

# **QUALITY ENGINEERING & ASSURANCE**

*Project report submitted in partial fulfillment of the requirement for the degree of*

## **BACHELOR OF TECHNOLOGY**

**IN**

## **ELECTRONICS AND COMMUNICATION ENGINEERING**

**DHANANJAI BHALAIK (171036)**

**UNDER THE GUIDANCE OF**

**Ms. SOWNDHARIYA RAVICHANDRAN**



**JAYPEE UNIVERSITY OF  
INFORMATION TECHNOLOGY,  
WAKNAGHAT  
MAY2021**

# TABLE OF CONTENTS

<b>CAPTION</b>	<b>PAGE NO.</b>
DECLARATION	3
ACKNOWLEDGEMENT	4
ABSTRACT	5
<b>CHAPTER-1: INTRODUCTION</b>	<b>6</b>
1.1 Quality Assurance	
1.2 Software Testing	
<b>CHAPTER-2: FUNCTION TESTING</b>	<b>10</b>
2.1 Agile Methodology	
<b>CHAPTER-3: DATASOURCE</b>	<b>17</b>
3.1 SQL	
3.2 JSON & XML	
<b>CHAPTER-4: VB SCRIPT</b>	<b>25</b>
<b>CHAPTER-5: UFT AUTOMATION</b>	<b>31</b>
<b>CONCLUSION</b>	<b>35</b>
<b>REFERENCES</b>	<b>36</b>

## **DECLARATION**

I hereby declare that the work reported in this B.Tech Project Report entitled “QUALITY ENGINEERING & ASSURANCE” submitted at Jaypee University of Information Technology, Wagnaghat, India is an authentic record of our work carried out under the supervision of Ms. Sowndhariya Ravichandran(Cognizant). I have not submitted this work elsewhere for any other degree or diploma.

DHANANJAI BHALAIK 171036

This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

Mr. SOWNDHARIYA RAVICHANDRAN  
Date: 20<sup>th</sup> MAY, 2021

Head of the Department/Project Coordinator

## **PROJECT REPORT UNDERTAKING**

I Mr. DHANANJAI BHALAIK, Roll No. 171036, Electronics and Communication is doing my internship with COGNIZANT from 27<sup>th</sup> February, 2021 to 11<sup>th</sup>, June 2021.

As per procedure I have to submit my project report to the university related to my work that I have done during this internship.

I have compiled my project report. But due to COVID-19 situation my project mentor in the company is not able to sign my project report.

So I hereby declare that the project report is fully designed/developed by me and no part of the work is borrowed or purchased from any agency. And I'll produce a certificate/document of my internship completion with the company to TnP Cell whenever COVID-19 situation gets normal.

Signature-



Name- DHANANJAI BHALAIK

Roll No.- 171036

Date – 20<sup>TH</sup> MAY, 2021

## **ACKNOWLEDGEMENT**

I would prefer to categorical my feelings of special thanks to my teacher Ms. Sowndhariya Ravichandran as well as our HOD who gave us the golden chance to try and do this excellent project on the topic Quality Engineering & Assurance, that conjointly helped me in doing a plenty of analysis and I came to grasp concerning numerous new things for which we are really thankful. Secondly I might conjointly prefer to convey my seniors and friends who helped me a lot in compiling this project among the restricted time frame.

## **ABSTRACT**

A Quality Engineering and assurance team members role is one that, like the name quality assurance reflects, is the important function of ensuring quality. I conjointly found that QA will talk over with quality analyst, that looks a lot of applicable to ME than quality assurance (as it's not possible to completely make sure the quality). Anyway, that role is related to the practical tester.

Previously the duty of Software Development Engineer in Testing also called SDET engineer became standard and conjointly, the agile based or of Devops conjointly came up, with this redundant information can take up area and customarily decrease the potency of your sales following system.

# CHAPTER 1

## INTRODUCTION

The role of a QA (quality assurance) became standard and conjointly, the agile-oriented or of DevOps conjointly emerged, with this redundant information can take up supernumerary area and customarily decrease the potency of your sales following system. Previously the duty of Software Development Engineer in Testing also called SDET engineer became standard and conjointly, the agile based or of Devops conjointly came up, with this redundant information can take up area and customarily decrease the potency of your sales following system.

Role	Core Function
Software Test Engineer	test the overall system using appropriate testing techniques and instruments
Test Analyst	identify test conditions and features to test develop test scenarios and documentation
Test Automation Engineer	develop scripts to run automated tests
Software Development Engineer in Test	develop tools to support testing or other functions perform low-level testing
Test Architect	design complex test infrastructure select tools for implementation
Test Manager	prepare test strategy control the testing process and the team members

## 1.1 Quality Assurance

Quality assurance testing is quality assurance(QA) or a high quality testing method that ensures that a company delivers the simplest product or services doable.

QA aims to deliver consistent results through a group of standardized procedures, which suggests that organizations conjointly got to check that that their processes for achieving the required results hit specific quality benchmarks themselves.

In brief, you would possibly say that QA includes all activities that focus on implementing standards and procedures related to guaranteeing that package meets a definite set of needs before it's discharged to the general public.

The key factor to stay in mind is that QA doesn't involve the particular testing of product. Instead, it focuses on the procedures to make sure the simplest outcome. QA activities ar ultimately method directed.

