

# Analysis of Web Testing Tools - Ranorex and TestComplete

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## 1. INTRODUCTION

The web based testing tools Ranorex and TestComplete automates the UI testing of web applications without the need to write any code. The *Ranorex* tool automates the UI of web applications by recording the UI actions without the need of writing the testcases. And the *TestComplete* is an automated testing tool that allows to test the web applications to verify that they work correctly, by recording and playing the web page navigation. The goals of the project is to analyze the tools by observing their various features, finding out their strengths and weakness, and their limitations.

### 1.1.1 Ranorex

#### 1.1.1.1 Ranorex Recorder

This tool lets you record test cases by recording and playing back a user's actions as they navigate through the web page during the testing process. In the recording mode, as the user browses the web page, the recorder records the actions in the action table. It offers validation mode during the recording sessions. Recorded actions and their associated UI elements are saved as individual items and therefore can be easily accessed. Some of the actions that define the test cases are: Mouse, Mouse wheel, Touch event, Swipe Gesture, Shortcut, Key Sequence, Validation, Invoke Action, Get Value, Set Value, Open Browser.

#### 1.1.1.2 Ranorex Spy

This tool provides all the required functionality to explore the website, including their control and UI elements. Once started it contains all running applications that are running currently. UI elements of an application are put through the scanner using this tool. It allows the tester to analyze/validate the application so as to identify various UI elements with ease.

#### 1.1.1.3 Ranorex Repository

Under Ranorex Repository we can find all the UI elements that will be analyzed. This tool is integrated

with Ranorex Spy and Ranorex Recorder and is a part of Ranorex Studio. Using this repository logical mapping of the UI elements can be created. For each test project a Repository .rxrep file is created. It is a single point of change how the objects are identified in the project. From this, the user interface elements can be highlighted on the desktop for more clarity. We can create different repositories for different test cases. The elements in the repository are mapped to the 'Repository Element' column in the Action table.

### 1.1.2 TestComplete

TestComplete user interface is organized into a number of panels such as Project Explorer, Workspace, and Test Visualizer.

#### TestComplete Recorder:

TestComplete shows the Recording toolbar when recording a test which is used to control the recording process. The toolbar disappears when the recording is stopped. The recorder has the buttons record, pause, stop and add check. *Record* blinks to signal that TestComplete is recording. *Pause* button pauses the recording. To resume, record button can be clicked. *Stop* button stops recording. *Add check* pauses the recording to add a checkpoint. On clicking record button, it switches to Recording mode, and it records the actions creating new *script routine* where the test action will be saved. When recording tests for web applications, we can create checkpoints that verifies the operation that is performed during testing. Some of the test actions are Menu Action, Run Test, Find Object, Process Action, Run Keyword Test, and Run Tested App.

## 1.2 OVERVIEW OF ANALYZED PROBLEMS

### 1.2.1 Ranorex

Automated test cases are created on following activities:

#### 1.2.1.1 Login to WebWordPressLibrary

This activity performs the action of logging into WordPress library by entering login id and password.

#### 1.2.1.2 Publish new post

This activity performs the action of publishing new post from the backend with header and the content.

#### 1.2.1.3 Validate post

This activity performs the action of validating the post on the frontend.

#### 1.2.1.4 Delete post

This activity performs the action of deleting the post from the backend.

### 1.2.2 TestComplete

We used the sample *Web Orders application* <http://support.smartbear.com/samples/testcomplete12/weborders/>. This application displays a list of orders and contains special functions for adding, deleting, and modifying orders.

#### 1.2.2.1 Edit order details

The order information can be edited by clicking on Edit button. The user can edit the details of an entry and save it.

#### 1.2.2.2 Add Order Activity

This activity enables the user to add the order and save it, which can be done by clicking *Order* tab that includes the product information (product, Quantity, Price per unit, Discount, Total), Address Information (Customer name, Street, City, State, Zip) and Payment information (card type, card No, Expire date).

#### 1.2.2.3 Delete order Activity

This allows the user to delete the data entry, which consists of customer name, product name, date, street city, state, zip, card, cardNumber, Exp.

#### 1.2.2.4 View all products

On clicking the *view all products* tab user can view all the products that are listed with details such as product name, price, discount.

## 2. OBSERVATIONS

### 2.1. Installing the tools

#### 2.1.1 Installation of Ranorex

Ranorex studio must be installed to do the test automation process. This tool can be downloaded from

<https://www.ranorex.com/free-trial.html>. Latest version of Ranorex is Ranorex 7.2. the trial version comes for 30 days. Later the user has a choice of buying runtime license or Premium license. The recommended minimum system requirements for running Ranorex (Runtime, Spy, Recorder, License Manager, Studio and Remote Agent) are:  
Processor: 2 GHz  
Memory: 512 MB

#### 2.1.2 Installing the TestComplete

To do the test automation process we need TestComplete tool which can be downloaded from <https://smartbear.com/product/testcomplete/overview/>. The latest version of TestComplete is TestComplete 12.41. It supports Windows 7 or later versions.

