain disallowed keystrokes will be ignored.
 - When you leave a field -- data is checked and/or corrected.
 - Upon submission -- all fields marked as Required must have values.
 - During batch processing

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Batch processing – Executing a series of non interactive jobs all at one time.

An example of batch processing is the way that credit card companies process billing. The customer does not receive a bill for each separate credit card purchase but one monthly bill for all of that month's purchases. The bill is created through batch processing, where all of the data are collected and held until the bill is processed as a batch at the end of the billing cycle.



Forms are mainly used to collect user entered data to the system. We enter our login data or use one signup form to enter data as a user to a database table or to a form processing script. There are different components like text box, radio buttons, checkbox, combo box or drop down list boxes for users to enter data to a system.

1.4: User Interface Validation
Component Validation

The screenshot shows a Windows-style application window titled 'Flight Schedule'. The interface includes a menu bar with 'File', 'Edit', 'Analysis', and 'Help'. Below the menu is a toolbar with icons for file operations. A pink callout bubble labeled 'Component' points to the 'Flights...' button in the toolbar. Another pink callout bubble labeled 'Component' points to a small image of a city skyline in the bottom right corner of the window. The main window contains sections for 'Flight Schedule' and 'Order Information'. The 'Flight Schedule' section has fields for 'Date of Flight' (02/12/05), 'Fly From' (Frankfurt), and 'To' (London). The 'Order Information' section includes fields for 'Flight No.' (13560), 'Departure Time' (12:48 PM), 'Arrival Time' (01:33 PM), 'Airline' (SR), 'Name' (Krishna), 'Tickets' (1), 'Price' (\$503.40), and 'Total' (\$503.40). It also features radio buttons for 'Class' (First, Business, Economy) and buttons for 'Update Order', 'Delete Order', and 'Insert Order'. At the bottom, there's a progress bar labeled 'Insert Done...' and an 'Order No.' field containing '15'. The Capgemini logo is at the bottom left, and a copyright notice is at the bottom right.

Guidelines to be followed when preparing GUI test cases

Check for availability of all the objects on the application.

Check for alignment of all the objects, even though customer does not specify them in the requirements.

Check for consistency of the objects (Color, appearance, resolution, spelling etc) And any such feature that can be tested just by observing or a defect that can be avoided by just looking and pointing out in the development stage will fall under GUI test cases.

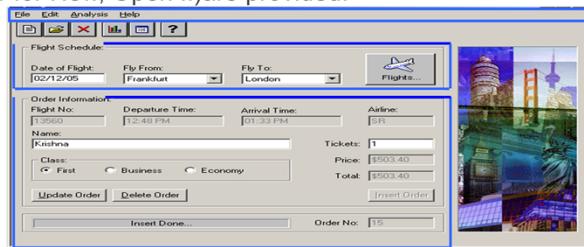
1.4: User Interface Validation
Container Validation

The screenshot shows a Windows-style application window titled 'Flight Schedule'. Inside, there's a 'Flight Schedule' panel containing flight details like date, origin, destination, and a 'Flights...' button. Below it is an 'Order Information' panel with fields for flight number, departure time, arrival time, airline, name ('Krishna'), tickets (1), class selection (radio buttons for First, Business, Economy, with First selected), price (\$503.40), and total (\$503.40). Buttons for 'Update Order', 'Delete Order', and 'Insert Order' are present. At the bottom are 'Insert Done...' and 'Order No: 15' fields. To the right of the main window is a vertical scroll bar. Two pink callout boxes point to the right side of the 'Flight Schedule' and 'Order Information' panels. The top box is labeled 'Component containing other components (Container)' and the bottom one is also labeled 'Component containing other components (Container)'. The Capgemini logo is at the bottom left, and a copyright notice is at the bottom right.

This is validating container controls such as Panel. Components are arranged in the order in which they are defined in the parent container's component sequence.

1.4: User Interface Validation Layout Validation

- Components are laid out in a (pre-defined) Logical order:
 - Flight Schedule
 - Order Information
 - Order Status
- Components for Quick access of frequently performed user actions (Toolbar for New, Open ..)are provided.

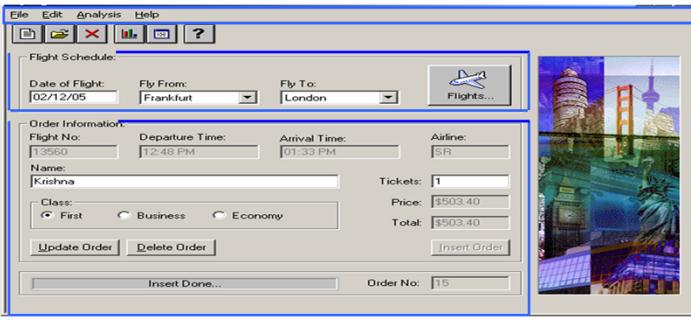


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Layout validation is the process of automatically determining how components should be arranged on screen, how to explicitly set component size and position. It is the responsibility of a container's skin. When laying out a form, keep in mind that the order in which you do so is important. Typically, screen readers read from top-to-bottom, left-to-right.

1.4: User Interface Validation
Navigation Validation

- Navigation ensures that the user is able to navigate easily:
 - Tab Order
 - Navigation to other forms



The screenshot shows a Windows-style application window titled 'Flight Schedule'. It has a menu bar with 'File', 'Edit', 'Analysis', and 'Help'. The main interface includes fields for 'Date of Flight' (02/12/05), 'Fb From' (Frankfurt), 'Fb To' (London), and a 'Flights...' button. Below this is an 'Order Information' section with fields for 'Flight No.' (13560), 'Departure Time' (12:48 PM), 'Arrival Time' (01:33 PM), 'Airline' (SR), 'Name' (Krishna), 'Class' (First selected), and buttons for 'Update Order' and 'Delete Order'. To the right, there's a summary table with 'Tickets: 1', 'Price: \$503.40', and 'Total: \$503.40', along with an 'Insert Order' button. At the bottom are 'Insert Done...' and 'Order No: 15' buttons. On the right side of the window, there's a decorative image of various landmarks like Big Ben and the Golden Gate Bridge.

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Navigation is used to give the visitor the option of navigating between several different pages, frequently visited pages. The tab order defines the order in which elements will receive focus when navigated by the user via the keyboard. The tabbing order may include elements nested within other elements.

1.4: User Interface Validation

State Transition

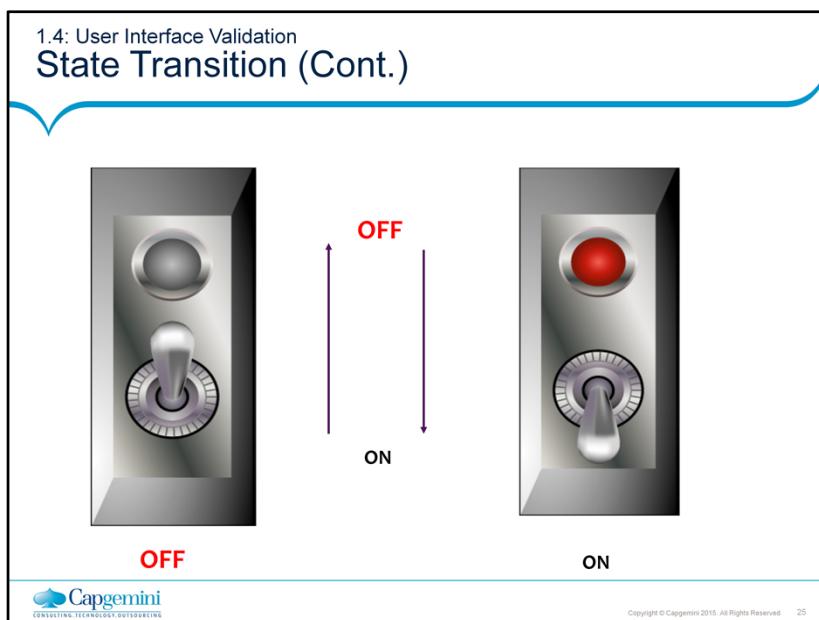
- State transition
- Models each state a system can exist in
- Models each state transition
- Defines for each state transition
 - start state
 - input
 - output
 - finish state



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State transition testing focuses on the testing of transitions from one state of an object to another state. Incorporate the state transition testing preparation into the test scenario building process.

For example, include tests of an account transitioning from open to closed and an account transitioning from closed to open (e.g., account closed in error).



Input: switch on

Output: light on

There can be different states to be considered here.

start state: on, input: switch off, output: light off, finish state: off

start state: off, input: switch on, output: light on, finish state: on

1.5: Error messages validation

Error messages Validation need

- Like Airplane designs, these days software applications need to be designed for failures.
- There must exist code that keeps the functional code from failing because of:
 - Erroneous input
 - Unexpected environmental conditions



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1.5: Error messages validation

Error messages definition

- Error Message

- Helpful Information displayed to the user, indicating that the action / data is invalid.
- Provide some specific indications as to how the problem may be resolved and if possible let users pick from a small list of possible solutions.

- Error Message Validation

- Insure that the expected error message does occur and provides the user with helpful information.



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1.5: Error messages validation

Error messages Validation - WHY

- To check the properties of input data.
- To ensure that basic usability requirements with respect to error messages are met :
 - Precise description
 - Clear next step
 - Consistent
 - Helpful
- Look for missing error messages.
- Look for displaced error messages.
- To ensure that the application is brought to a pre-defined stage.



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1.5: Error messages validation

Error messages Validation - WHEN

- Error Messages for the following testable items need to be validated:
 - Use Cases
 - Forms
 - Fields



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1.5: Error messages validation

Test Engineer's approach

- Consult a project document (User's Manual) for a list of error messages.
- Consider each input that the software under test accepts and focus on erroneous values.
- Check the properties of input data:
 - Input Type – Test with invalid input types, e.g. if the input is an integer, enter a real number or a character
 - Input Length – For alphanumeric (character) inputs, enter more or less characters than the specification will elicit an error message
 - Boundary values – Boundary values represent special cases.

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1.5: Error messages validation

EXAMPLE – Validation at Form Level

Validate that the Error Message pops up when the order referred to does not exist.

The screenshot shows two windows. On the left is a modal dialog titled "Flight Reservations" with a red X button in the top right corner. It contains a red circular icon with a white X and the text "Order number 99 does not exist" below it, with an "OK" button at the bottom. On the right is a larger window titled "Open Order". It has a header bar with "Open Order" and a search section with fields for "Customer Name" and "Flight Date". Below this is a checked checkbox labeled "Order No." with the value "99" entered into its input field. At the bottom are "OK" and "Cancel" buttons. A callout bubble from the text above points to the error message in the "Flight Reservations" dialog.

Flight Reservations

Order number 99 does not exist

OK

Open Order

Search:

Customer Name

Flight Date

Order No.

99

OK Cancel

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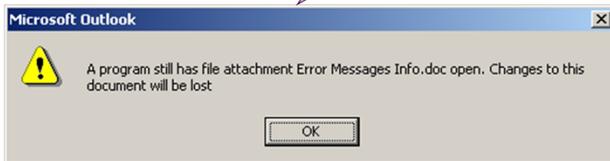
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Note: An attempt is made to open an order that does not exist.

1.5: Error messages validation

EXAMPLE - Validation at Form Level (Cont.)

Validate that the *Warning* Message pops up when the mail containing an attachment is closed and that attachment is still open



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Note: Here a warning is displayed.

1.5: Error messages validation

EXAMPLE - Validation at Field Level

Validate that the Error Message pops up when the input value is of wrong data type.

Input Type

The screenshot shows a Microsoft Outlook dialog box titled "Microsoft Outlook". It contains a yellow warning icon and the text: "You must specify a valid date. Check your entries in this dialog box to make sure they represent a valid date." At the bottom is an "OK" button. Above the dialog box, a text input field shows the placeholder "Birthday:" followed by the invalid text "sdgfgjhg".