Most often, package testing job titles area unit selected QA (Quality Assurance) or Tester. They'll conjointly embody the subsequent specifications:

- Technology: chemical element Tester;
- Business domain: health care QA;
- Subject of testing: info Tester, API Tester;
- testing type: Performance Tester, Security tester;
- Expertise: Senior QA Testing Specialist.



## 1.2 Software Testing

Software Testers are a unit to blame for the standard of package development and preparation. They're concerned in performing both machine-controlled and manual tests to confirm the package created by developers is appropriate purpose. A number of the duties embody analysis of package, and systems, mitigate risk and stop package problems.



### **Package Tester duties and responsibilities**

- analyzing users stories and/use cases/requirements for validity and practicability
- collaborate closely with different team members and departments
- Design and develop automation scripts once required
- Detect and track package defects and inconsistencies
- Provide timely solutions
- Apply QEA ,quality engineering and assurance principals throughout the Agile software lifecycle
- Provide support and documentation

## **CHAPTER 2**

### **FUNCTION TESTING**

FUNCTIONAL TESTING may be a variety of computer code testing that ensures that the code against the important specific requirements. The goal of useful tests is to validate the output against the useful requirements by checking every operation of the computer code application with appropriate input.

Function testing is the most common type of function testing, and it has nothing to do with the application's American Standard Code for Information Interchange text file. This testing examines the application's computer software, APIs, database, security, client/server connection, and other functionalities. Testing can be done manually or automatically..

The primary goal of useful testing is to ensure that the code is functioning. It is mostly concerned with-

- Mainline functions: Testing the most functions of associate application
- Accessibility: Maintains the check on the accessibility of the system.
- Error Conditions: Usage of testing techniques to ascertain for error conditions. It checks whether or not appropriate error messages square measure displayed.
- 

#### **Types of functional testing:**

- Functions
- Integration testing
- Accessibility

- Smoke testing
- Unit testing



SOFTWARE TESTING LIFE CYCLE

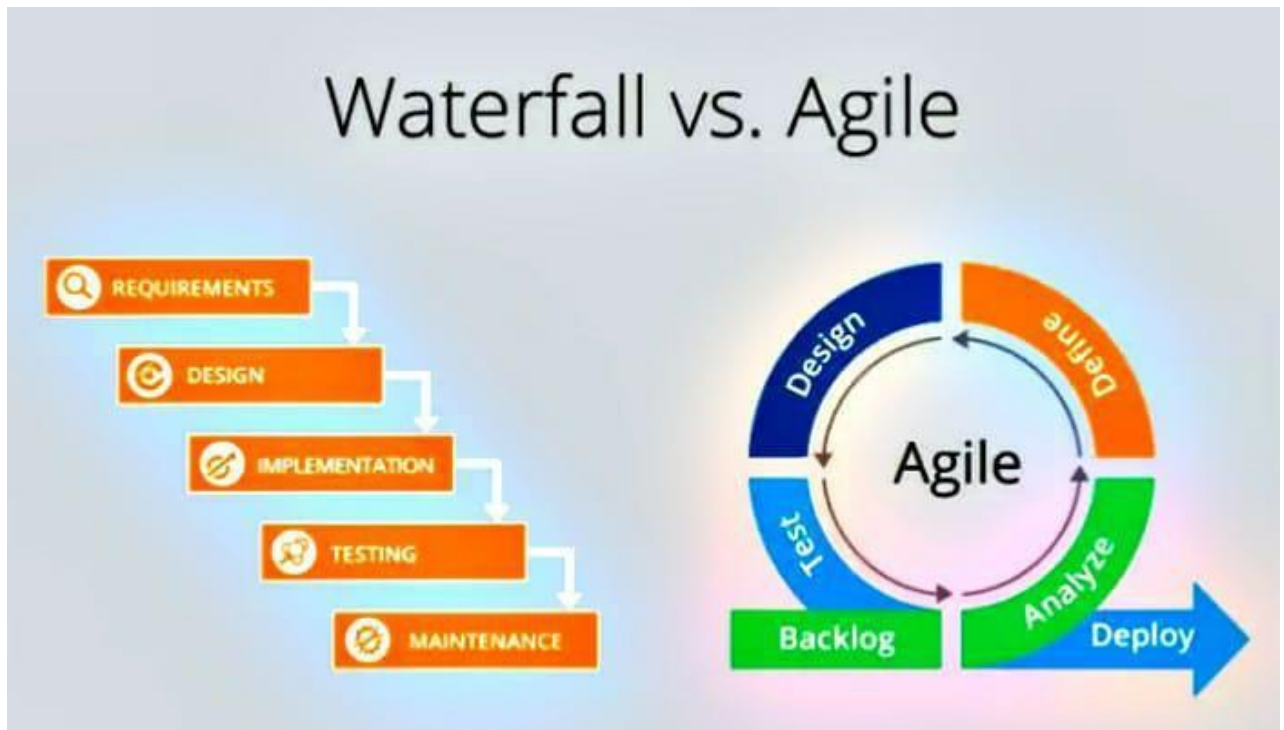
There square measure vi steps within the useful test process:

1. Find and specify the functions that you simply request the package or internet 12

application to perform

2. Create computer file supported these useful specifications
3. Find the result supported by the useful requirements.
4. Write and execute take a look at cases to assemble take a look at information (these is manual or machine-driven tests)
5. Contrast the outcomes of real and expected result
6. Changes are to be made if the output does not match.