*The minimal system requirements are:*

Processor : Intel Core 2 Duo 2 GHz or higher,  
Memory: 2 GB of RAM, 1 GB of free disk space for installation,  
Display Resolution : 1024 × 768 or higher.

## 2.2 LEARNING THE TOOLS

**Ranorex:** We choose set of activities of various web applications to analyze Ranorex tool. This tool allows us to record test cases by recording and playing back a user's actions as they navigate through the web application during the testing process. We can use the Ranorex Spy to analyze the structure and the content of a web application and to see which information is accessible during automation. Analysis will also include in finding out the strengths and weaknesses of the tool by extracting various information about the tool which are: To what extent the tool supports Cross-Browser Testing and Recordings.

**TestComplete:** We can record and play web page navigation, logging in and out, filling out and submitting forms, searching product catalogs, placing orders and other operations Using TestComplete we record and run test, we can create checkpoints and we can see the test results. It can automatically launch the application during test recording and test runs.

## 2.3 ANALYZING THE PROBLEMS USING THE TOOLS

### 2.3.1 Ranorex

Test will be performed for different actions performed. The task is to login to Wordpress, publish a post, validate the post and delete it again afterwards

### 2.3.1.1 Test case to StartWatchingPopup (WebWordPressLibrary) and OpenBrowser (WebWordPressLibrary)

While clicking on record button which is present on Ranorex studio the activities done get recorded and test case is generated automatically by Ranorex. Following actions are present in action table:

Action 1: Starting the popup to go to WordPress

Action 2: opening the website using Internet Explorer browser

**Test case Run:** After Recoding we can run the test case by clicking on Run Button. Running the test case opens the application on the device and applies the test case. Final report is generated telling StartWatchingPopup and OpenBrowser passed the test case.

Time	Level	Category	Message
00:00.880	Info	Data	Current variable values: \$varLoginURL = 'http://webtest.ranorex.org/wp-admin/edit.php'
00:00.980	Info	Website	Opening web site 'http://webtest.ranorex.org' with browser 'IE' in maximized mode.
00:07.687	Info	User	
00:07.687	Info	Invoke Action	Invoking Navigate(variable \$varLoginURL) on item 'WordPress_Demo'.

### 2.3.1.2 Test Case to Login (WebWordPressLibrary) Log in to back-end

While clicking on record button which is present on Ranorex studio the activities done get recorded and test case is generated automatically by Ranorex. Following actions are present in action table:

Action 1: Entering the user name and password

Action 2: Logging into the website

**Test case Run:** Running the test case opens the application on the device and applies the test case. Final report is generated telling login activity passed the test case.

Time	Level	Category	Message
00:08.709	Info	Data	Current variable values: \$varPassword = 'ranorex', \$varUsername = 'ranorex webtest new'
00:08.772	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Loginform.UserLogin' at Center.
00:10.358	Info	Set Value	Setting attribute Value to '\$varUsername' on item 'WordPress_Demo.Loginform.UserLogin'.
00:10.543	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Loginform.UserPass' at Center.
00:11.559	Info	Set Value	Setting attribute Value to '\$varPassword' on item 'WordPress_Demo.Loginform.UserPass'.
00:11.744	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Loginform.WpSubmit' at Center.
00:13.060	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Dashboard' at Center.

### 2.3.1.3 Test case to NavigateNewPost (WebWordPressLibrary)

While clicking on record button which is present on Ranorex studio the activities done get recorded and test case is generated automatically by Ranorex. Following actions are present in action table:

Action 1: Navigate to add the new post

**Test case Run:** Running the test case opens the application on the device and applies the test case. Final report is generated telling Navigate activity passed the test case.

Time	Level	Category	Message
00:15.078	Info	Invoke Action	Invoking EnsureVisible() on item 'WordPress_Demo.Posts'.
00:15.595	Info	Mouse	Mouse None Move item 'WordPress_Demo.Posts' at Center.
00:16.448	Info	Mouse	Mouse None Move item 'WordPress_Demo.AllPosts' at Center.
00:17.614	Info	Mouse	Mouse Left Click item 'WordPress_Demo.AddNew' at Center.

#### 2.3.1.4 Test case to PublishNewPost (WebWordPressLibrary)

While clicking on record button which is present on Ranorex studio the activities done get recorded and test case is generated automatically by Ranorex. Following actions are present in action table:

Action 1: Entering the post title

Action 2: Entering the post content

Action 3: Publish the post

**Test case Run:** Running the test case opens the application on the device and applies the test case. Final report is generated telling PublishNewPost activity passed the test case.