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Note: Input type expected is date.

1.5: Error messages validation

EXAMPLE - Validation at Field Level (Cont.)

Validate that the Error Message pops up when the input value is too short.

Input Length

Flight Reservations

Agent name must be at least 4 characters long.

OK

Login

Agent Name: abc

Password: xxxxxx

OK Cancel Help

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Note: Here the number of characters entered are less than the specification of the field i.e. Agent Name

1.5: Error messages validation

EXAMPLE - Validation at Field Level (Cont.)

Validate that the Error Message pops up when the input value is too big.

Boundary Value



1.5: Error messages validation

Tips

- When software components interact with other components (hardware or software) that are subject to errors or faults, the calling software component must handle errors and recover properly

E.g.

- Remote connections being dropped
- security denials
- Performance problems
- No such messages should appear: "Error 949 - Unknown Error"



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1.5: Error messages validation

Tips (Cont.)

- Check for a shared database content that is unexpected. As other systems begin to interface and update the shared database, initial data purity assumptions may be violated.
- Check for the Disk being full



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Summary

- In this lesson, you have learnt:
 - There are different testing phases in testing life cycle like
 - Test Planning
 - Test Design
 - Test Development
 - Test Automation
 - Test Execution
 - UI testing covers Component, Container, Layout, Navigation & State transition.
- Following validations are considered for form level validation
 - Domain Constraints
 - Real World Rules
 - Inter Form Dependencies
 - NULL checks
 - Functionality Check



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Summary

- There are basically two types of field validations:
 - Independent Validations
 - Dependent Validations
- Error Message Validation ensures that the expected error message does occur and provides the user with helpful information.



Review Question

- Question 1: _____ would be domain/project specific.
- Question 2: An employee has only one name, is in one department is a Domain constraint.
 - True / False
- Question 3: A postcondition for a use case should be true regardless of which flows were executed
 - True / False



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Task Based Approach

Lesson 2: Reports Validation

Lesson Objectives

- To understand the following topics:
 - What is Report
 - Approach To testing of Reports
 - How & When to test reports?
 - Purpose of Reports
 - Types of Reports
 - Testable elements (Content, Format, Look & Feel)
 - Cumulative of reports
 - Archival of reports
 - Security of Reports
 - Performance of Reports
 - Localization Issues



Initiative - Scope

- Though testing of Reports involves a vast number of tasks , the scope of the initiative will be as follows
 - Test only textual reports
 - Test only content , format , layout



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2.1: Reports

What is a Report?

- As per the Dictionary a “Report” is word which is used to:
 - Give a spoken or written account of something
 - Convey information about an event or situation
 - Present oneself as having arrived somewhere
 - Piece of information about an event or situation.



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In this Presentation/Session/course, We would touch upon why automation is done, What are its benefits from QTP's point of view, QTP testing process, Introduction to the QTP interface in addition to what is mentioned.

As per software terminology,
a Report is a formatted and organized presentation of data by accessing the data source of the application.

2.2: Testing Reports approach

Approach for testing of Reports

■ How & When to test Reports?

- Understand application
- Study test design documents of the application
- Study test Specifications for the same
- Data Availability
- Creation test cases
- Automation of test cases(if applicable)



2.3: Testing Reports approach

How and When to test reports?

- Testing reports is tedious and a tricky activity.
- Trace back effect on to the programs updating the data source.
- The testing of reports should begin at the definition stage of reports itself. This will ensure that errors and bugs do not go undetected.

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Reports are generated after some business processing is done.

Different users of reports

Business Analyst

End users

2.4: Purpose of Reports

Scope and Purpose of Reports

- Scope Of Reports is based on
 - Intended audience
 - Purpose of the Report
 - Type of information to be communicated

- Purpose of Reports
 - Application data
 - Use data for analysis
 - For MIS purposes
 - Document or store whatever is done

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Objective of testing report is

To identify the testable elements in a report

To identify a systematic approach for testing the testable elements

To automate the test cases at possible scenarios

2.5: Reports types

Types Of Reports

- Textual
- Graphical (bars, graphs, charts...)
- Pivot charts



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2.6: Testable Elements

Elements for testing reports

- Elements for testing reports are
 - Content
 - Schema
 - Format & layout
 - Look and Feel



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2.6: Testable Elements

Testing Contents

- Content is the data that will be printed in the report when a report is invoked.

Report - Notepad

Customer	Tickets	Price	Total	Order No.	Date	Airline	Flight No.	Departs	Arrives	From	To
Bob Johnson	2	\$354.94	\$709.88	6	11/24/04	AA	6218	12:48 PM		Denver	
Fred Smith	3	\$647.60	\$1942.80	2	11/25/04	AA	6218	03:48 PM		Portland	
Jack Barnes	1	\$312.00	\$312.00	9	11/24/04	AA	6218	10:24 AM		Los Angeles	
Jane Doe	9	\$301.50	\$2713.50	7	11/24/04	AA	6218	09:00 AM		San Francisco	
Jane Hansen	2	\$160.80	\$321.60	10	11/24/04	TWA	4214	10:24 AM		Los Angeles	
Joe Shaece	1	\$337.40	\$337.40	6	11/24/04	TWA	4214	12:24 PM		Portland	
John Doe	1	\$312.00	\$312.00	1	11/22/04	AA	6219	10:24 AM		Denver	
Jon Baker	4	\$323.40	\$1293.60	4	11/22/04	TWA	6232	12:48 PM		Los Angeles	
Kim Smith	6	\$529.41	\$3176.46	5	11/24/04	AA	6195	08:00 AM		San Francisco	
Mary Parker	5	\$160.60	\$803.00	3	11/22/04	AA	6195	11:30 AM		Portland	
test	3	\$323.80	\$971.40	16	11/22/04	AA	135600	10:00 AM		Frankfurt	
test	1	\$162.80	\$162.80	13	11/22/04	SR	135600	11:09 AM		London	
test	3	\$323.80	\$971.40	15	11/22/04	SR	135600	12:48 PM		Los Angeles	
test	3	\$323.80	\$971.40	27	11/22/04	SR	135600	11:09 AM		Frankfurt	
test	3	\$323.80	\$971.40	17	11/22/04	SR	135600	12:48 PM		London	

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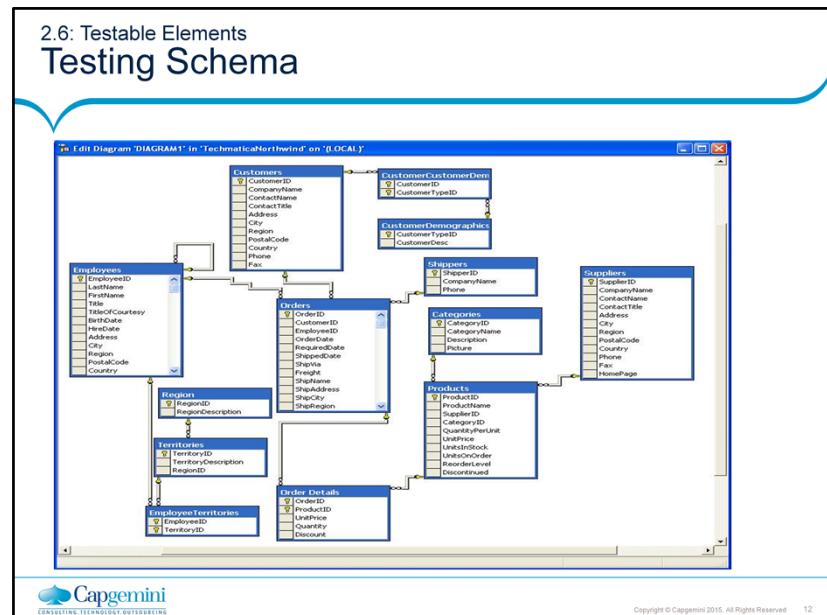
2.6: Testable Elements

Testing Contents (Cont.)

- Contents can be tested in the following ways
 - Is there data for the report?
 - Is the data printed in the report?
 - Is it the right data printed in the report?
 - Is the report as per the requirements?
 - Is the data reported up to date (data source's status)?



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2.6: Testable Elements

Testing Schema (Con.)

- The schema defines the tables, the fields in each table, and the relationships between fields and tables. (linking of keys across tables)
- Based on the schema defined for a report ,data will be fetched.
- Complicated the schema, complex will be the query for fetching the data.



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2.6: Testable Elements

Testing Schema (Cont.)

- Linking right table
- Linking the keys in tables
- Consistency of the schema
- Output Data from the schema



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2.6: Testable Elements

Testing Format

- Format actually refers to the report formats and record formats.
- Report formats are the columns, headers and footers on a page.
- Record formats are the fields within a record.
- Format of the report usually includes the look and feel of the report too.

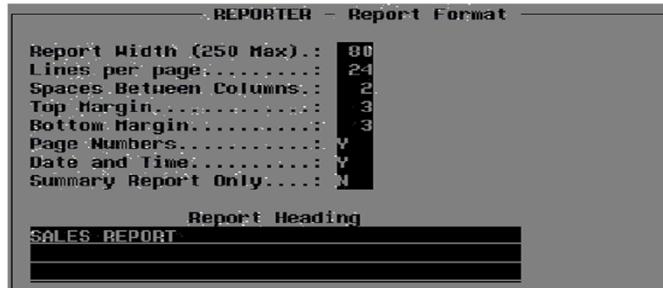


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2.6: Testable Elements

Testing Format (Cont.)

- Format of a report can be tested
 - Is the format as per requirements?
 - Is the data printed as per the format specified?
 - Is the format conveying the required details?



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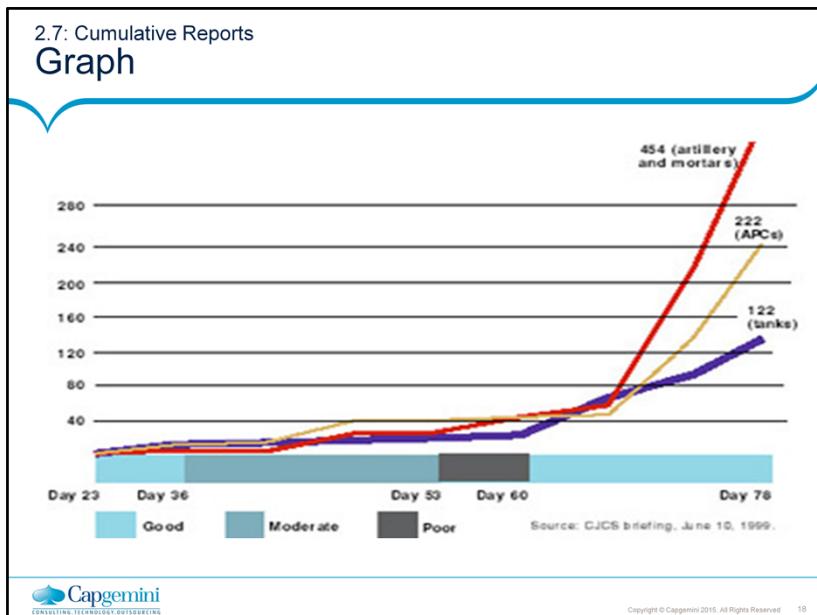
2.6: Testable Elements

Testing Look and Feel

- Look and feel refers to
 - Design aspects of a graphical user interface - in terms of both colors, shapes, layout, typefaces, etc (the "look");
 - The behavior of dynamic elements such as buttons, boxes, and menus (the "feel").
- Testing of the look and feel usually is done manually to understand the comfort level of the end user while using the reports



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2.7: Cumulative Reports

What are Cumulative Reports?