## 2.1 AGILE METHODOLOGY



### WATERFALL MODEL VS AGILE MODEL

Agile refers to the ability to create and react to changes. It's a of dealing with, and end up in, an uncertain and fluctuating environment.

The Agile declaration's authors decided "Agile" as the label for the entire plan because that word defined the adaptability and reaction to change that was required for their approach.

It's just about figuring out how you'll interpret what's going on in the environment you're in right now, determining what kind of ambiguity you're dealing with, and figuring out how you'll deal with it as time goes on.

## Creation of an agile package

Agile package development is over frame work such as start, or Feature-Driven Development (FDD).

Try programming, test-driven development, stand-ups, designing sessions, and sprints are all examples of agile package development.

Agile package development is an umbrella term for a set of structures and activities that are driven by the ideals and principles articulated in the Agile package Development Declaration and the twelve Principles that underpin it.

When you approach package creation in a very explicit manner, it's considered a great plan to measure yourself against these principles and apply them to assist you figure what you should do given the explicit context.



The Agile package creation group places a strong emphasis on teamwork and, as a result, the self-organizing team.

That isn't to say there aren't any administrators. It means that groups have the ability to sort things out however they want to go about it on their own.

It implies that such organisations are multifunctional. Those groups do not need unique tasks, as long as you have the team to work together and ensure that you have all of the necessary skill sets on the team.

Managers can continue to play a role. Managers make sure that team members have or are learning the requisite skills.



Managers build a conducive atmosphere for their teams to flourish. When attempting to generate products, managers normally take a step back to let their teams work out, but they step in when the teams are working hard but unable to solve problems.

When most groups and organisations begin their Agile development journey, they prioritise practises that promote collaboration and job organisation, which is fantastic.

Special technical practises that explicitly deal with developing packages in a way that helps the team deal with complexity are another valuable category of practises that aren't always followed but should be. Such technical procedures are crucial and something you can not forget.

## Agile's History

Here's how Agile got its start, how it got its name, and where it's going now. To get a better understanding of where things are now, it's best to look back at where Agile package development began. Agile thought may be a way of thinking.

Finally, the Agile Manifesto's ideals and principles may indicate that Agile is a mentality. These values and principles guide how to create and react to amendments, as well as how to deal with uncertainty.

“We square measure uncovering better ways of enhancing package by doing it and serving to others book,” says the first sentence of the Agile declaration.

When you're stumped, try something you think could work, get input, and make adjustments as needed.

When you've done so, keep the beliefs and ideals in mind. Allow your background to influence the frameworks, methods, and strategies you use to communicate with your team and provide value to your customers.

## Square Measurement that is flexible

What does it mean when Agile is defined as a mindset? In terms of Agile methodologies, what does it imply? You'll find that providing a good explanation of methods will help you address this query.

According to Alistair Cockburn, a policy is a set of rules that a community wishes to follow. This means that each team will have its own strategy, which will vary from the methodology of the other teams in minor or major ways.

While Start and XP are called agile methodologies, they are simply systems derived from a single team's methodologies. They became structures when they were generalised to be used by other classes. These systems will aid a team in determining where to start with their strategy, but they should not be used as the technique. The team would need to adjust its use of a system on a regular basis to ensure that it is appropriate for its situation.

## Agile Business Analysis

As Agile package development became more popular, people became more involved in package development practises. The UN department, on the other hand, did not build a kit to discover how to work out in person, but these Agile concepts were implemented in their line of work.

A group of package developers (along with a tester) wrote the Agile declaration, and thus the twelve Principles, to fix problems that package developers were facing. When you think of Agile as a mindset, you can apply it to a wide range of tasks.

When you do this, the term Agile takes on a new meaning. It describes the steps involved in completing a task. It does not result in any new methods for the hypotheses that are explained on top of it.

If you want to learn Agile project management, ask yourself, "How do we execute project management in a way that helps the North American nation to form and adapt to change and handle uncertainty?"

The two principles discussed above are examples of Agile "outside the box" thinking. In the business agility trend, these efforts have recently yielded results.

People seeking business agility will ask, "How can we organise and operate our organisation in such a way that allows the North American nation to form and react to change while still dealing with uncertainty?"

You could argue that business nimbleness is the recognition that in order for individuals in a company to control with an Agile mentality, the whole organisation must accept it. Before the company modified its structure and operations to meet an unstable climate, agile software development was never truly agile..

# **CHAPTER 3**

## **DATASOURCE**

Data Source may be a name given to the affiliation came upon to a info from a server. The name is usually used once making a question to the info. the information supply name needn't be an equivalent because the computer filename for the data.

Datasource could also be the initial location wherever data is born or wherever physical info is initial digitized, but even the foremost refined information/data might function a supply, as long as another method accesses and utilizes it. Concretely, an information supply could also be a info, a file, live measurements from physical devices, scraped internet knowledge, or any of the myriad static and streaming information services that abound across the web.