Time	Level	Category	Message
00:18.866	Info	Data	Current variable values: \$varPostTitle = 'Ranorex is awesome!', \$varPostContent = 'This is a demo-post automated with Ranorex'
00:18.934	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Title' at Center.
00:20.935	Info	Set Value	Setting attribute Value to '\$varPostTitle' on item 'WordPress_Demo.Title'.

Time	Level	Category	Message
00:21.183	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Content' at 199;67.
00:22.521	Info	Set Value	Setting attribute TagValue to '\$varPostContent' on item 'WordPress_Demo.Content'.
00:22.768	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Publish' at 43;14.
00:22.937	Warning	Internet Explorer	Please make sure that you have the Ranorex Addon installed and enabled in Internet Explorer. Otherwise Ranorex UI element identification might be very slow. Process: 'iexplore' (pid 9388) The following website provides more information on this technology limitation: <a href="https://www.ranorex.com/help/v7.2/technology-instrumentation/general-troubleshooting#GeneralTroubleshooting-Browser(MozillaFirefox,GoogleChrome,AppleSafari,MicrosoftInternetExplorer)">https://www.ranorex.com/help/v7.2/technology-instrumentation/general-troubleshooting#GeneralTroubleshooting-Browser(MozillaFirefox,GoogleChrome,AppleSafari,MicrosoftInternetExplorer)</a> (This message is only shown once per report.)

#### 2.3.1.5 Test case to GetPostURL (WebWordPressLibrary) Read out permalink of that post

While clicking on record button which is present on Ranorex studio the activities done get recorded and test case is generated automatically by Ranorex. Following actions are present in action table:

Action 1: Getting the post url.

**Test case Run:** Running the test case opens the application on the device and applies the test case. Final report is generated telling GetPostURL activity passed the test case.

Time	Level	Category	Message
00:34.201	Info	Data	Current variable values: \$varPostURL = "
00:34.286	Info	Get Value	Getting attribute 'InnerText' from item 'WordPress_Demo.SamplePermalink' and assigning its value to variable 'varPostURL'.

#### 2.3.1.6 Test case to LogOut (WebWordPressLibrary)

While clicking on record button which is present on Ranorex studio the activities done get recorded and test case is generated automatically by Ranorex. Following actions are present in action table:

Action 1: Logging out of the website.

**Test case Run:** Running the test case opens the application on the device and applies the test case. Final report is generated telling LogOut activity passed the test case.

Time	Level	Category	Message
00:36.202	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Dashboard' at Center.
00:37.572	Info	Mouse	Mouse None Move item 'WordPress_Demo.MyAccount1' at Center.
00:38.905	Info	Mouse	Mouse Left Click item 'WordPress_Demo.LogOut' at Center.
00:40.089	Info	Delay	Waiting for 2s.

#### 2.3.1.7 Test case to ValidatePost (WebWordPressLibrary) Validate the post from the front-end


While clicking on record button which is present on Ranorex studio the activities done get recorded and

test case is generated automatically by Ranorex. Following actions are present in action table:

Action 1: Go to the frontend

Action 2: Validate the post on the frontend.

Test case Run: Running the test case opens the application on the device and applies the test case. Final report is generated ValidatePost activity passed the test case.

Time	Level	Category	Message
00:42.173	Info	Data	Current variable values: \$varPostURL = 'http://webtest.ranorex.org/?p=35629', \$varPostContent = 'This is a demo-post automated with Ranorex', \$varPostTitle = 'Ranorex is awesome!'
00:42.258	Info	Invoke Action	Invoking Navigate(variable \$varPostURL) on item 'WordPress_Demo'.
00:42.889	Info	Validation	Validating AttributeEqual (InnerText=\$varPostTitle) on item 'WordPress_Demo.Pagetitle'.
00:43.106	Success	Validation	Attribute 'InnerText' of element for item 'WebWordPressLibraryRepository.WordPress_Demo.Pagetitle' does match the specified value.
00:43.175	Info	Invoke Action	Invoking EnsureVisible() on item 'WordPress_Demo.Pagetitle'.
00:43.607	Info	User	
00:43.607	Info	Validation	Validating AttributeEqual (InnerText=\$varPostContent) on item 'WordPress_Demo.PostContent'.
00:44.493	Success	Validation	Attribute 'InnerText' of element for item 'WebWordPressLibraryRepository.WordPress_Demo.PostContent' does match the specified value.
00:44.562	Info	Invoke Action	Invoking EnsureVisible() on item 'WordPress_Demo.PostContent'.