- Cumulative reports refer to the report that is obtained or acquired as a result of accumulation.
 - E.g. Month wise balance sheet generation for a bank account
- These reports will usually include summations and calculated data derived from databases.
- Testing of these reports will include
 - Test the variables for initialization
 - Accumulated data summation



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2.8: Archival Reports

Archival Of Reports

Report ID: AR20002
 Deposit BU: M02--Canada Operations
 Report Currency: Base Amount
 Deposit ID: ALL VALUES
 OPRID: ALL VALUES
 Post Status: All Status

PeopleSoft Receivables
PAYMENT DETAIL
 For 01-JUN-1995 through 31-DEC-1995

Entry Date	Deposit ID	Seq	Acctg Dt	Payment ID	Payment Amount	Status	Customer ID/Name	Item ID	
11/18/1995	1	1	11/18/1995	5002391	77,344,232.00 CAD	C	50022	NewTerr	CD-010002
							50022	NewTerr	CD-010003
11/18/1995	1	2	11/18/1995	PT-1510	34,321,952.00 CAD	C	50021	P&P	CD-010001
							50021	P&P	CD-010001
11/18/1995	1	3	11/18/1995	0082500	51,211,622.00 CAD	C	50027	PC Dist	CD-010004
					162,877,806.00 CAD				

12/20/1995	2	1	12/20/1995	0022974	18,220,300.00 CAD	C	50007	Chelsea	CD-010008
		2	12/20/1995	22051	35,111,649.00 CAD	C	50021	P&P	CD-010007
12/20/1995	2	3	12/20/1995	V298	88,653,155.00 CAD	C	50027	PC Dist	CD-010005
					141,985,104.00 CAD				

12/21/1995	3	1	12/21/1995	24000451	12,545,808.91 CAD	C	50002	Meridien	CD-010009

					12,545,808.91 CAD				

					TOTALS FOR 2				
					141,985,104.00 CAD				

					TOTALS FOR 3				
					12,545,808.91 CAD				

					TOTALS FOR M02				
					317,408,718.91 CAD				

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2.8: Archival Reports

Archival Of Reports (Cont.)

- Archival refers to copy or move data onto a secondary disk or tape for backup or data retention purposes.
- Archived files are normally compressed to maximize storage media, and such programs may be called "archiver programs" or "archiving programs."
- Reports are usually archived and ported either into disks, memory.
 - E.g.: Balance sheet for an account for last 2 years, which might include retrieval of archived data.



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2.9: Reports Security

Security of Reports

- Certain reports will have access to them based on the levels of users.
- Security issues play a primary role when dealing with confidential reports.
- Displaying and viewing of reports also needs to be decided during the report designing itself.
 - Eg:MIS reports which require special security features and codes for accessing the same.



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2.10: Reports Performance

Performance of Reports

- Reports performance can play a vital role
 - If many users access the report at the same time
 - when reports need to be displayed with the predefined volume of data.
 - Large volume of data to be included in the report
- While testing the report for performance ,It also gives us an idea about the configuration required for the application on the whole.

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2.11: Localization

Testing Localization

- Some reports will involve some changes as per the version of O/S used.
 - Eg: Microsoft O/S in English, Japanese.
- So testing of such reports might involve
 - conversion details like date, money
 - font sizes for various localized reports
 - Use of certain commands specific to a particular o/s



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Summary

- In this lesson, you have learnt:
- Use case Testing of reports is thus one of the most important aspects to be considered while testing an application since the output status of an application is verified with the help of the reports.
- It should also be noted that report needs to have a user-friendly format (look and feel) so that the contents can be easily grasped.
- By testing any report using the specified approach the accuracy and coverage of testing will be ensured.



Review Question

- Question 1: What are all the types of reports available?
- Question 2: _____ refers to copy or move data onto a secondary disk or tape for backup or data retention purposes
- Question 3: Format actually refers to the _____ formats and _____ formats.



Task Based Approach

Lesson 03: Import Export
Validation

Lesson Objectives

- To understand the following topics:
 - Introduction to import – export
 - Types of import – export
 - Importance of import – export
 - Importance of testing import – export
 - Test Design: import – export



3.1: Introduction to Import Export

What is Import - Export

- Dictionary meaning of –
 - Import – Bring in from abroad.
 - Export - transfer abroad.
- In software we use term ‘import-export’ when two or more applications transfer data.
- This exchange of data is commonly known as – ‘Application Integration’.
 - Level 1 – import – export.
 - Level 2 – API.
 - Level 3 – Shared Database.



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3.1: Introduction to Import Export

What is Import - Export (Cont.)

- Analogy between a new joiner and importing the data

New Joiner	Data Import
Can come any institute / college.	Can come from any source
Goes through 'same' screening as per Patni Policy.	Should go through same set of import – export checks.
After he / she joins will be tested really in project.	After passing all import – export validation data will go for field form validation if invoked there.



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3.2: Types of Import Export**Types of Import - Export**

- Copy - Paste
 - E.g. Copy Paste the tables from excel to word.
- Using Clipboard
 - E.g. Paste data from Acrobat reader to notepad, word, etc. in a sequence.
- Save as – Open with
 - E.g. Save the excel file in 'csv' and opening it with access.
- Import Export Wizard.
 - E.g. Import the data in Excel from external text file.
- Scheduler to transfer the data
 - E.g. Transferring Month end reports within applications

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3.2: Types of Import Export

Types of Import - Export

- Using XML

- E.g. Excel 2003 enables us to map XML elements to fields so user can import / export data from workbook.

- Network / Technology used for transferring e.g. LAN, GSM, Bluetooth, etc.

- E.g. Data transfer within mobile phones using Bluetooth / Infrared.

- Import Export in Database

- E.g. Import – Export data between Oracle and SQL Server.



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3.3: Importance of Import Export**Advantages of import - export**

- In a scenario when applications should work independently and still communicate following are the advantage of using import – export
 - Most widely used method for exchanging data between Application
 - Least expensive
- Import Export enables application(s) talk to each other. Any sort of problem with this functionality means application(s) will fail to share information.

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3.4: Testing Import Export**Importance of Testing Import - Export**

- Imagine a Failure in import – export functionality among several application(s) of banking system. When this functionality fails, user account details are not known to billing system, ledger system and SO ON...
- User will smile so long as he / she is withdrawing the amount from his account (as his / her balance remain unchanged!!!)...but this will even cause:
 - Wrong computation of account balance even 'Zero Balance'.
 - Rejecting transaction through net / mobile banking etc.
 - Even in worst case – Rejecting Access to user account.

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3.5: Test Design

Testable Elements

- Following are the testable elements for Import Export Testing:
 - Field Level Validation.
 - Real World Rules.
 - Mapping.
 - Data source.
 - Data Destination.
 - Data Quality.
 - Storage of Temp Files.
 - Intermediate application.
 - Scheduler Functions.



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In import – export, destination application accepts external data so at this stage this data should be validated at the field and form levels.

3.5: Test Design

Field Level Validations

- While transferring data between two applications , we need to validate each field of applications with respect to its specification
- There are basically two types of field validations:
 - Independent Validations.
 - Data Type.
 - Data Format.
 - Mandatory Field.
 - Dependent Validations.



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3.5: Test Design

Independent Validations - Data Type

- Different application support different data types. E.g. Integer, String etc.
- While exporting / importing, check should be added to test that No erroneous values are exchanged when -
 - Specific 'Data Type' is not supported by any of the application.
 - 'Data Length' supported is different in source and destination.
 - 'Data Range' supported is different in source and destination.

Microsoft Office Project

Invalid date.

 This is not a valid date, or it is outside the range for dates, which is January 1, 1984 through December 31, 2049.

Type a date in the correct format: for example, 6/15/00 or June 15, 2000.

OK

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Data Range Related Validation Error

Data Type: For decimal; value representation double and long could be used.

Data Length: Character length different in source(20) and Destination (15).

Data Range: Employee Salary limit is different in two applications, like 25000 in source and 20000 in destination.

3.5: Test Design

Independent Validations - Data Format

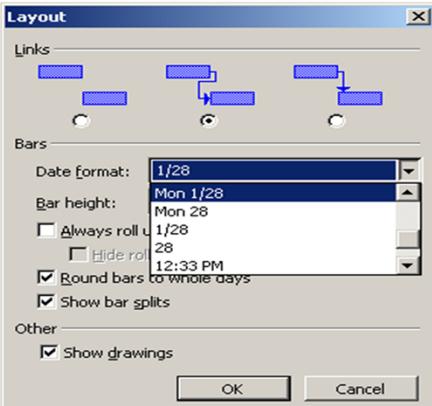
We check:

- Whether 'same format' is present after importing / exporting data.
 - Effect of different formats on values.
 - Format is organization of data according to specifications.
 - E.g. In excel we have Date format, Percentage format, Time format.
 - Irrespective of the format value of data should not change.



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3.5: Test Design
Independent Validations - Data Format (Cont.)



The screenshot shows the 'Layout' dialog box from Microsoft Project. It has sections for 'Links', 'Bars', and 'Other'. In the 'Bars' section, the 'Date format:' dropdown is set to '1/28'. Other options in the dropdown include 'Mon 1/28', 'Mon 28', '1/28', '28', and '12:33 PM'. There are also checkboxes for 'Always roll up', 'Hide roll up', 'Round bars to whole days', and 'Show bar splits'. The 'Other' section contains a checked checkbox for 'Show drawings'. At the bottom are 'OK' and 'Cancel' buttons.

E.g. In MS Project - date format may differ in different project documents. It is essential that change in format is recognised and no erroneous values are uploaded.

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3.5: Test Design

Independent Validations - Mandatory Field

- Applications may have different fields as mandatory in source and destination application, in that case it is important to check that – Records where the mandatory fields are missing are excluded or included without erroneous values.

E.g.

- Tasks are exported from MS Project to CSV file.
- CSV file is modified so that there is only start date and no finished date.
- Finished date is associated with due date in Outlook.
- On importing such file – both start and due date should appear 'none'. As in outlook we can not have a task with start date and no due date.



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3.5: Test Design

Independent Validations - Mandatory Field

The screenshot shows the Microsoft Outlook interface. On the left, there is a 'Folder List' pane showing various Outlook folders like Assignments, General Info, Import Export, Salary Details, TTR, Unesh 2, and an 'Outlook Today - [Umesh1]' folder which contains Calendar, Deleted Items, Drafts (1), Inbox, Journal, Junk E-mail, Notes, Outbox, Sent Items, and Tasks. The 'Tasks' folder is circled with a red oval. On the right, there is a 'Subject' column header for a task list. The task list includes:

Subject	Start Date	Due Date
Study	Fri 12/30/2005	Fri 12/30/2005
Field	Mon 12/19/2005	Mon 12/19/2005
UC to TC	Fri 12/16/2005	Fri 12/16/2005
Creation & Internal Review	Fri 12/16/2005	Thu 12/22/2005
Test Case	Fri 12/16/2005	Tue 12/27/2005
Project Mgmt - MOMs	Thu 12/8/2005	Fri 12/30/2005
DP Activity	Thu 12/8/2005	Fri 12/30/2005
Project Closing Activities	None	None
Configuration Mgmt	None	None
Study of Material and Ref Docs	None	None
Project: XMap3	None	Fri 12/30/2005

At the bottom of the window, there is a Capgemini logo and the text 'CONSULTING TECHNOLOGY OUTSOURCING'. To the right of the logo, it says 'Copyright © Capgemini 2015. All Rights Reserved' and '15'.

3.5: Test Design Dependent Validations

- Checks are to be incorporated for Data Linkage.



- We check the following:
 - Presence of Linkage / Dependency after import / export.
 - Effect of absence of one value on other value after import / export.

3.5: Test Design

Real World Rules

- This is similar to 'Form Level Validations' from Task Based Approach. All these validations are important while importing the data.
- When importing only that data should be accepted which abides by certain rules / standards of destination application.
- Real World Rules would not be domain/project specific.