### **3.1 SQL**

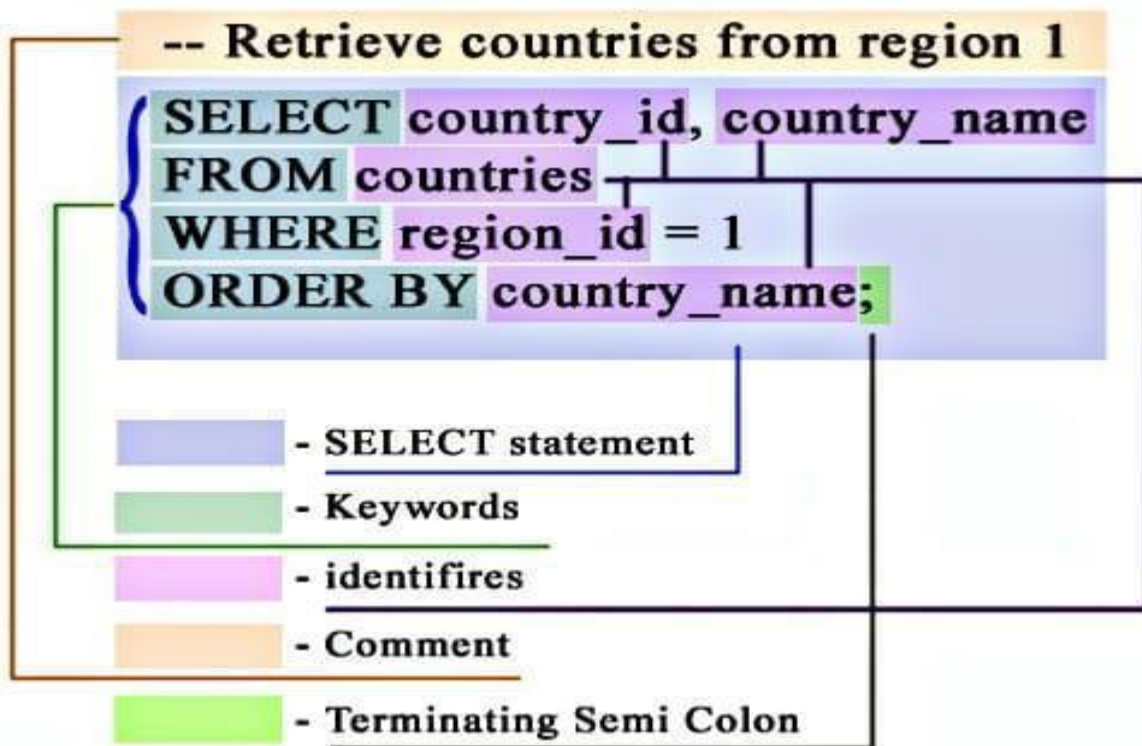
SQL is a standard language used for managing, structuring and manipulating databases which are RDBMS (relational database management system) and RDSMS (relational database stream management system). It has a very static and strong typing discipline with a declarative paradigm.

The following are some of the basic functions of standard query language-

- Executes queries against a database.
- Retrieves data from a database.
- Inserts, updates and deletes records in a database.
- It can also create new tables, stored procedure, views in databases.
- And can set permissions for the same.

- The RDBs can store and compile these statements as packages invoked by their specific name.
- The efficiency for high frequency, complex problems are thus very high, which can be used when the tables are located in remote systems.

## SQL Language Elements



## BASIC HISTORY

SQL was first developed by D D. Chamberlin and R F. Boyce at IBM in the early 1970s. It was first called SEQUEL (Structured English Query Language), but had to be changed to SQL because that was previously used by another UK based company.

It was based on the usage of use Edgar F. Codd's relational model described in the paper, "A Relational Model of Data for Large Shared Data Banks" of 1970. It was commercially available in System R prototype including S/38, DS etc.

SQL was favoured over the older languages because

- It could access many records with single command. And it eliminated the need of specification of whether the record was reached with or without index.

## THE DATA TYPES OF SQL

There are three types of data-

- predefined data types
- constructed types
- user-defined types.

The predefined are further divided into

- CHAR
- Numerics eg. (SMALLINT ,NUMERIC, DECIMAL, INTEGER)
- Variable character (VARCHAR)
- Character for larger obj (CLOB)
- Date and time (DATE, TIME, TIMESTAMP)
- National char types
- National char (NCHAR)
- Datatype Interval (INTERVAL)
- National char varying (NCHAR VARYING)

- National char for large obj (NCLOB)
- Binary types
- Binary (BINARY)
- Character types
- Boolean
- XML
- JSON

#### Constructed types

- MULTISTAY
- ROW
- ARRAY,
- REF(reference), or
- Userdefined datatype

#### THE SHORTCOMINGS OF SQL

- Design - The relational model, tuple calculus, and theoretical basis of SQL are all special.

A table in the relational model is a collection of tuples, while tables and query results in SQL are lists of sometimes repeated rows, with the order of rows being used in queries.

Unlike 'The Third Manifesto,' which stays true to its roots. Though SQL can be fixed or improved, it isn't simple.

- Completeness and orthogonality. Previously, major features such as primary keys were not supported. Sub queries were not specified earlier, and result sets could not be called.

## 3.2 JSON & XML

Many Apis (Application Programming Interfaces) and programming languages, such as Python, Ruby, and JavaScript, serve the same function of organising complex information in a simple and understandable format as JSON and XML. This type of technology is vital because it allows the United States to successfully exchange information by structuring it. Despite having the same target in mind, they haven't been able to achieve it. However, despite aiming for a similar goal, they need alternative ways to work.