Time	Level	Category	Message
00:46.181	Info	User	https://www.ranorex.com/ranorex-ide/
00:46.181	Info	Delay	Waiting for 2s.

### 2.3.1.8 Test case to NavigateLogin (WebWordPressLibrary)

While clicking on record button which is present on Ranorex studio the activities done get recorded and test case is generated automatically by Ranorex. Following actions are present in action table:  
 Action 1: Go back to the login page.  
 Test case Run: Running the test case opens the application on the device and applies the test case. Final report is generated telling NavigateLogin activity passed the test case.

Time	Level	Category	Message
00:48.249	Info	Data	Current variable values: \$varLoginURL = 'http://webtest.ranorex.org/wp-admin/edit.php'
00:48.328	Info	Set Value	Setting attribute PageUrl to '\$varLoginURL' on item 'WordPress_Demo'.

### 2.3.1.9 Test case to Login (WebWordPressLibrary) Log in again

While clicking on record button which is present on Ranorex studio the activities done get recorded and test case is generated automatically by Ranorex. Following actions are present in action table:  
 Action 1: Login to the website.  
 Test case Run: Running the test case opens the application on the device and applies the test case. Final report is generated telling Login activity passed the test case.

Time	Level	Category	Message
00:48.481	Info	Data	Current variable values: \$varPassword = 'ranorex', \$varUsername = 'ranorex webtest new'
00:48.546	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Loginform.UserLogin' at Center.
00:50.514	Info	Set Value	Setting attribute Value to '\$varUsername' on item 'WordPress_Demo.Loginform.UserLogin'.
00:50.750	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Loginform.UserPass' at Center.
00:51.814	Info	Set Value	Setting attribute Value to '\$varPassword' on item 'WordPress_Demo.Loginform.UserPass'.
00:52.006	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Loginform.WpSubmit' at Center.
00:53.198	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Dashboard' at Center.

### 2.3.1.10 Test case to DeletePost (WebWordPressLibrary)

While clicking on record button which is present on Ranorex studio the activities done get recorded and test case is generated automatically by Ranorex. Following actions are present in action table:  
 Action 1: Go to backend.  
 Action 2: Go to recent post and select the post to delete.  
 Action 3: Click on Edit Post.  
 Action 4: Delete the post by clicking on move to trash.  
**Test case Run:** Running the test case opens the application on the device and applies the test case. Final report is generated telling DeletePost activity passed the test case.

Time	Level	Category	Message
00:55.116	Info	Data	Current variable values: \$varPostURL = 'http://webtest.ranorex.org/?p=35629'
00:55.169	Info	Invoke Action	Invoking Navigate(variable \$varPostURL) on item 'WordPress_Demo'.
00:56.116	Info	Mouse	Mouse Left Click item 'WordPress_Demo.RecentPost' at Center.
00:57.403	Info	Mouse	Mouse Left Click item 'WordPress_Demo.EditPost' at Center.
00:58.754	Info	Mouse	Mouse Left Click item 'WordPress_Demo.MoveToTrash' at Center.
01:00.907	Info	Delay	Waiting for 2s.

#### 2.3.1.11 Test case to LogOut (WebWordPressLibrary) Log out of back end

While clicking on record button which is present on Ranorex studio the activities done get recorded and test case is generated automatically by Ranorex. Following actions are present in action table:

Action 1: Go to Dashboard

Action 2: Go to my Account

Action 3: Logout from the account

**Test case Run:** Running the test case opens the application on the device and applies the test case. Final report is generated telling LogOut activity passed the test case.

01:03.009	Info	Mouse	Mouse Left Click item 'WordPress_Demo.Dashboard' at Center.
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01:04.158	Info	Mouse	Mouse None Move item 'WordPress_Demo.MyAccount1' at Center.
01:10.583	Info	Mouse	Mouse Left Click item 'WordPress_Demo.LogOut' at Center.
01:11.784	Info	Delay	Waiting for 2s.

#### 2.3.1.12 Test case to CloseBrowser (WebWordPressLibrary)

While clicking on record button which is present on Ranorex studio the activities done get recorded and test case is generated automatically by Ranorex. Following actions are present in action table:

Action 1: Close the browser.

**Test case Run:** Running the test case opens the application on the device and applies the test case. Final report is generated telling CloseBrowser activity passed the test case.

Time	Level	Category	Message
01:13.847	Info	Application	Closing application containing item 'WordPress_Demo'

## 2.3.2 TestComplete

**Testing is done on sample web order application.**

### 2.3.2.1 Test Case on Edit Order Details :

1) Launch the desired browser and navigate it to the <http://support.smartbear.com/samples/testcomplete12/weborders/> webpage.