Examples:

- As on 7th Feb 2006, Maximum duration allowed in MS Project is 10181.22 days; any duration beyond this should be converted to this value till 64240. Beyond this user should get the valid error.



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3.5: Test Design
Real World Rules (Cont.)

The screenshot shows the Microsoft Project application interface. A task named '644240' has a duration of '10181.22 days' assigned. A validation dialog box titled 'Microsoft Office Project' is displayed, stating 'Invalid duration.' and 'This is not a valid duration, or it is outside the range for this field. Type a duration in the correct format: for example, 4 hours (or 4h), 12 days (or 12d), or 2ed for elapsed days.' The 'OK' button is visible at the bottom of the dialog.

Getting Started x 644240

Microsoft Office Online

- Connect to Microsoft Office Online
- Get the latest news about using Project
- Get online training for Project
- More...

Search for: Example: "Print more than one copy"

Open

- Project2.mpp
- Prj1_TS1_2CSV.csv ("Who Does What" report)
- PRJ_IND183_Schedule0
- PRJ_IND183_Schedule1
- More...

Microsoft Project

Feb 6, '06 Feb 13, '06

Duration

10181.22 days

644240

Invalid duration.
This is not a valid duration, or it is outside the range for this field.
Type a duration in the correct format: for example, 4 hours (or 4h), 12 days (or 12d), or 2ed for elapsed days.

OK

Start | RealO... | Tasks... | Import... | Micro... | 7:39 PM

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3.5: Test Design
Mapping

From: Text File Field	To: Microsoft Office-Project Field	Data Type
OUT OF CONTEXT:Resources and Assig	Name	
Start	Start	TEXT
Finish	Finish	TEXT
Work	Work	TEXT

Preview

Text File:	Start	Finish	Work
Project:	Start	Finish	Work
Preview:	Thu 12/8/05	Fri 12/30/05	1,493.02 hrs
	Thu 12/8/05	Fri 12/30/05	691.2 hrs

Help < Back Next > Finish Cancel

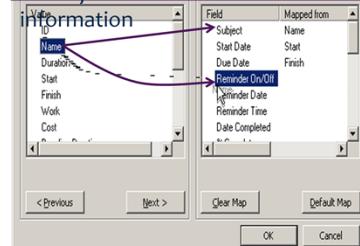
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3.5: Test Design Mapping

- While transferring the data from one application to other it is required to map different destination 'fields' to source 'fields'.
 - We check:
 - Presence of Mapping Option.
 - Effect on Data when not all the fields are mapped.
 - Effect on data when mapping is present for fields that are not present.

E.g. Mapping 'Task Name' to 'Reminder ON /OFF' (even allowed) creates no sense. But it's mapping to subject will transfer exact task



3.5: Test Design **Data Source**

- Data Source – from where data will be ‘exported’.

We check for the following Scenario:

- Same Application. E.g. Excel to Excel.
- Different Application from the same suite. E.g. Word to Excel.
- Different Application not from the same suite. E.g. Acrobat Reader to Notepad.



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3.5: Test Design

Data Destination

- Similar to Data Source Data Destination – is where data will be ‘imported’.

We check for the following scenarios:

- Same Application. E.g. Excel to Excel.
- Different Application from the same suite. E.g. Word to Excel.
- Different Application not from the same suite. E.g. Acrobat Reader to Notepad.
- Data destination need not support all types of information that source has. Hence We check that no erroneous values occur on
 - Importing data more than the capacity of application. E.g. Importing data table of more than 35536 rows from website to excel.
 - Importing values / data not supported by application. E.g. GIF images in excel.



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3.5: Test Design Data Quality

- Data Quality means data should be unchanged from its source and has not been accidentally or maliciously modified, altered, or destroyed.
- We Check:
 - Presence of entire data:
 - Data - Leakage should not occur.
 - E.g. In MS Project 'Baseline' details should be transferred from source to destination on copy – pasting it.
 - Accuracy and Correctness

This means exact value should be obtained.

E.g.

- Three decimal places are accurate than two decimal places.
- In MS Project task name can not have special character “ ‘ ” in it. So user should not be in a position to import / export this data.



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3.5: Test Design

Storage of Temp Files

- While transferring the data to different application many times the data is Stored in temp files.
- These temp files are created on:
 - User machine or Server
- Following are incorporated in this
 - Necessary access rights requirements to create the file are checked.
 - Availability of required space for creating temp files is checked before transferring the data.
 - Creation of temp files does not affect the performance of user machine or server.



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3.5: Test Design

Intermediate Application

- Data transfer is not as simple as Application A to Application B!
- Sometimes there are intermediate applications which perform some operations on the exported data –
- Basic operations are
 - Re-Formatting the data.
 - Updating the data.
- So that it is delivered to the destination as desired. Here we check
 - Form level validations, real world rules, data quality at each interface.
 - Successful completion of set of operation by intermediate application(s).



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3.5: Test Design

Scheduler Functions

- Scheduler will transfer the data / information on getting active impulse.
- Impulse can be generated on time bound or quantity bound basis.
- Time bound Impulse: Scheduler transfers the data when pre-defined time interval lapses.
- Quantity bound Impulse: Scheduler transfers when pre-defined quantity of data / information is received.

- We check:
 - Whether impulse is generated as specified.
 - After exporting whether 'Clean up' (cleaning up of temp file locations, buffers, etc).
 - Impulse trigger should be reset so that it can be re-generated next time.



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Summary

- In this lesson, you have learnt:
 - Import Export is very crucial utility in the applications.
 - Applications share data through this functionality.
 - It is mandatory to validate Import Export functionality across applications communicating to each other.



Review Question

- Question 1: Bring in from abroad is _____.
- Question 2: Data format means data should be unchanged from its source.
 - True / False
- Question 3: Availability of required space for creating temp files is checked before transferring the data
 - True / False



Review Question: Match the Following

- 1. Data quality
- 2. Data format
- 3. Field level validation
- 4. Data source

- A. Data type
- B. Expectedly go wrong
- C. No Data - Leakage
- D. Organization of data
- E. Data will be exported from
- F. Data will be exported to



Task Based Approach

Lesson 04: Help Validation

Lesson Objectives

- To understand the following topics:
 - Introduction to Help system
 - Scenarios for testing a Help System
 - Help system testing coverage
 - Help system usage
 - Need of testing Help system
 - Elements of a Help System



4.1: Introduction to Help system

What is a Help System?



The screenshot shows the Microsoft PowerPoint Help window. The left pane displays a table of contents with various topics like 'Getting Started', 'Creating, Opening, and Saving PPT', and 'Formatting Paragraphs'. The right pane is titled 'Check spelling' and contains a detailed description of how to check spelling in PowerPoint. It includes sections for 'Check spelling as I type', 'Temporarily hide the automatic display of spelling errors', 'Turn off automatic spelling checking', and 'Check the spelling of text in another language'. Below this is a section for 'Additional resources'.

➤ **Help System is one of the most common and important kinds of online documentation.**

➤ **It facilitates quick access to specific information needed while using the product and assists the users in performing routine tasks and solving problems.**

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4.2: Scenario for testing Help system

Scenarios for testing a Help System

- There are two scenarios in which help system needs to be tested:
 - An existing and enhanced Help System
 - A new Help System being created
- All the proceeding slides discuss the approach for testing an existing Help System.



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4.3: Help system testing coverage

Coverage

- Though testing of Help System involves a number of tasks , the scope of the initiative will be as follows
 - Testing only an existing and enhanced Help System
 - Writing manual test cases for the Help System



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4.4: Help system usage

Why do users access Help?

- To find a specific information
- For Reminders
- To learn an application
- To explore

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To find specific information. Many users request Help only when they have a specific question. Often, they have tried to do something on their own first and were unsuccessful.

For reminders. Many users refer to Help to remind them of something they have forgotten. For example, users frequently look up specific tasks and keyboard shortcuts.

To learn an application. Novices and other users often choose Help to learn a new application. Because Help is perceived as part of the application, it is the easiest to access.

To explore. Users sometimes browse the Help file just to see what's there, following one topic to the next, gradually tracing a path through the information and building an understanding of it. Hypertext systems like Windows Help are especially compatible with this kind of use.

4.5: Need of testing Help system

Why do we need to test Help?

- To ensure that the Help System is intuitive
- To ensure that the Help System will be able to guide the users solve a problem
- To ensure that the problems in the help information are resolved before the help systems are delivered.



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4.5: Elements of Help system
Elements of a Help System



- User Interface
- Table of Contents
- Contents
- Index
- Search

4.5: Elements of Help system

Testing User Interface

- The users of the help system interact with it through the user interface.
- The followings need to be tested for User Interface:
 - Layout
 - Navigation
 - Title
 - Format and Presentation
 - Keyboard Shortcuts



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4.5: Elements of Help system

Testing User Interface: Layout

The screenshot shows the Microsoft Notepad help page. Several UI elements are highlighted with purple circles:

- A purple circle labeled "Tabs" surrounds the tab bar at the top of the window.
- A purple circle labeled "Border" surrounds the main content area of the window.
- A purple circle labeled "Frames" surrounds the "Related Topics" frame on the right side.
- A purple circle labeled "Browser Window" surrounds the entire window frame.

Notepad overview

Notepad is a basic text editor that you can use to create simple documents. The most common use for Notepad is to edit text (.txt) files, but many users find Notepad a simple way to edit web pages.

Because Notepad supports only very basic formatting, you cannot independently save special formatting in documents that need to remain source text. This is especially useful when creating HTML documents for a Web page because special characters or marks that may appear in a published Web page may not appear in the published Notepad file or may even cause errors.

You can save your Notepad files as Unicode, ANSI, UTF-8, or big-endian Unicode. These formats provide improved flexibility when working with documents that use different character sets.

Related Topics

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4.5: Elements of Help system

Testing User Interface: Layout (Cont.)

- The browser window should be split into Frames
- The left frame should contain three tabs - Contents, Index and Search.
- The right frame should contain the contents corresponding to each of tabs in the left frame.
- The border (divider) between the left and right frames should be adjustable.
- The layout should be simple and user friendly.



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4.5: Elements of Help system

Testing User Interface: Navigation

Using different language formats in Notepad

Notepad allows you to create and open documents in several different formats: ANSI, Unicode, big-endian Unicode, or UTF-8. These formats allow you to work with documents that use different character sets.

By default, your documents will be saved as standard ANSI text. Unicode is a superset of all the major scripts of the world. It includes character sets common to business and computer use. When you save a file in Unicode, you can use Unicode control characters to help with text files and documents for languages such as Arabic and Hebrew.

Some fonts cannot display all of the Unicode characters. If you see any characters missing in your text file, you can change the font to one that includes the character. Generally, Microsoft Sans Serif is a good choice for Unicode characters.

The bytes (a unit of storage) in a word in a Unicode document are stored in a little-endian format. This means the bytes are arranged in an order opposite to that of the bytes in a word in a document created on an Intel processor. The most significant byte has the lowest address in memory. To make your documents accessible to users on these types of computers, save your Notepad file in the big-endian Unicode format.

UTF stands for Universal Character Set Transformation Format. UTF-8 is the most common format. Save your document in UTF-8 if you are using older transmission media that support only 8 bits of significant data within individual bytes.

See the [Unicode Consortium Web site](#) for more information on these formats.

Note

Notepad

Hide Back Forward Options

Contents Index Search

Notepad overview

- ② Find specific characters or words
- ② Find and replace specific characters or words
- ② Wrap text to the window size
- ② Go to a specific line
- ② Cut, copy, paste, delete text
- ② Change the font style and size
- ② Create a header or footer
- ② Change the appearance of a printed Notepad document
- ② Print a Notepad document
- ② Insert file name and date in a document
- ② Append a log to a document
- ② Using different language formats in Notepad



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Related Topic Controls: Unlike the Keyword Link or See Also control, the Related Topic control enables Help authors to choose related topics individually to appear in a pop-up window or dialog box. The Related Topic control creates buttons or links within topics that activate a list showing multiple hyperlinks to related topics.