The acronym XML stands for extensible markup language. A collection of symbols bestowed in a human and computer-readable format is known as terminology. These symbols would be used to organise and mark the different elements of a document's text. Furthermore, XML is extensible since the creator can create self-descriptive tags or languages at will. This language does not, in essence, give away knowledge, However, it enables developers to store and arrange the data in order to decide how the data will be distributed. Simply put, XML is a language that was developed to store data.

XML is a markup language (Standard Generalized Markup Language), but it is a very flexible and simple tool. It was created to make information interchange easier by converting disparate systems into a common standard. To achieve this, XML imposed a collection of linguistic and custom markup language specifications: It provided a standard and consistent framework for every application, ensuring data integrity and interoperability.



# XML Syntax (cont.)

- **All XML elements**

- Consists of
  - Start tag: `<message>`
  - Content(may or may not) : Welcome to XML!
  - End tag : `</message>`
- All elements must have corresponding end tag  
Example: `<img src = "img.gif">`  
is correct in HTML, but not XML
- XML requires end tag or *forward slash (/)* for termination  
`<img src = "img.gif"></img>`  
or  
`<img src = "img.gif"/>`  
is correct XML syntax

It isn't an artificial language, though, since it doesn't perform algorithms or computations. To put it another way, it lacks its own collection of synchronic linguistics rules and vocabulary for creating computer programmes. XML was created to help people find, store, and organise data. It will also be advantageous in a variety of systems because it will use the triple-crown hypertext markup language OPTIONS.

JSON stands for JavaScript Object Notation, which means it's the first piece of information in JavaScript programmes. The increasing quality of JavaScript has led to the development of a large number of JSON messages. Alternative formats are compatible with this programming platform, but they require additional work, while JSON is already incorporated and perfectly matched with JavaScript. Plus, despite being written in JavaScript, JSON is language-agnostic (much like XML), so you can use it for any artificial language.

The first JSON message was sent in 2001, and since then, the information that is used to store and transport data has grown in popularity. In reality, JSON, like XML, receives information from an online server and transmits it to an online page. However, it requires less writing and is smaller in size, contributing to faster processes and information transmission.

```

1 //Student JSON Object
2 {
3   "rollNumber" : 11,
4   "firstName" : "Saurabh",
5   "lastName" : "Gupta",
6   "permanent" : false,
7   "address" : {
8     "addressLine" : "Lake Union Hill Way",
9     "city" : "Atlanta",
10    "zipCode" : 50005
11  },
12  "phoneNumbers" : [ 2233445566, 3344556677 ],
13  "cities" : [ "Dallas", "San Antonio", "Irving" ],
14  "properties" : {
15    "play" : "Badminton",
16    "interst" : "Math",
17    "age" : "34 years"
18  }
19 }

```

### JSON vs. XML: the variations

Despite partitioning incredibly similar features, JSON and XML have some significant differences. Unique each will make it easier to choose one or the other and determine which is the best option in light of clear preferences and objectives..

First, as previously said, while XML is a terminology, JSON is a data format. One of the most significant advantages of using JSON is that the file size is smaller, making data transfer faster than with XML. Furthermore, since JSON is compact and easy to search, the files appear cleaner and more structured, with fewer empty tags and information. JSON is simpler for humans to use and search because of its simple structure and minimal syntax. XML, on the other hand, is known for its complexity and old-school design, owing to the tag format, which

makes files larger and more difficult to search.

However, comparing JSON to XML isn't entirely fair. JSON is sometimes misunderstood as a replacement for XML; however, although JSON is a useful tool for transferring simple data, it does not perform any processing or computation. XML may be "old" and sophisticated, but it is precisely because of its complexity that it is able to do more than just move data and to method and format objects and documents.

1. When writing an XML document, the author is aware of which fields are required to be present. Assume the author is writing an XML record called automobile, which is specified by the schema automobile.xsd. Then he or she understands what tags are required to be present (model, license, make, etc.).

2. The document will be accurate in accordance with the schema. In other words, the app that scans the document will verify that it is correct, with no missing tags or other errors.

Despite the differences between JSON and XML, knowledge parsing is what separates them the most. Since JSON is already parsed, it will simply be parsed by a standard JavaScript function integrated. a similar doesn't happen with XML, That must be parsed with an XML computer programme, making it more difficult and time-consuming. However, some languages, such as Java, have XML parsers as part of their standard library..

## **CHAPTER 4**

### **VB SCRIPT**

VBScript stands for Visual Basics Script language. Basically, it is a combination of Visual Basic programming language and JavaScript language. VBScript was developed and maintained by Microsoft. VBs is mostly useful in developing dynamic web pages. It is very simple compared to the Visual Basic programming language but works as a scripting language like JavaScript. To use VBScript on the client side, the client must use Internet Explorer because some browsers do not support VBScript.

VBScript currently works in the following areas:

- Windows Script Host (WSH) - It is a natural operating system for Windows operating system.
- Microsoft web server . Internet Information Server (IIS) -.
- Internet Explorer (IE) - An easy-to-use location where we can use VBScript code.

Required: To implement a VBScript script in our area we only need two things:

Text Editor (Any VBScript editors like Notepad ++, Text Hawk, EditPlus, etc.)