2) Login in to the application using the information shown at the bottom of the page:

Username: Tester

Password : test

Click Login to switch to the main page of the application

3) Now, browser shows the default page of the application which contains existing orders. Modify



one of the orders: click **Edit** icon next to the order made by *Samuel Clemens*.

4) Click with in the customer name text box and enter “Sandhya” as the customer name.

5) click **update** , the application will update the customer list shown in the main window.

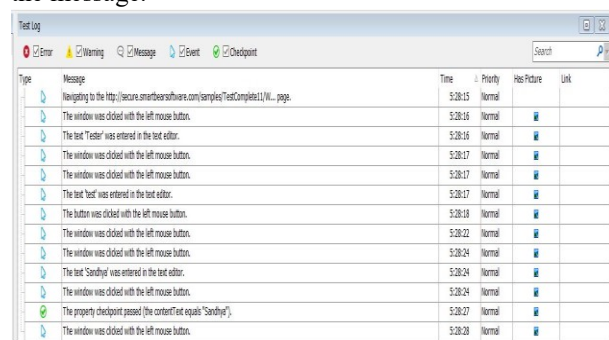
6) **Creating checkpoints:** Insert a **Checkpoint** (comparison command) into the test. It will verify that application customer list displays the modified name – Sandhya. Click on the Recording toolbar and enable checkpoints. Hover the mouse pointer over the “Sandhya” cell for the **Name** column. TestComplete will highlight it with a red frame. Move the pointer to the “+ icon ” at the top right corner of the frame. Click **check other properties** to create a checkpoint for a property that is not in the list. Click on **contentText**, the **Value** column specifies the baseline data against checkpoint will compare the actual data during the test run. Click Finish to complete Checkpoint creation.

7) click **Logout** link in the upper-right corner of the page.

8) Close the browser and press **stop** on the recording toolbar to stop recording. TestComplete will process the recorder test commands and save them to a test.

**TestCase Run:** After recording we can run the testcase by clicking on **RunTest** button , TestComplete simulates user actions. The TestComplete keeps a complete log of all operations performed during testing. The **log** window shows the results of one test run at a time

**Keyword Test Log:** The log contains error, warning, informative and other types of messages. The log specifies the type of message, and time that each action performed, and additional text and images along with the message.



Type	Message	Time	Priority	Has Picture	Link
	Navigating to the http://secu... (truncated)	5:28:15	Normal		
	The window was closed with the left mouse button.	5:28:16	Normal		
	The text "Tester" was entered in the test editor.	5:28:16	Normal		
	The window was closed with the left mouse button.	5:28:17	Normal		
	The window was closed with the left mouse button.	5:28:17	Normal		
	The text "test" was entered in the test editor.	5:28:17	Normal		
	The button was clicked with the left mouse button.	5:28:18	Normal		
	The window was closed with the left mouse button.	5:28:22	Normal		
	The window was closed with the left mouse button.	5:28:24	Normal		
	The text "Sandhya" was entered in the test editor.	5:28:24	Normal		
	The window was closed with the left mouse button.	5:28:24	Normal		
	The property checkpoint passed (the contentText equals "Sandhya").	5:28:27	Normal		
	The window was closed with the left mouse button.	5:28:28	Normal		

### 2.3.2.2 Test Case on Add Order Activity :

1) Launch the browser and enter login credentials for we order application.

2) Click on the **Order** tab to the left.

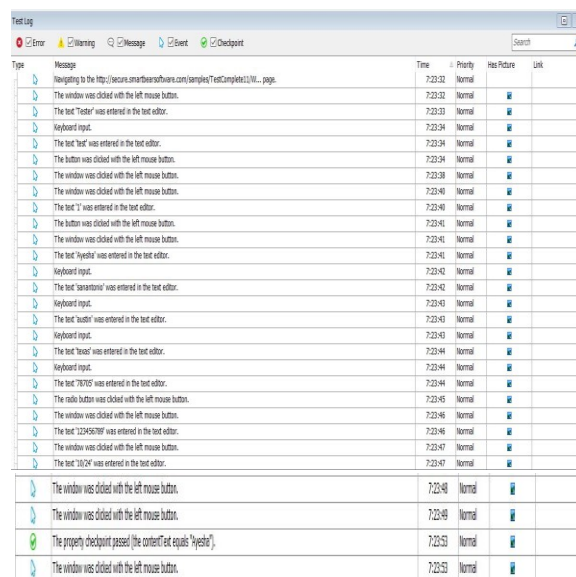
3) Enter Product information, Address information and payment information, and then click on **Process** tab.

4) Click on **view all orders** tab to the left and to add checkpoint to the placed order select **name** column , it will highlight with red frame and click on setting button and click **contentText** tab. Then checkpoint will be added.