4.5: Elements of Help system

Testing User Interface: Navigation (Cont.)

- Hypertext linking should be validated.
- Navigating links inside the help pages should be validated.
- Related Topic control link should be validated.
- Scrolling should be provided, if a topic does not fit entirely on a single page.
- The buttons for Navigating and formatting the display should function properly.



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4.5: Elements of Help system

Testing User Interface: Title

The screenshot shows a Windows Notepad help window. The title bar says "Notepad". The menu bar has "Contents", "Index", and "Search". The left pane shows a tree view with "Topics" circled. The right pane shows the content of the selected topic, which includes a sub-section "To cut, copy, paste, or delete text" with instructions. A blue arrow points from the word "Topics" in the text to the "Topics" node in the tree view.

Context Free- Doesn't depend on the topic or other surrounding information to make the sense of the name.

Understandable- Use standard grammar and terms meaningful to the users.

Thematic- Have the title summarize or preview the topic. Make the meaning of the title obvious in a glance without further reading.

4.5: Elements of Help system

Testing User Interface: Title (Cont.)

- Titles are provided at the top of every topic that tells what the topic contains.
- The title should be
 - Context free
 - Understandable
 - Thematic



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4.5: Elements of Help system

Format and Presentation

Choosing a program to write a document

You should pick your **program** based on how complicated your document is. What kind of formatting do you need? Will it have graphics or tables? Will people using other operating systems need to open or modify it? How large is the document? Are you creating it for the web?

Windows includes two word processing programs: Notepad and WordPad. Each provides basic editing capability, but you may have tasks that are better suited for one editor than the other.

Decide whether your document needs any of the following before you choose an editor.

- **Formatting**
- **Tables**
- **Graphics**

Notepad does not support graphics. You can insert graphics into a WordPad document and modify them by linking or embedding them in your document. Almost all word processors provide graphics support.

- **Page setup**
- **Large documents**
- **Cross-operating system support**
- **Multiple languages**

WordPad and Notepad allow you to save your files in different formats, such as Unicode, which gives greater flexibility when working with documents that use different character sets or documents created by other programs.

Most word processors also allow you to save your files in a variety of formats. Some programs also allow you to save files in Rich Text Format (RTF), which is useful for checking spelling. In WordPad, documents that use multiple languages should be saved in text format. Critical text should be saved in RTF.

- **HTML and Web pages**

If you only need to create simple documents, Notepad is your best choice. Click here to open Notepad or click here to open WordPad or another word processor for anything more complicated. Click here to open WordPad.

Links

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Pop-up windows are designed to display brief amounts of information off a parent main .They remain on the user's screen as long as the focus is on them. They are ideal for definitions of unfamiliar terms or brief examples and images. They appear temporarily on top of larger windows that include topics with more involved text. By appearing temporarily when, say, a user selects a pop-up hyperlink composed of an unfamiliar term, the text that displays in a pop-up enables the user to maintain her point of view in the main window rather than jump away to a topic in the parent window.

Secondary windows are 'static' windows. They remain on your user's screens until they are manually closed. They are available only through the links inside the topics. It is best to design the secondary windows so that they do not cover up the area of the application they address. You can use them for opening a a shortcut to any application from within the topic or to explain the user some settings by opening a window for settings. For e.g- Shortcut opens up the Internet Explorer settings as a secondary window, in order to explain the user the settings for the same.

Context Sensitive Window- It is composed of small blocks of text in a temporary window. These pop up windows typically appear when called as field-level, context sensitive help from the software products interface.

Expanding Hot Spot Text- This can be used to explain something with greater detail for those who need the additional information. Otherwise, the text appears only as simple bulleted or numbered text and reduces the overall length of the topic.

4.5: Elements of Help system

Format and Presentation (Cont.)

- Help window should display a title with relevant application name.
- The information should be provided through Expanding Hot Spot Text, Secondary Window, Context Sensitive Window, Pop-up Window
- Highlighting and font style should be used consistently.
- Simple fonts should be used.
- Printable version of help should be made available.
- The application should be kept in view while using help.



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4.5: Elements of Help system

Keyboard Shortcuts

- The keyboard shortcuts should be validated
 - To access the Contents, Index and Search tabs.
 - To access the buttons provided on the toolbar and tabs.
 - To access other controls.



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4.5: Elements of Help system

Testing Table of Contents

The screenshot shows a help system window for 'Notepad'. At the top, there's a toolbar with 'Hide', 'Back', 'Forward', and 'Options' buttons. Below the toolbar is a menu bar with 'Contents', 'Index', and 'Search' options. The main area has three tabs: 'Notepad', 'Index', and 'Search'. The 'Notepad' tab is selected, displaying a table of contents for Notepad. The contents include:

- 1 Notepad overview
- 2 Find specific characters or words
- 2 Find and replace specific characters or words
- 2 Wrap text to the window size
- 2 Go to a specific line
- 2 Cut, copy, paste, or delete text
- 2 Change the font style and size
- 2 Create a header or footer
- 2 Change the appearance of a printed Notepad document
- 2 Print a Notepad document
- 2 Insert the time and date in a document
- 2 Append a log to a document
- 2 Using different language formats in Notepad

To the right of the table of contents, there's a detailed topic titled 'To find and replace specific characters or words' with four numbered steps:

1. On the Edit menu, click Replace.
2. In Find what, type the characters or words you want to find.
3. In Replace with, type the replacement text.
4. To replace all instances of the text at once, click Replace All Or, to replace one instance at a time, click Find Next, and then click Replace.

Below the topic is a 'Related Topics' section. At the bottom of the help window, there's a Capgemini logo and copyright information: 'Copyright © Capgemini 2015. All Rights Reserved' and '19'.

Example of Task Perspective

Imagine a person who has never used an ATM machine but would like to know how. Imagine the answer this person might hear after asking the ATM's engineer or creator how it works. The engineer may describe how the ATM functions electronically, in other words, the system operations and technical processes that make it work. None of this information, however, would actually help the user perform a practical task. In fact, it's unlikely that the engineer's information would interest that potential user at all. He or she wants only to know, for example, how to draw money from an ATM, or deposit a check, or use it in other ways that would transform it into a practical and useful tool. Thus, the potential user is uninterested in the engineering behind the ATM; instead, the user wants to know how to use it as a tool to fulfill a practical need.

To create good Help systems, technical writers must understand the users' needs. In so doing, technical writers will be able write Help from a task-perspective, anticipating the users' practical needs, instead of a system-perspective, which is the technical description of how something functions.

4.5: Elements of Help system

Testing Table of Contents (Cont.)

- Only one information type should be included in each help topic.
- A topic should be created for each part of the product/menu item.
- Each branch should be limited to three levels only.
- Page icons inside the book icon should represent the headings to the Help topics.
- The book icons should represent the name of the folder, relevant to the topics it contains.



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4.5: Elements of Help system

Testing Contents

To create a header or footer

1. On the File menu, click **Page Setup**.
2. In the **Header or Footer** box, type the letter and character combination from the following table.

To	Type
Insert the open file's name or (untitled) if the file has no name.	&f
Insert the date.	&d
Insert the time specified by your computer's clock.	&t
Insert page numbers.	&p
Insert an ampersand (&).	&&
Align the header or footer to the left, center, or right.	&l, &c, or &r

Notes

- You can use more than one combination in the **Header or Footer** box. Leaving a space or tab between each combination will make the header or footer easier to read.
- To align text to the left, center, or right, you must first enter **&l**, **&c**, or **&r** in the **Header or Footer** box, followed by any other combinations you want to use.
- You can also incorporate text with the combinations. For example, **Page &p** will print out as **Page 1, Page 2**, and so on.

Related Topics

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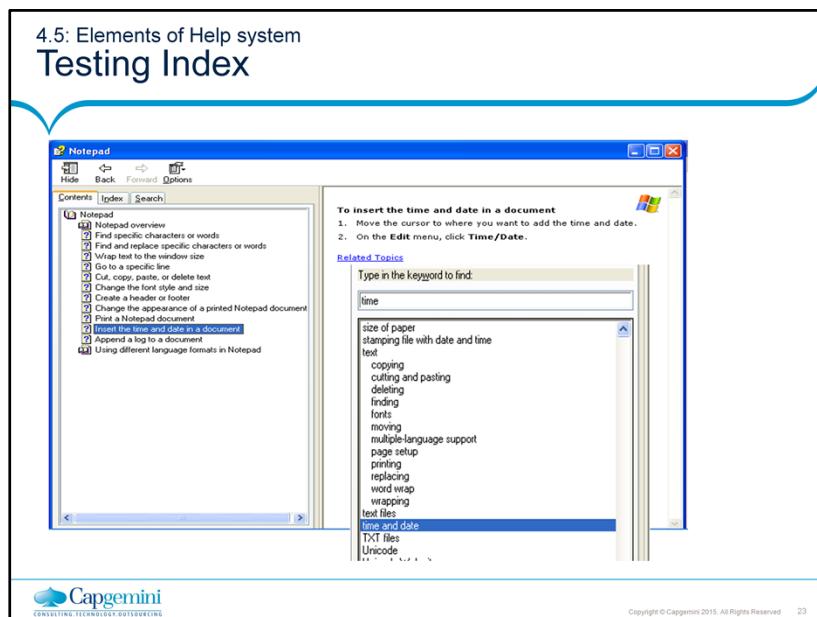
4.5: Elements of Help system

Testing Contents (Cont.)

- The length of topics should be kept short.
- Simple language should be used.
- The headings should be organized logically and consistently.
- The information should be relevant and highly structured.
- Help should be provided for all users- novice, intermediate and experts.
- Help should be provided to show the current status of a process.
- The information should not be repeated in more than one place.



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Many index entries are verb forms that express the verb-plus-object relationship. For these index entries, use gerunds (deleting files). to all your entries.

Most Help authors choose the plural because it does not require the use of an article before the noun. Using plurals is not problematic when using gerund entries as plurals (deleting files). Other nouns are singular because they are concepts (alignment) or proper nouns (Truecode). In the case of interface elements, use the plural when there are more than one of them (toolbars); use the singular when there is only one (Ruler). Lowercase most index entries but uppercase proper nouns or interface elements that are normally capitalized in documentation. These include commands (Save command) and interface objects such as Project toolbar or Date field. Use uppercase also for terms that are normally capitalized, such as ASCII.

Review all index entries to look for unintentional duplications and variations of the same words. For example, avoid creating an index that includes both date and dates as separate entries, as well as similar entries, such as adding record entries and adding records. They are practically the same.

4.5: Elements of Help system

Testing Index (Cont.)

- The index entries should be displayed in an alphabetical order.
- The Index entries should be the primary nouns and verbs from the title and the content.
- Nouns and commands should be in uppercase in index entries.
- Most of your index entries should be in lowercase.
- There should not be any duplicate index entries
- Each topic should include a variety of relevant index entries.



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4.5: Elements of Help system

Testing Search



The screenshot shows a Windows Notepad window with the title 'Notepad'. The menu bar includes 'File', 'Edit', 'View', 'Format', 'Options', 'Help'. Below the menu is a toolbar with icons for 'New', 'Open', 'Save', 'Print', 'Exit', 'Find', 'Replace', 'Format', and 'Options'. A status bar at the bottom shows 'Word Count: 0'. The main area has tabs for 'Contents', 'Index', and 'Search'. The 'Search' tab is active, with the text 'Type in the keyword to find:' followed by a text input field containing 'Footer'. Below the input field is a 'List Topics' button. A scroll bar is visible on the right side of the main area. The content pane displays a list of topics under 'Select Topic to display:' with 'Create a header or footer' selected. At the bottom of the Notepad window is a 'Display' button.

To create a header or **Footer**

1. On the File menu, click **Page Setup**.
2. In the **Header** or **Footer** box, type the letter and character combination from the following table.