- Internet Explorer

To set up VBScript:

Step 1: Open your text editor and create a basic HTML file (for example: index.html) and paste the code below inside that file.

```
<!DOCTYPE html>
<html>
  <head>
    <title>VBScript Introduction</title>
  </head>
  <body>

    <!-- Paste VBScript Here -->

  </body>
</html>
```

**Step 2:** Paste the code below inside the HTML tag of your HTML code, or you can paste it inside the title tag. It is exactly the same as what you did with JavaScript.

```
<script type="text/vbscript">
  document.write("Hello geeks, greeting from GeeksforGeeks")
</script>
```

**Step 3:** Combine both codes and apply them to Internet Explorer and you will get the result below in the console.

```
<!DOCTYPE html>
<html>
<head>
  <title>VBScript Introduction</title>
</head>

<body>
  <script type="text/vbscript">
    document.write("Welcome to GeeksforGeeks")
  </script>
</body>
</html>
```

Problem:

If your VBScript code does not work use the following steps:

Press the F12 key or use Right click to open Inspection Element.

- Click on "Simulation" to open the Emulation setting.
- Change document mode from default to 10.

Disadvantages:

- VBScript code will only be processed by Internet Explorer. Other browsers other than Internet Explorer (such as Channel, Firefox, Safari, Opera etc.) will not work with VBScript code.
- VBScript code will only use the Windows Operating System platform. Some operating systems (such as Linux, Mac, etc.) will not work.
- VBScript code is used as the default ASP writing languages.

Difference between JavaScript and VBScript

JavaScript is a lightweight and targeted writing language used to create dynamic HTML pages with interactive effects within a web page. It is a translated writing language and its code only works in a web browser. It is also called browser language and can be used for client-side development and side development. Developed by Brendan Eich in Netscape and first released in 1995.

Example for JavaScript:

```
<script type="text/javascript">
  document.write("Hello geeks, greeting from GeeksforGeeks")
</script>
```

VBScript is an active written language developed by Microsoft. It is based on Visual Basic and is also called Visual Basic scripting language. It does not support all browsers; it only supports Internet Explorer. It is commonly used in Microsoft sites and uses a particular model for access to system content and biodiversity.

Example for VBScript:

```
<script type="text/vbscript">
  document.write("Hello geeks, greeting from GeeksforGeeks")
</script>
```

### Difference between JavaScript and VBScript:

S.No.	JavaScript	VBScript
1.	It was developed by Netscape.	It was developed by Microsoft.
2..	It does job as a client-side scripting language.	It does job as both server-side and client-side scripting language.
3.	It supports all web browsers and it is a default scripting language in mostly browsers.	It does not support all browsers, supports only Internet Explorer.
4.	It uses the same operator for various operations.	While it uses different operators for various operations.
5.	It uses curly braces for declaration of functions.	It uses Function and End function for declaration of functions.
6.	JavaScript file has the file extension ".js".	VBScript file has the file extensions ".vbs" or ".vba".
7.	It is simpler and easier to learn JavaScript.	It is difficult for beginners to learn VBScript as compared to JavaScript.

## Why VBScript Works: Merging Items by Collaboration

We have outlined four major areas in which VBScript is used, but if we were to look at how text is written in each area, we would be quick to point out that there were far more differences than similarities. (Because of this, we have provided a separate chapter for each area where VBScript is widely used.) But this is misleading. If taken into consideration, we find that the function of VBScript and that of the environment in which its texts are conducted are quite similar to each other, regardless of the different aspects of nature.

### Simplicity of navigation

Since the model of the object is flat, you do not have to worry about wandering up and down the object of the objects. This makes encoding easier, reduces time-wasting error, and improves performance.

### Simplicity of reinforcement

Since objects are independent of each other, you can easily create them or get their reference, instead of finding out which part of the model of the item you should navigate to verify that item, any property or call method that returns that item.



*Figure 1-1. The Active Server Pages object model*



## **CHAPTER 4**

### **UFT AUTOMATION**

The full form of uft is Micro Focus Unified Function Testing , earlier it was popularly known as Quick Test Professional software (QTP), is a framework type that automates practical and regressive kind of testing for system environment.

Micro Focus Unified Function Testing is graphical computer software that permits keyword/scripting interfaces.

It specifies a check using the VB Script Edition a.k.a VBScript scripting language To be precise a check method, & to govern the items and also the controls of the applying beneath check. It enables programmers to monitor all the levels of a operations of a program from a unit place: the interface, the service layer, and therefore the information level.

Mercury Interactive created UFT, which was previously known as QuickTest professional.

Hewlett-Packard (HP) did not inherit Mercury Interactive in 2006. UFT 11.5 total horsepower QuickTest is an ability and horsepower test. Check into one as a service. QuickTest professional and horsepower Service were combined into one software system kit, which was marketed by the horsepower software system

Unified Function Testing is an automated research software framework that can be used to test a variety of software applications and environments. It uses a computer to perform realistic and regression testing.