5) Click **Logout** link in the upper-right corner of the page.

6) Close the browser and press **stop** on the recording toolbar to stop recording. TestComplete will process the recorder test commands and save them to a test.

### Keyword Test Log:



Type	Message	Time	Priority	Has Picture	Link
	Navigating to the http://secu... (truncated)	7:23:32	Normal		
	The window was closed with the left mouse button.	7:23:33	Normal		
	The text "Tester" was entered in the test editor.	7:23:33	Normal		
	Keyboard input.	7:23:34	Normal		
	The text "test" was entered in the test editor.	7:23:34	Normal		
	The button was clicked with the left mouse button.	7:23:34	Normal		
	The window was closed with the left mouse button.	7:23:38	Normal		
	The text "I" was entered in the test editor.	7:23:40	Normal		
	The button was clicked with the left mouse button.	7:23:40	Normal		
	The window was closed with the left mouse button.	7:23:40	Normal		
	The text "Hysteria" was entered in the test editor.	7:23:40	Normal		
	Keyboard input.	7:23:40	Normal		
	The text "satanstool" was entered in the test editor.	7:23:40	Normal		
	Keyboard input.	7:23:40	Normal		
	The text "hustle" was entered in the test editor.	7:23:40	Normal		
	Keyboard input.	7:23:40	Normal		
	The text "beast" was entered in the test editor.	7:23:40	Normal		
	Keyboard input.	7:23:40	Normal		
	The text "78765" was entered in the test editor.	7:23:40	Normal		
	The main button was clicked with the left mouse button.	7:23:40	Normal		
	The window was closed with the left mouse button.	7:23:40	Normal		
	The text "123456789" was entered in the test editor.	7:23:40	Normal		
	The window was closed with the left mouse button.	7:23:47	Normal		
	The text "1012" was entered in the test editor.	7:23:47	Normal		
	The window was closed with the left mouse button.	7:23:48	Normal		
	The window was closed with the left mouse button.	7:23:49	Normal		
	The property checkpoint passed (the contentText equals "Hysteria").	7:23:53	Normal		
	The window was closed with the left mouse button.	7:23:53	Normal		

### 2.3.2.3 TestCase on Delete order Activity

1) Launch the browser and enter login credentials for we order application.

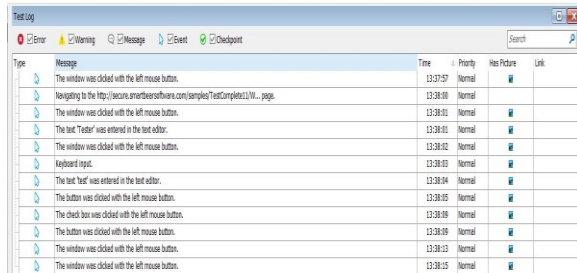
2) Select checkbox to delete specific order, and click on **Delete Selected** button.

3) Click **Logout** link in the upper-right corner of the page.

4) Close the browser and press **stop** on the recording toolbar to stop recording. TestComplete will process the recorder test commands and save them to a test.



## Keyword Test log:

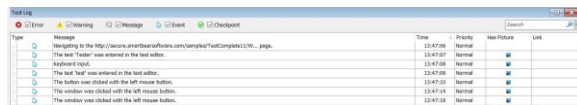


Type	Message	Time	Priority	Has Picture	Link
	The window was clicked with the left mouse button.	13:37:57	Normal		
	Navigating to the http://www.imdb.com/sample/TestComplete/Nav... page.	13:38:00	Normal		
	The window was clicked with the left mouse button.	13:38:01	Normal		
	The test 'Tester' was entered in the test editor.	13:38:01	Normal		
	The window was clicked with the left mouse button.	13:38:02	Normal		
	Keyboard input.	13:38:03	Normal		
	The test 'test' was entered in the test editor.	13:38:04	Normal		
	The button was clicked with the left mouse button.	13:38:05	Normal		
	The check box was clicked with the left mouse button.	13:38:09	Normal		
	The button was clicked with the left mouse button.	13:38:09	Normal		
	The window was clicked with the left mouse button.	13:38:13	Normal		
	The window was clicked with the left mouse button.	13:38:15	Normal		

### 2.3.2.4 View all products activity:

- 1) Launch the browser and enter login credentials for we order application.
- 2) Click on the **View all products tab** to the left which lists all list of products that are available.
- 3) Click **Logout** link in the upper-right corner of the page.
- 4) Close the browser and press **stop** on the recording toolbar to stop recording. TestComplete will process the recorder test commands and save them to a test.