To	Type
Insert the open file's name or (untitled) if the file has no name.	&f
Insert the date.	&d
Insert the time specified by your computer's clock.	&t
Insert page numbers.	&p
Insert an ampersand (&).	&&
Align the header or Footer to the left, center, or right.	&l, &c, or &r

Notes

- You can use more than one combination in the **Header** or **Footer** box. Leaving a space or two between each combination will make the header or **Footer** easier to read.
- To align text in the center or right, you must first enter **&l**, **&c**, or **&r** in the **Header** or **Footer** box, followed by any other combinations you want to use.
- You can also incorporate text with the combinations. For example, **Page &p** will print out as **Page 1**, **Page 2**, and so on.

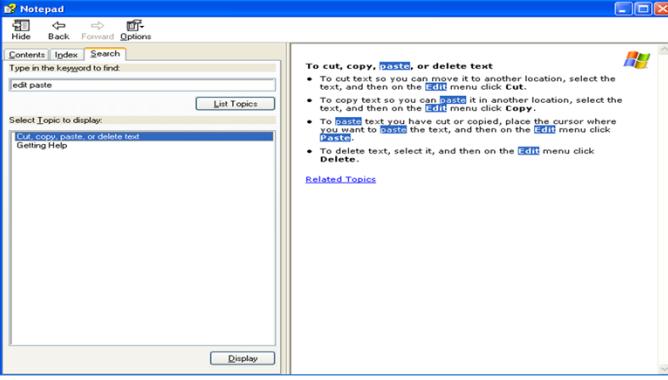
[Related Topics](#)

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4.5: Elements of Help system

Testing Search (Cont.)

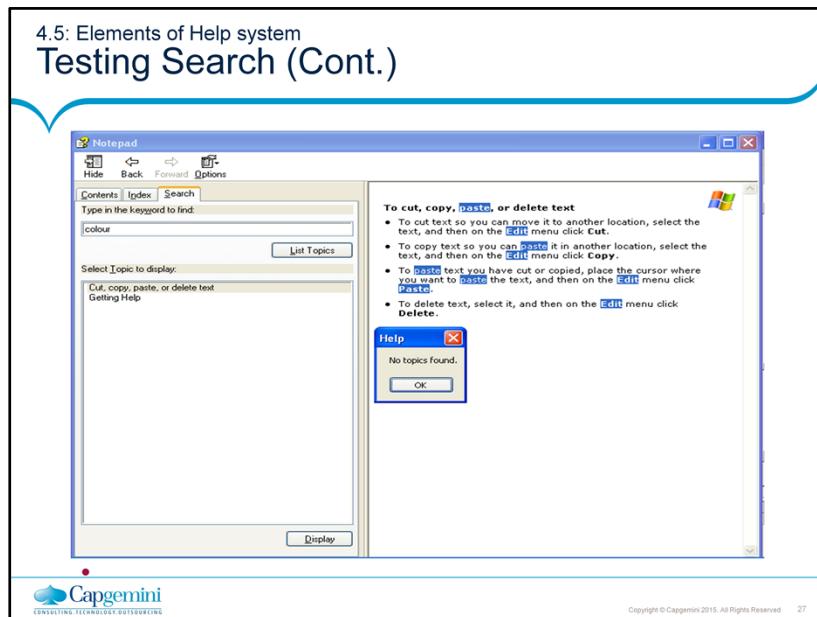


The screenshot shows a Windows Notepad window titled "Notepad". The menu bar includes "File", "Edit", "View", "Insert", "Format", "Tools", "Help". The toolbar has icons for Hide, Back, Forward, Options, New, Open, Save, Print, and Exit. The status bar shows "Word Count: 0". The main window contains a toolbar with "Contents", "Index", and "Search" buttons. A search bar says "Type in the keyword to find:". Below it is a "List Topics" button. A list box titled "Select Topic to display:" shows "Cut, copy, paste, or delete text" and "Getting Help", with "Cut, copy, paste, or delete text" selected. At the bottom is a "Display" button. To the right of the Notepad window is a sidebar with a Windows logo icon. It contains a bulleted list of instructions:

- To cut, copy, paste, or delete text:
 - To cut text so you can move it to another location, select the text, and then on the **Edit** menu click **Cut**.
 - To copy text so you can paste it in another location, select the text, and then on the **Edit** menu click **Copy**.
 - To paste text you have cut or copied, place the cursor where you want to paste the text, and then on the **Edit** menu click **Paste**.
 - To delete text, select it, and then on the **Edit** menu click **Delete**.

Below the sidebar is a link "Related Topics".

At the bottom left is the Capgemini logo with the text "Capgemini CONSULTING TECHNOLOGY OUTSOURCING". At the bottom right is the text "Copyright © Capgemini 2015. All Rights Reserved 26".



4.5: Elements of Help system

Testing Search (Cont.)

- The topics containing the words entered for search should be displayed.
- The words entered in the text field for search should be present and highlighted in the contents displayed.
- When more than one words are entered for search, the topics containing all the entered words should be displayed.
- An alert message should be displayed when searched for a word outside the context of the current system.



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Summary

- In this lesson, you have learnt:
- Help system is very important support system in the applications.
- Help system helps to understand the functionality of the application.
- It is mandatory to validate Help functionality across applications communicating to each other.



Review Question

- Question 1: In _____ and _____ scenarios in which help system needs to be tested?
- Question 2: _____ window is composed of small blocks of text in a temporary window
- Question 3: _____ frame should contain these tabs - Contents, Index and Search?
- Question 4: In Table of contents, each branch should be limited to _____ levels only



Task Based Approach

Lesson 5: Installation Validation

Lesson Objectives

- To understand the following topics:
- Introduction to Installer
- Importance of Testing the Installer
- Installer Test Design
 - Installation
 - Un-installation
 - Re-installation
- Importance of Installation testing
- OS Guidelines
- Example – QTP Installation



5.1: Introduction to Installer

What is an Installer

- An installer is a computer program that puts the files such as applications, drivers, or other software, onto a computer, such that the program works as desired.

- Analogy: Installer & New Guest:

New Guest being introduced	Application being Installed
Background of the guest to others.	Application information e.g. name, version, etc. Disk Space, Registry, etc
Look for a proper place	Other applications shouldn't be hampered.

- Installer should 'smoothly' add a new application into existing system. Even other should feel comfortable.



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5.2: Installer Testing Importance

- Installer is the first contact a user has with a new software!!!
- Installers can go seriously awry -
- New program that is installed is itself not running.
- Existing programs get affected.
- E.g. After installing a new application, execution of notepad generates errors (common dlls replaced with different versions).
- Even after un-installation, all registry entries not removed causing a problem while re-installing.
- System is damaged and we need to format the machine. E.g. OS dll's are overwritten or removed, Etc.



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5.2: Installer Testing Importance (Cont.)

- Installation testing is required to ensure:
 - Application is getting installed properly
 - New program that is installed is working as desired
 - Old programs are not hampered
 - System stability is maintained
 - System integrity is not compromised



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5.3: Installer Test Design

Installation Testing - Guidelines

- To test the installer, the following functionalities are to be considered:
 - Installation
 - Un-installation
 - Re-installation
- There are 'Circumstances when Installation Testing goes very critical'
- It is important to test that all the above functionalities follow the Installation Guidelines for the specific "platform"
 - Example: Testing QTP



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5.3: Installer Test Design**Installation checklist**

- Test Design for testing the installer of an application:
 - Install Options (Full, Typical, Custom)
 - Bill of Materials
 - Registry
 - Configuration(s) of supported platforms
 - Existence of other Software(s) on the machine
 - Error Recovery
 - Cancel / Exit Operation
 - Running Installer on drives other than the Default Drives
 - Installation Source
 - Backward Navigation
 - Prerequisites
 - Availability of the required Patches
 - Localization

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5.3: Installer Test Design

Install Options (Full, Typical, Custom)

- Test the following options:
 - FULL: Installs the full application
 - TYPICAL: Installs the typical part of the entire application
 - CUSTOM: - Installs customized components as per the user's requirement

- Depending on the option we choose, following get affected:
 - Bill of Materials
 - Registry
 - Prerequisites, etc



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5.3: Installer Test Design

Bill of Materials

- Bill of Materials:

- It's a complete list of 'everything' that constitutes the product. Bill of Materials check that proper directory structure is created and all files get copied from the source to destination. E.g. Installer should be checked for all dll files, help files, their location, etc

- Environment Variable(s):

- Environment variables are a set of dynamic values that can affect the way running processes behave



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5.3: Installer Test Design **Registry**

- Registry:
 - In Windows, environment variables are stored globally in the windows registry. Important post-installation checks are to test:
 - The correctness of the registry entries.
 - The presence of Minimum required entries / Only Important entries, etc.

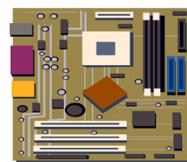
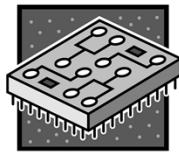


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5.3: Installer Test Design

Supported Platforms - Configuration

- Installer should be checked on all supported configurations :
 - Hardware (RAM, Speed, HDD, etc) :
 - Minimum Hardware set-up.
 - Recommended Hardware set-up.
 - Ideal Hardware Setup.
 - Operating Systems.
 - Disk File Formats – NTFS, FAT32.etc



5.3: Installer Test Design

Existence of other Software(s) on the machine

- Systems without any other application:
 - Installation is checked on a system where no other application is present
- Systems with other application:
 - Installation is checked in the presence of the maximum possible applications, avoiding all the restrictions mentioned in the 'Installation guide'
 - E.g. Anti-virus, MS office, Acrobat Reader, Applications similar to the one under test, etc



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5.3: Installer Test Design Error Recovery

- When installation is in progress errors can be generated by
 - Ending the Task
 - Logging-off from the system
 - Shutting Down the machine
 - Removing the disk from CDROM, etc.
- Check the following:
 - System recovers to a stable state.
 - Continuation of installation (in case of minor errors/warnings)
- Some installers end their activities when errors occur while some do not respond to these errors when in action



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5.3: Installer Test Design

Cancel/Exit Operation

- At any instance, on Canceling / Exiting the installation:-
- Confirmation (for canceling the process) should be asked from the user
- The System should remain stable. System integrity should be maintained
- Clean-up must be successful
- Installation must be terminated



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5.3: Installer Test Design

Running Installer on drives other than the Default Drives

- Installation should be carried out on different destinations like:
 - External / Removable Drives e.g. Zip, Jazz, etc.
 - Internal Hard Drives (where OS is not installed / non default drive),
 - Network drives
- Successful installation should be independent of 'default' destination drives

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5.3: Installer Test Design **Installation Source**

- At Test installing the application from all the installation sources:
 - CD
 - Network Drive
 - Removable Drives
 - HDD, etc
 - LAN/WAN/Internet
- Successful installation should be independent of 'default' installation sources.

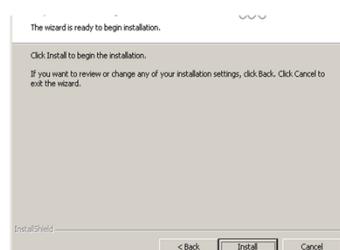
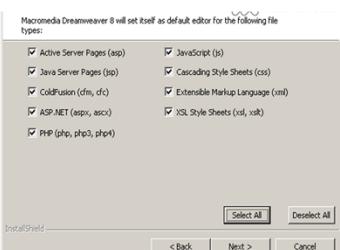


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5.3: Installer Test Design

Backward Navigation

- Ensure that the stated settings are cancelled/not cancelled/default settings are restored when the user navigates backwards (as per the specifications). Successful installation should be independent of 'default' installation sources.