It operates by identifying objects within an application or an online website and doing the

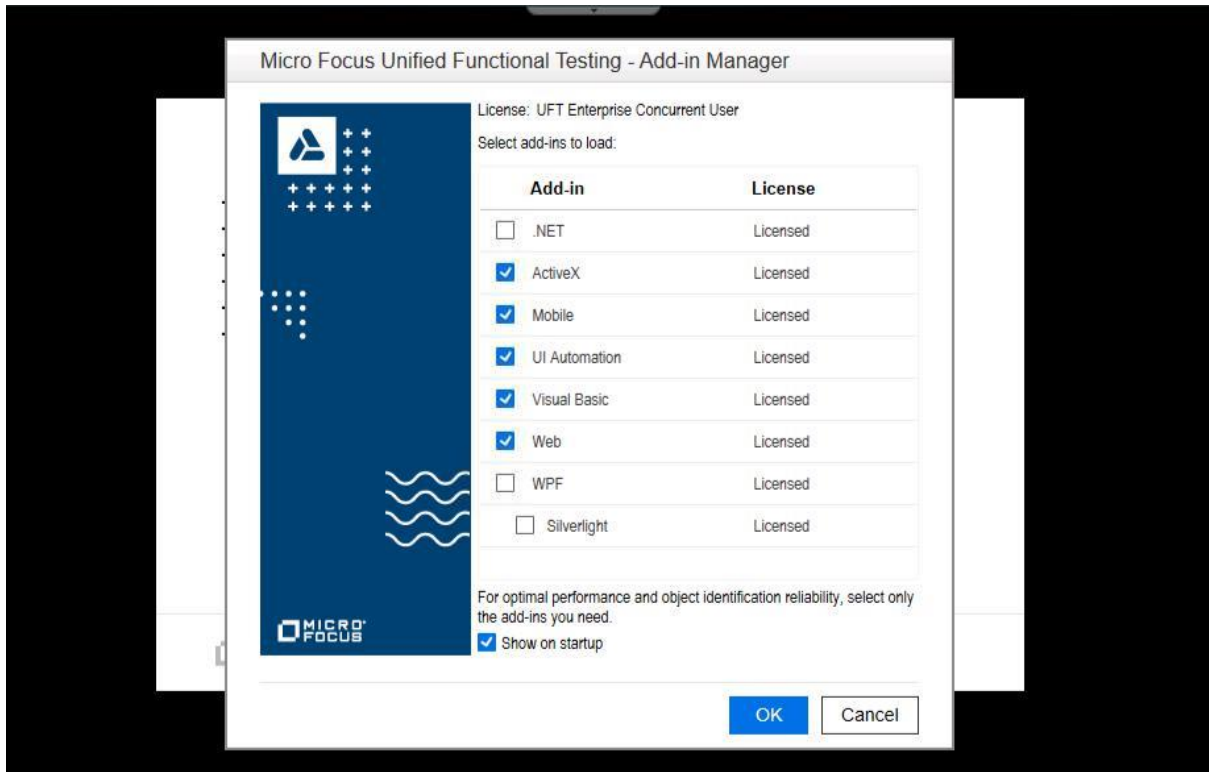
asked functions (for example a click of the mouse or entry through keyboard); it might also capture the object properties.

UFT (Unified functional Testing) specifies the check protocol and governs the artifacts and functions of the software under test using the Visual Basic Script. To point the checking method and to govern the objects and controls of the applying beneath check. Users can need to control the underlying VBScript to perform a variety of subtle behavior.

While UFT is most often associated with "UI-based" test case automation, it can also be used to automate "non-UI" test cases such as filing system operations, data testing, web services testing, and API testing.