## Keyword Test log:



Type	Message	Time	Priority	Has Picture	Link
	Navigating to the http://www.imdb.com/sample/TestComplete/Nav... page.	13:47:06	Normal		
	The test 'Tester' was entered in the test editor.	13:47:07	Normal		
	Keyboard input.	13:47:08	Normal		
	The test 'test' was entered in the test editor.	13:47:09	Normal		
	The button was clicked with the left mouse button.	13:47:11	Normal		
	The window was clicked with the left mouse button.	13:47:14	Normal		
	The window was clicked with the left mouse button.	13:47:15	Normal		

## 2.3.3 Application used in common for Ranorex and TestComplete

The application used in common for both the tools is [www.imdb.com](http://www.imdb.com). The test is performed on this application using both the tools to compare the tools and find the differences between them find the strengths and weakness of both the tools. In the testcase the website is opened and a movie is searched, validation is also performed on the movies name and the director's name.

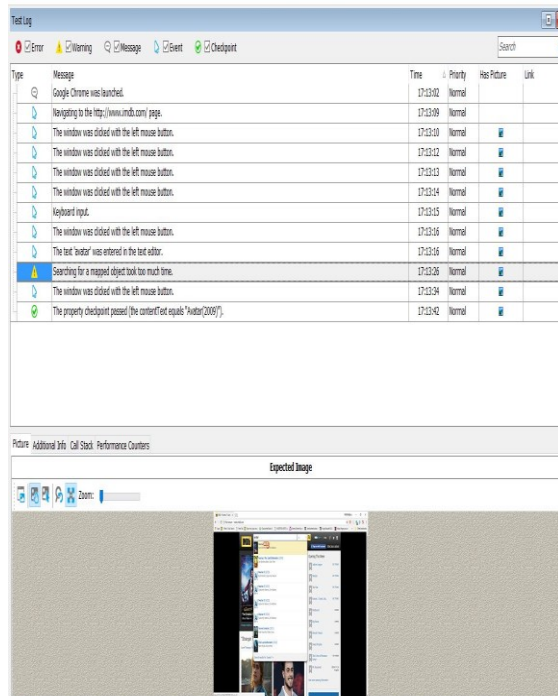
**Test case Run:** Running the test case opens the application on the device and applies the test case. Final report is generated telling that activity passed the test case.

Following are the results of test case run on both the tools.

## Ranorex TestLog

Time	Level	Category	Message
00:03.058	Info	Web site	Opening web site 'www.imdb.com' with browser 'chrome' in normal mode.
00:03.318	Info	Mouse	Mouse Left Click item 'TMDbMoviesTVAndCelebritiesIMDb.NavbarQuery' at 168;24.
00:07.779	Info	Keyboard	Key sequence 'avatar' with focus on 'TMDbMoviesTVAndCelebritiesIMDb.NavbarQuery'.
00:09.749	Info	Mouse	Mouse Left Click item 'TMDbMoviesTVAndCelebritiesIMDb.HttpsImagesNaSslImagesAmazonCom' at 14;48.
00:11.538	Info	Mouse	Mouse Left Click item 'TMDbMoviesTVAndCelebritiesIMDb.Avatar' at 49;16.
00:15.457	Info	Validation	Validating AttributeEqual (InnerText='Avatar ') on item 'TMDbMoviesTVAndCelebritiesIMDb.Avatar'.
00:15.796	Success	Validation	Attribute 'InnerText' of element for item 'demoRepository.IMDbMoviesTVAndCelebritiesIMDb.Avatar' does match the specified value.
00:15.908	Info	Validation	Validating AttributeEqual (InnerText='James Cameron') on item 'TMDbMoviesTVAndCelebritiesIMDb.JamesCameron'.
00:16.277	Success	Validation	Attribute 'InnerText' of element for item 'demoRepository.IMDbMoviesTVAndCelebritiesIMDb.JamesCameron' does match the specified value.
00:16.417	Info	Mouse	Mouse Left Click item 'Avatar2009IMDbGoogleChrome' at 1895;30.

## TestComplete KeyTest Log



## 2.4 ANALYSIS OF RESULTS

### 2.4.1 Comparison

TestComplete	Ranorex
Website URL must be entered after recording starts	Website URL must be entered before recording starts
Manual settings need to be done to add a <b>checkpoint</b> .	<b>Validation</b> is a built in button in Ranorex recorder
Automatically captures screenshots	Manually captures the screenshot
Execution time greater than 20 seconds per test case	Execution time is less than 20 seconds per test case.
Test steps displays on each individual page	Test steps display on same page

No debugging logs.	Opens a console window and displays debugging logs
Expensive than Ranorex	Cheaper than TestComplete
Supports JavaScript, C#, and other scripting languages	Supports C#, python, VB.NET
No charts are generated	Test reports offer more information in the form of charts

## 2.4.2 STRENGTH AND WEAKNESS

### 2.4.2.1 Strength and weakness of Ranorex

**Strengths:** Ranorex is easy to install, supports Desktop, web as well as mobile testing. Ranorex offers a dedicated UI element repository to arrange and organize all UI elements needed during automation. Additionally, the Ranorex Spy tool simplifies creating and editing Xpath expressions using a dedicated path editor. It also supports cross browser testing.