Macromedia Dreamweaver 8 will set itself as default editor for the following file types:

<input checked="" type="checkbox"/> Active Server Pages (asp)	<input checked="" type="checkbox"/> JavaScript (js)
<input checked="" type="checkbox"/> Java Server Pages (jspx)	<input checked="" type="checkbox"/> Cascading Style Sheets (css)
<input checked="" type="checkbox"/> ColdFusion (cfm, cf)	<input checked="" type="checkbox"/> Extensible Markup Language (xml)
<input checked="" type="checkbox"/> ASP.NET (aspx, ascx)	<input checked="" type="checkbox"/> XSL Style Sheets (xsl, xslt)
<input checked="" type="checkbox"/> PHP (php, php3, php4)	

InstallShield < Back Next > Cancel Select All Deselect All

The wizard is ready to begin installation.

Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

InstallShield < Back Install Cancel

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5.3: Installer Test Design Pre-requisites

- Before commencing the Installation, the installer should check for certain pre-requisites:
 - Disk Space available against the required disk space
 - OS Present
 - Presence and / or absence of conflicting applications on the machine
 - Presence and / or absence of supporting applications on the machine
 - Read – Write permissions allotted
- Installation should commence only if all prerequisites are met



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5.3: Installer Test Design

Availability of Patches

- Some Patches are required with the application as an enhancement.
E.g. Script Debugger
- Following Checks are incorporated:
 - Availability of Patches along with the application installer
 - Option to install or skip the required patch
 - Relation between the 'required disk space' and patch installation
- User should have the privilege to Install / skip / uninstall just the patch



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5.3: Installer Test Design Localisation

- Applications are used Globally hence usage of 'Local Language' is a required aspect of the application, i.e. Localisation. Installer should also provide the Localisation:
 - Availability / Unavailability of Localisation
 - Presence in one installer / different installers for different language
- Ideally an application should be installed only in user specified Local Language(s) rather than installing all Language interfaces



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5.3: Installer Test Design Un-installation

- Test for the following:
 - All data, executables, and DLL files are removed. Error / Warning should be thrown for Shared DLL files
 - Machine is brought back to it's base state (free disk space) that was existing before installing the application. Application Data created by the user should not be removed during Un-installation
 - Registry Entries (related to the application) are removed
 - Folders (related to the application) are deleted
 - Indication is given, when some dependent (Child) application(s) present in machine
- Un-installation of the application must be tested with the following:
 - Add/Remove programs menu
 - Uninstaller option provided in the installer



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Pt 6.: If there is an application suite and we are just un-installing some application(s) from system, keeping dependent application(s); then user should get some indication before 'un-installing'.

5.3: Installer Test Design
Re-installation

- Re-install to verify that the installer behaves as per the installation guide:
 - Re-install in the same path the same version
 - Re-install in same path the upgraded version
 - Re-install in different paths the same version
 - Re-install in different paths the upgraded version



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5.3: Installer Test Design

Re-installation (Cont.)

- Re-install to verify E.g. User can re-install the same version and upgraded version of QTP on a machine in both same and different paths!!! But for applications like Dreamweaver, when the user tries to install the same version, he gets the option of removing or repairing it
- After installing the upgraded version, application should be successfully reverted, to old version, without much efforts



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5.3: Installer Test Design

Re-installation (Cont.)

- User can re-install the same version and upgraded version of QTP on a machine in both same and different paths!!!
- In such a case it is necessary to test the maximum number of copies that can be 'Re-installed' on same machine



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5.3: Installation Testing Importance

- Reality with users
 - Users often do not read the installation manual, even though it is vitally important. It's a part of reality that users do not do many things that are recommended. Installation still should be easy enough to deal with this reality
- Upgrades
 - Upgrades many times cause 'rework' to happen, Loss of data, Failure of other application(s) too. This should be captured in the 'Testing Phase'
- Licensing Requirements
- Registration Requirements



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Summary

- In this lesson, you have learnt:
 - Installer is the first contact of a user with a new software.
 - Following functionalities are to be considered for installer testing
 - Installation
 - Un-installation
 - Re-installation
 - It is mandatory to validate installation functionality to ensure that the new application is installed properly without affecting existing applications



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Add the notes here.

Review Question

- Question 1: _____ is the first contact a user has with a new software
- Question 2: Environment variables can affect the way running processes behave
- True/ False
- Question 3: _____ checks that proper directory structure is created



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Add the notes here.

Review Question: Match the Following

1. Registry
2. Patches
3. Pre-requisite
4. Bill of Materials
5. Localization

- A. Proper directory structure creation
- B. Environment variable
- C. All Language interface
- D. Disk Space availability
- E. Installation termination
- F. Enhancement



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Add the notes here.

V&V - Task Based Approach

V2.1

Lab Book

Document Revision History

Date	Revision No.	Author	Summary of Changes
12/8/2009	1	Priya Rane	Material Revamp
29/6/2011	1.1	Selva Lakshmi	Material Revamp
17/07/2015	2.0	Shilpa Bhosle	Material Revamp
12/05/2016	2.1	Amruta Rakhonde	Post-Integration Material Alignment

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Case Study – Report Testing

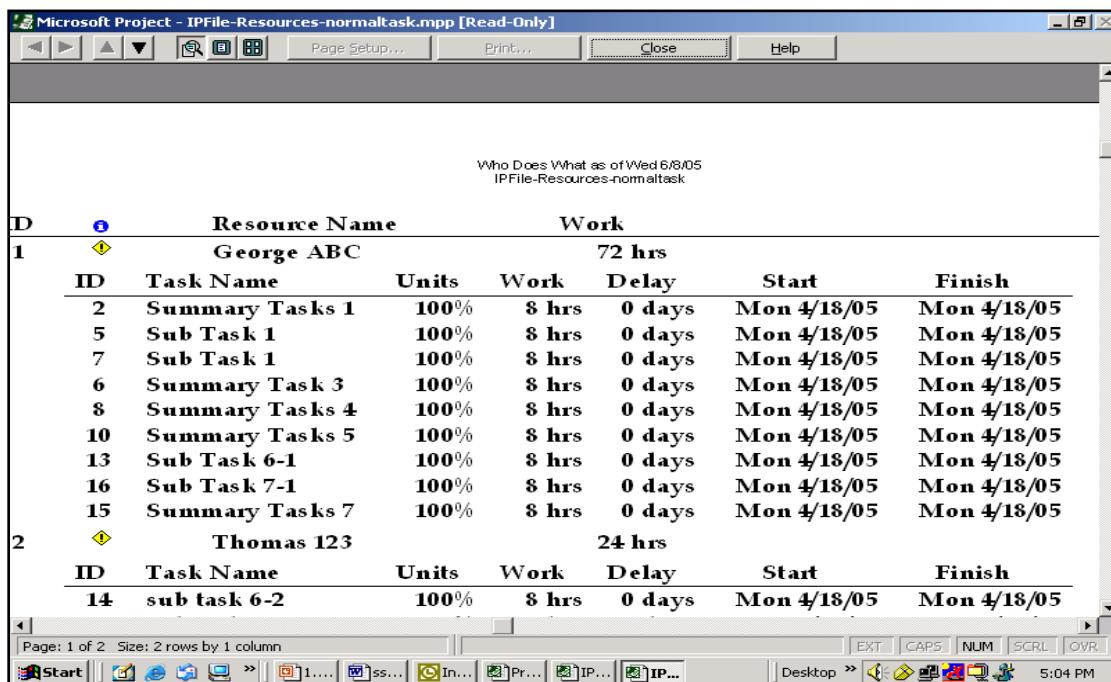
Case Study for Report testing - Ms Project Reports

1. With Microsoft Project, Information can be viewed or printed about tasks, resources, costs, and progress in a report that suits user needs.
2. The content displayed can be changed in most reports by changing tables, filters, or both.
3. For the purpose of understanding the approach towards the testing of reports, Let us consider the following report in MS-Project “**Who Does What Report**”

Who Does What Report?

1. It gives a resource wise report.
2. Name of the resource, task name, start date, finish date, will be taken from the database or inputs.
3. Total hours of work per resource will be derived based on that start date and finish.
4. It also gives an indication if the resources need to be leveled.

Microsoft Project - IPFile-Resources-normaltask.mpp [Read-Only]



The screenshot shows the Microsoft Project application window titled "Microsoft Project - IPFile-Resources-normaltask.mpp [Read-Only]". The main area displays a report titled "Who Does What as of Wed 6/8/05 IPFile-Resources-normaltask". The report is organized into two sections: one for resource "George ABC" and one for resource "Thomas 123".

Resource George ABC:

ID	Task Name	Units	Work	Delay	Start	Finish
2	Summary Tasks 1	100%	8 hrs	0 days	Mon 4/18/05	Mon 4/18/05
5	Sub Task 1	100%	8 hrs	0 days	Mon 4/18/05	Mon 4/18/05
7	Sub Task 1	100%	8 hrs	0 days	Mon 4/18/05	Mon 4/18/05
6	Summary Task 3	100%	8 hrs	0 days	Mon 4/18/05	Mon 4/18/05
8	Summary Tasks 4	100%	8 hrs	0 days	Mon 4/18/05	Mon 4/18/05
10	Summary Tasks 5	100%	8 hrs	0 days	Mon 4/18/05	Mon 4/18/05
13	Sub Task 6-1	100%	8 hrs	0 days	Mon 4/18/05	Mon 4/18/05
16	Sub Task 7-1	100%	8 hrs	0 days	Mon 4/18/05	Mon 4/18/05
15	Summary Tasks 7	100%	8 hrs	0 days	Mon 4/18/05	Mon 4/18/05

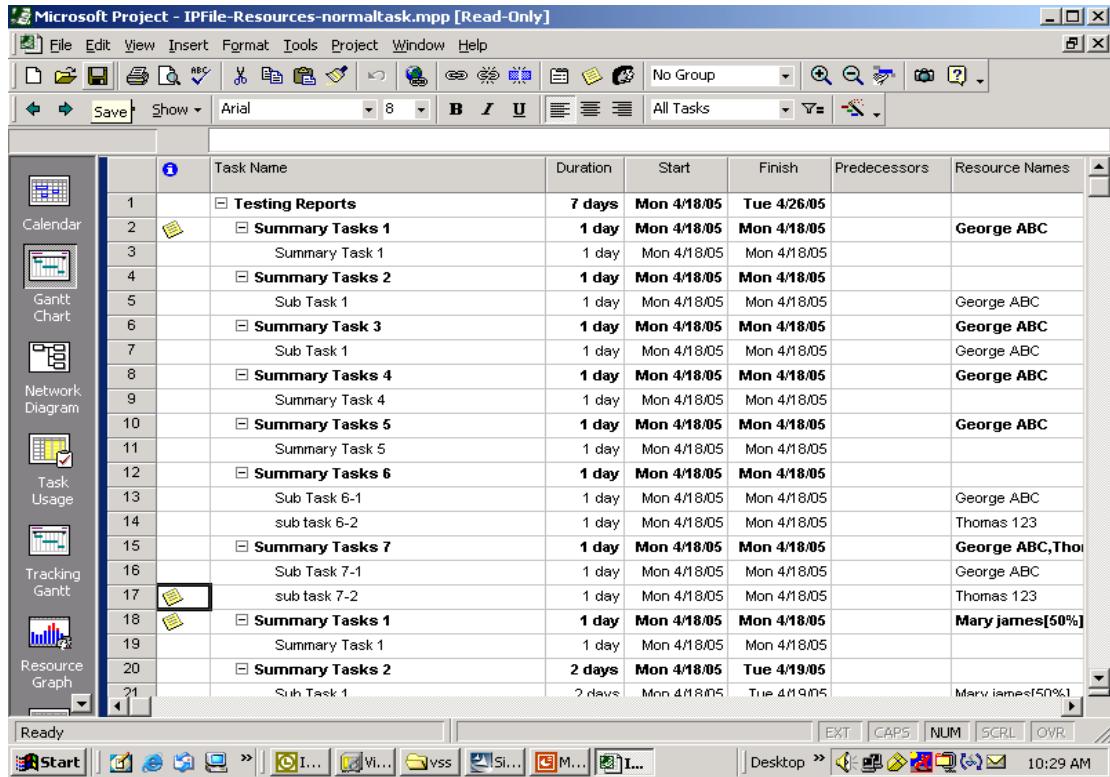
Resource Thomas 123:

ID	Task Name	Units	Work	Delay	Start	Finish
14	sub task 6-2	100%	8 hrs	0 days	Mon 4/18/05	Mon 4/18/05

Note:

1. The Test Design Document should be discussed here
2. The Test Specification Document should be discussed here

Create an input File



The screenshot shows a Microsoft Project window titled "Microsoft Project - IPFile-Resources-normaltask.mpp [Read-Only]". The main area displays a table of tasks under the heading "All Tasks". The table columns are: Task Name, Duration, Start, Finish, Predecessors, and Resource Names. The tasks listed are:

	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1	Testing Reports	7 days	Mon 4/18/05	Tue 4/26/05		
2	Summary Tasks 1	1 day	Mon 4/18/05	Mon 4/18/05		George ABC
3	Summary Task 1	1 day	Mon 4/18/05	Mon 4/18/05		
4	Summary Tasks 2	1 day	Mon 4/18/05	Mon 4/18/05		
5	Sub Task 1	1 day	Mon 4/18/05	Mon 4/18/05		George ABC
6	Summary Task 3	1 day	Mon 4/18/05	Mon 4/18/05		George ABC
7	Sub Task 1	1 day	Mon 4/18/05	Mon 4/18/05		George ABC
8	Summary Tasks 4	1 day	Mon 4/18/05	Mon 4/18/05		George ABC
9	Summary Task 4	1 day	Mon 4/18/05	Mon 4/18/05		
10	Summary Tasks 5	1 day	Mon 4/18/05	Mon 4/18/05		George ABC
11	Summary Task 5	1 day	Mon 4/18/05	Mon 4/18/05		
12	Summary Tasks 6	1 day	Mon 4/18/05	Mon 4/18/05		
13	Sub Task 6-1	1 day	Mon 4/18/05	Mon 4/18/05		George ABC
14	sub task 6-2	1 day	Mon 4/18/05	Mon 4/18/05		Thomas 123
15	Summary Tasks 7	1 day	Mon 4/18/05	Mon 4/18/05		George ABC, Thomas 123
16	Sub Task 7-1	1 day	Mon 4/18/05	Mon 4/18/05		George ABC
17	sub task 7-2	1 day	Mon 4/18/05	Mon 4/18/05		Thomas 123
18	Summary Tasks 1	1 day	Mon 4/18/05	Mon 4/18/05		Mary James[50%]
19	Summary Task 1	1 day	Mon 4/18/05	Mon 4/18/05		
20	Summary Tasks 2	2 days	Mon 4/18/05	Tue 4/19/05		
21	Sub Task 1	2 days	Mon 4/18/05	Tue 4/19/05		Mary James[50%]

Testing Contents: Content can be tested as follows:

1. Assign no resource to any task and generate report
2. Assign resources and generate report
3. Rename resources and generate report
4. Unallocate resources and generate report
5. Assign multiple resources and generate report

Baseline Vs Expected

- Have a base line set and compare it with the actual result or output file that is obtained.
- This process of comparison can be automated using tools.
- The results will indicate the as to whether the comparison has passed or failed

Testing Schema

The schema should be checked by inputting multiple values and check for the correctness of the schema set.

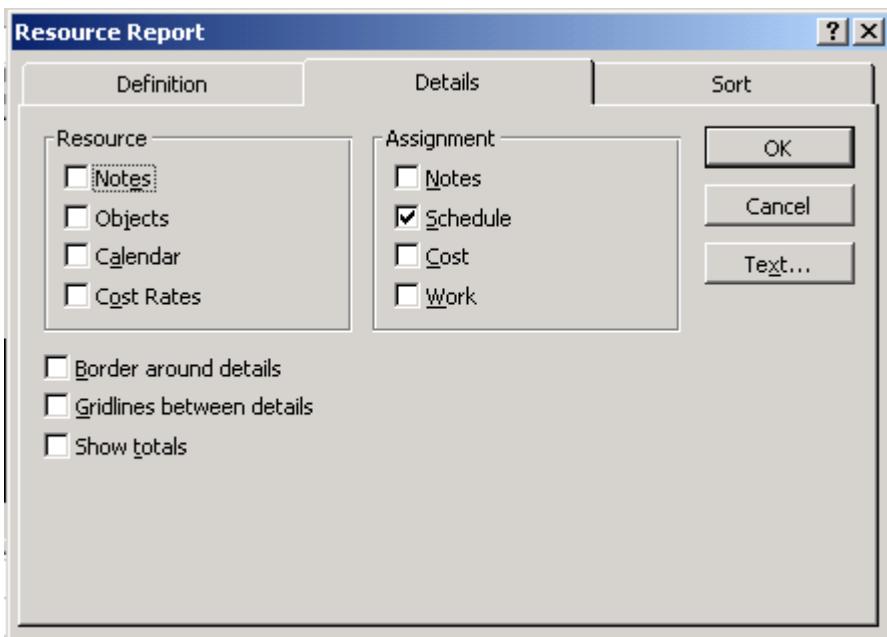
This testing should be done at the design level of the report itself.

The schema testing can be applied to the above said example as follows

1. Assign multiple resources to same task and generate report
2. Assign multiple tasks to one resource and generate report

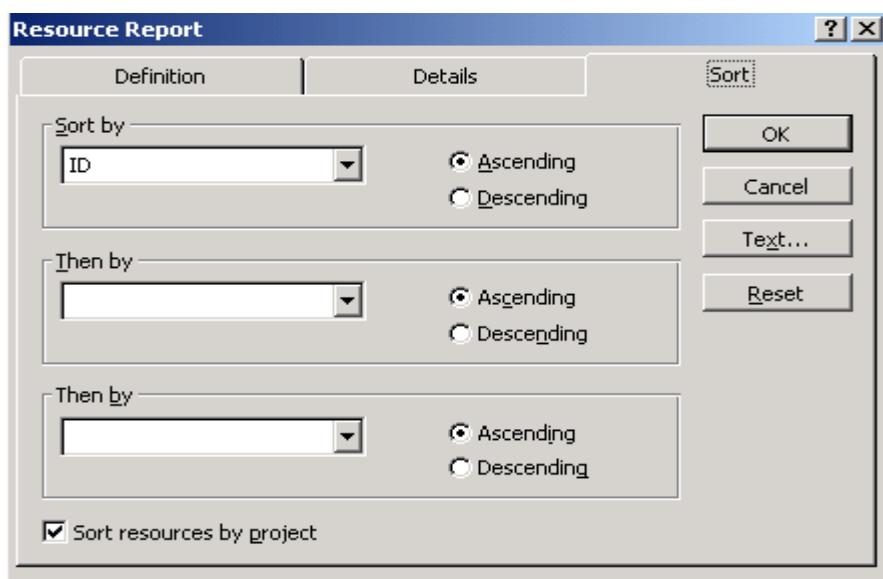
Testing Format & Layout

The format and layout of the above said report can be tested for change in the format and layout in the ways as below.



Testing User defined filters or sorting

While generating reports the user can input filters or sort orders and generate reports as required



Case Study – Import Export Testing, Help System Testing & Installation Testing

Case Study – Import Export Testing:

Example:

Import – Export: MS Project and MS Outlook.

The Import Export test cases should be discussed here:

File Name – Worksheet in ImportExport Testing.xls

Case Study – Help System testing:

Consider the help being provided by Windows Notepad.

As discussed so far in the presentation.

1. User Interface
2. Table of Contents
3. Index
4. Search
5. Contents

Approach to Testing

Inputs Required: Design Guidelines, Specifications

To test the help provided by application under test:

1. Study the help provided by the application under test.
2. Study the design guidelines are studied to form our expectations.
3. Study the Specifications provided for the application
4. Develop the test cases.

Output: Test Cases

Design Guidelines

Guidelines document would help us form the expectations for testing the help system by laying down a set of design guidelines for what to test in a Help System.

It would also specify the elements of the help system, their organization and their designing concepts.

Note – Discuss Design Guidelines here

File Name - Guidelines for a Help System.doc

Specifications

Specifications document would help us understand the features of the Help provided by the application.

It would help to form the base for comparing the expected results with and in turn for writing test cases.

Note – Discuss Specifications here

File Name - Specification For notepad Validations.doc

Test cases

The test cases for the testing the help provided by the Notepad would be created.

Discuss Test Cases validate help system for Notepad here

File Name - Worksheet in Help Validation.xls

Installation Testing - Case Study – Dreamweaver 8

Discuss Installation Test Cases here

File Name - Worksheet in Installer Testing_QTP.xls

Lab 1. Task Based Approach Basics

Goals	<ul style="list-style-type: none"> Understand the process of creating Test Cases using Tasked Based Approach Learn to apply task based approach for writing Test cases Learn to prepare finite set of Test cases
Time	180 min

Note:

- Refer to the Use Cases written in the Use Case Level Test Cases module to perform the lab on Task Based Approach
 - Login – Administrator**
 - Add Exam Details**
 - Register (New User/Applicant)**
- The participant is expected to identify Use Case Scenario, Form Level Test Cases & Field Level Test Cases

Use Case	Form Level Validations	Field Level Validation
Login - Administrator	Form Level Validations and Use Case level validations should be identified with help of use case written in Use Case Level Test Cases Module Labs & RVFD Banking Exam Portal case study	<ol style="list-style-type: none"> All fields on the Login web page are mandatory The User Name field can accept only alphabets The User Name field should accept maximum 10 alphabets Passwords must have at least six characters Passwords must use at least three of the four available character types: lowercase letters, uppercase letters, numbers, and symbols
Add Exam Details	Form Level Validations and Use Case level validations should be identified with help of use case written in Use Case Level Test Cases Module Labs & RVFD Banking Exam Portal case study	<ol style="list-style-type: none"> All fields are mandatory on the form Exam Name should accept only character Data Exam Code should contain only 6 digits Bank Name should accept only alphabets Commencement of Online Registration field should accept only date type of value Closure of Online Application should accept only date type of values Exam Date field should accept only date type of values Exam description field can accept alpha numeric data up to 100 characters Exam description field can accept only &, *,

		<p>@, #, % as a special characters</p> <p>10. Examination Fees field can accept only numeric data</p>
Register (New User/Applicant)	Form Level Validations and Use Case level validations should be identified with help of use case written in Use Case Level Test Cases Module Labs & RVFD Banking Exam Portal case study	<p>1. All fields are mandatory fields on the form</p> <p>2. First Name, Last Name and Middle Name should contain only alphabets</p> <p>3. Mobile Number should accept only 10 Digits</p> <p>4. Confirm Mobile Number should accept only 10 digits</p> <p>5. Email Address can accept alphanumeric values</p> <p>6. Email Address can accept only one special character i.e. @ in its value</p> <p>7. Email Address should accept data in a proper format of being valid email id e.g. someone@domain.com</p> <p>8. The domain name can be gmail.com, yahoo.com, Hotmail.com in Email Address</p> <p>9. Date of Birth should be a valid date</p> <p>10. Gender can be selected as Male or Female</p> <p>11. Marital Status can be selected as Married or Unmarried</p> <p>12. Graduation/Equivalent passes can contain values as Graduate/ Post Graduate</p> <p>13. Degree/Stream/Subject can contain the values like Commerce, Arts, Science</p> <p>14. Year of Passing should accept only valid date value</p> <p>15. % of Marks should accept only numeric or decimal data</p> <p>16. The signature file size should be between 50 kb to 100 kb</p> <p>17. The image file size should not be more than 150 kb</p>