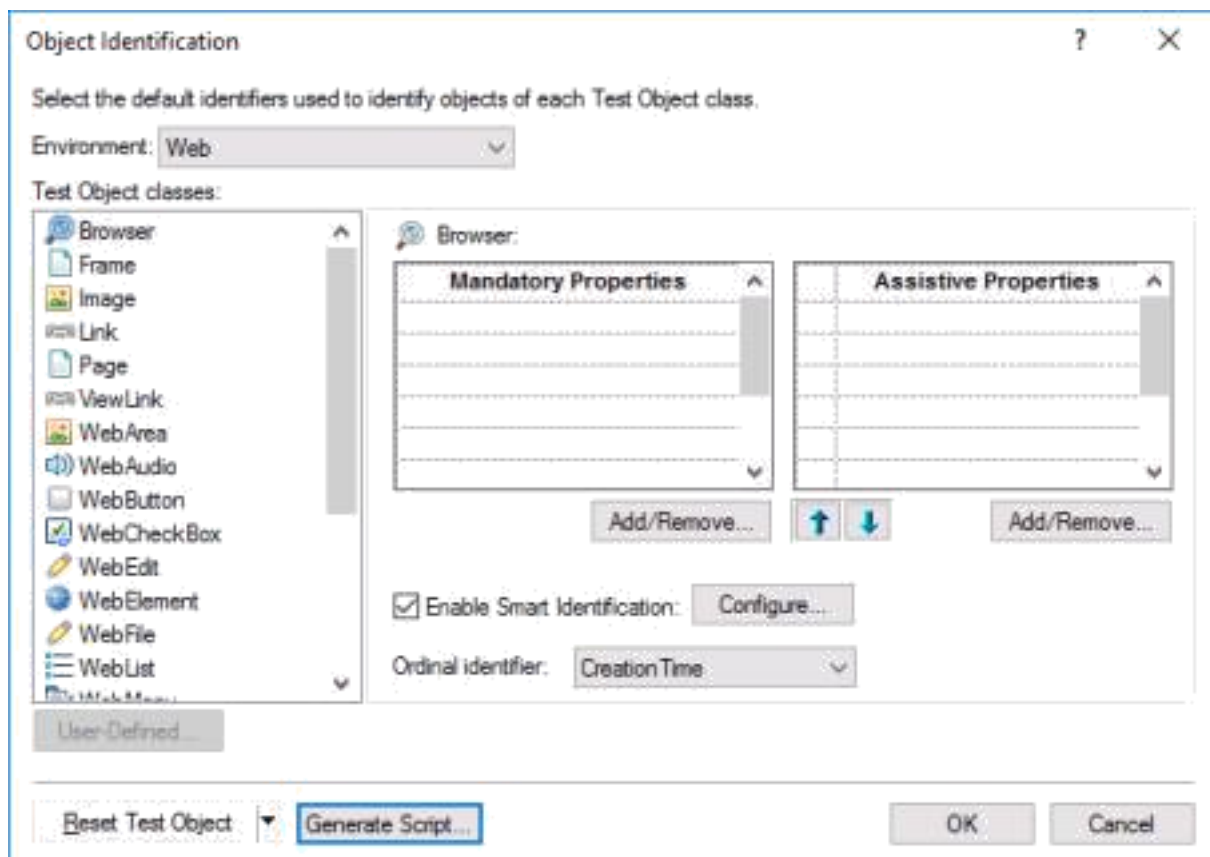
## BASIC STEPS INVOLVED IN UFT

1. Start UFT one
2. The Unified Functional Testing Add-in Manager Dialog Box opens.
3. Select the web add in as shown below



4. Now go to record and run settings





UFT , the most useful software:

- QTP Testing relies on scripting language VB script
- We can check Desktop still because the Web-based applications
- It permits Business method Testing (BPT)

New features	Details
<ul style="list-style-type: none"><li>• Support for OS and browser</li></ul>	<ul style="list-style-type: none"><li>• Supports Windows 8.1 and Windows server 2012</li><li>• Performs testing on Safari browser</li></ul>
<ul style="list-style-type: none"><li>• UFT extension in Chrome store</li></ul>	<ul style="list-style-type: none"><li>• Receive updates automatically on chrome</li></ul>
<ul style="list-style-type: none"><li>• Support for windows runtime objects</li></ul>	<ul style="list-style-type: none"><li>• Record and run tests on your Windows Runtime application</li><li>• Create object repositories with Windows Runtime application</li></ul>
<ul style="list-style-type: none"><li>• Newly supported technologies</li></ul>	<ul style="list-style-type: none"><li>• JDK 1.8</li><li>• XenDesktop 7</li><li>• SAP Web Dynpro ABAP for NetWeaver 7.40 and so on</li></ul>
<ul style="list-style-type: none"><li>• Extended support for various technologies</li></ul>	<ul style="list-style-type: none"><li>• Recognizes and interact with objects from Siebel web applications, SAP applications, etc..</li><li>• New FlexTable test object methods available for advanced data grid controls</li></ul>

## Advantages of QTP Automation

- It supports record and playback
- It uses a lively screen to record scripts and helps tester in referring the screen object properties
- It has wonderful object identification method or mechanism
- It supports completely different add-ins like Oracle, Java, SAP, NET, Web Forms, folks soft, etc..
- It permits you to reinforce the present tests even while not the AUT through a lively screen
- It supports widespread automation frameworks- keyword driven testing approach, standard testing approach, data-driven testing approach, etc..
- It comes with Associate in Nursing inherent IDE
- It will be integrated with take a look at management tools like Quality Center, take a look at Director, and Win runner

## **CONCLUSION**

QEA quality engineering and assurance aims to deliver consistent results through a group of standardized procedures, which suggests that organizations conjointly got to check that that their processes for achieving the required results hit specific quality benchmarks themselves. In brief, you would possibly say that QA includes all activities that focus on implementing standards and procedures related to guaranteeing that package meets a definite set of needs before it's discharged to the general public. The key factor to stay in mind is that QA doesn't involve the particular testing of product. Instead, it focuses on the procedures to make sure the simplest outcome. QA activities ar ultimately method directed.

## REFERENCES

1. ANSI/IEEE 829-1983 IEEE Standard for Software Testing Documentation
2. Craig, Rick David;(2002). Systematic Software Testing. Artech House. p. 7. ISBN 1-58053-508-9.
3. Itkonen, Juha; Mika V. Mäntylä; Casper Lassenius (2007). "Defect Detection Efficiency: Test Case Based vs. Exploratory Testing" (PDF). First International Symposium on Empirical Software & Measurement: Archived on October 13, 2016. Retrieved January 17, 2009.
4. Nguyen. Testing Computer Software. Wiley Computer Publishing, 1999, p. 42. ISBN 0-471-35846-0.
5. ISO/IEC/IEEE 24765:2010(E). 2010. pp. vol., no., pp.1–418, 15 Dec. 2010.
6. Calikli, Gul; A. Uzundag, Berna; Bener, Ayse (September 19, 2010). "Confirmation Bias Software Testing: An Analysis of the Effects of Company Size, Experience and Reasoning Skills" – via ResearchGate.
7. Kaner, Falk, Nguyen 1999, p. 52