**Weakness:** Purely depends on availability of the UIComponent. Example, if an item present on the action table is deleted and is present in multiple actions the test case fails to execute as it does not find the item during the process of scanning.

### 2.4.2.2 Strength and weakness of TestComplete

**Strengths:** Testcomplete has easy installation process supports desktop, web and mobile testing. And also supports Multi Browser testing and captures the screenshots automatically *for* each action of the test case.

**Weakness:** Test reports can be generated in the form of charts.

## 2.5 SUGGESTED IMPROVEMENTS

**Ranorex:** Suggested improvement would be to make it possible to use a testcase more than once in a testsuite just as it possible to reuse a recording or code module.

**TestComplete:** Test reports can be made by generating the graphical representations like charts which makes easier to understand the test results.

### 3 CONCLUSION

TestComplete and Ranorex tools helps to automate UI testing by recording and replaying actions without the need to write any code. The automated test recorder in both the tools records the user actions and plays it later. These tools ensure reusability that helps in generating the test case once and running it multiple times.

### 4 REFERENCES

- [1]<http://www.ranorex.com/Documentation/Ranorex-Tutorial.pdf>
- [2] [www.ranorex.com](http://www.ranorex.com)
- [3] [webtest.ranorex.org](http://webtest.ranorex.org)
- [4] [webtest.ranorex.org/wp-admin.php](http://webtest.ranorex.org/wp-admin.php)
- [5]<https://smartbear.com/product/testcomplete/overview/>
- [6]<https://support.smartbear.com/testcomplete/docs/tutorials/getting-started/index.html>
- [7]<http://support.smartbear.com/samples/testcomplete12/weborders/>.

### Screenshot of Testcomplete IDE

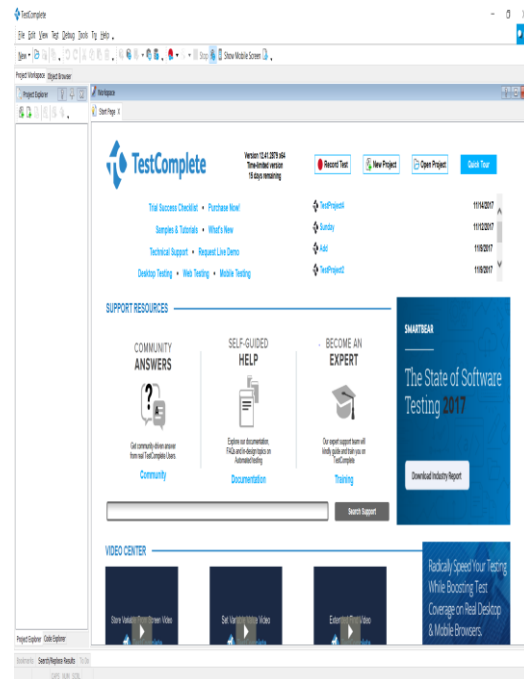


Fig: TestComplete Outlook

### APPENDIX

#### A.1 Screen Shots

##### A.1.1 Screen Shot of Ranorex Studio

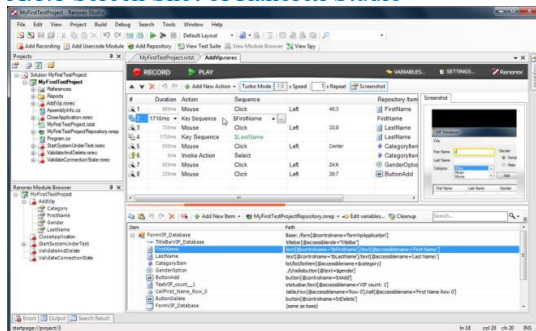


Fig: Ranorex Studio Out Look

### Screenshot of TestComplete Recorder



Fig: TestComplete Recorder

##### A.1.2 Screen Shot of Ranorex Recorder

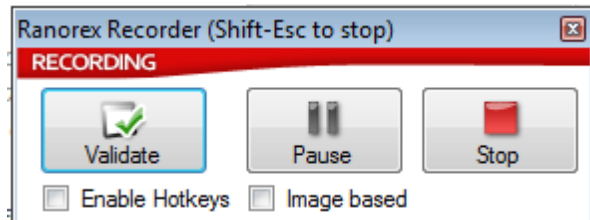


Fig: Ranorex Recorder