AUTOMATION TESTING - HC FACETS WITH UFT

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

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

Spardha Kapil (171026)

UNDER THE GUIDANCE OF

Miss. Sowndariya Ravichandran
Mr. Neelmegam Rengasamy

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
May, 2021

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DECLARATION

I, **Spardha Kapil**, student of B.Tech (ECE) hereby declare that this written submission on "**AUTOMATION TESTING-HC FACETS WITH UFT**" expresses my thoughts and my ideas in my own words and I have sufficiently cited and referenced the original sources wherever others' ideas or words have been included. I also hereby declare that I have held allegiance to all the principles of academic truthfulness and integrity and I have not misrepresented or falsified or fabricated any idea/data/source in my work. I understand that any violation of the above will result in a disciplinary action by the Institute and can also evoke penal action from the sources which have not been properly cited or from whom proper permission has not been taken

SPARDHA KAPIL
171026

Date: 13 May 2021

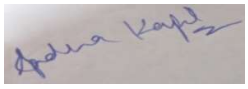
UNDERTAKING

I Ms. **SPARDHA KAPIL** Roll No. **171026**, Branch **ELECTRONICS AND COMMUNICATION** is doing my internship with **COGNIZANT** from **27 FEBURARY 2021 to 11 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 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: SPARDHA KAPIL

Roll No. : 171026

Date: 17 May 2021

ACKNOWLEDGEMENT

I would like to express my deepest and sincere gratitude to my supervisor **Miss. Sowndariya Ravichandran** and my trainer **Mr. Neelmegam Rengasamy** for their immense help and guidance throughout the duration of my internship. Their insightful and discerning ideas helped in the successful completion of this internship. The constant support and motivation helped me steer through challenging and difficult phases of my internship.

The facilities provided by the department and my college are also acknowledgeable. I would also take this opportunity to thank my family for their perpetual encouragement throughout the internship period.

LIST OF ACRONYMS AND ABBREVIATIONS

- UI-User Interface
- SDLC- Software Development Life Cycle
- SRS- Software Requirement Specification
- DDS- Data Distribution Service
- UAT-User Acceptance Testing
- SQL-Structured Query Language
- DDL-Data Definition Language
- DML-Data Manipulation Language
- DQL-Data Query Language
- DCL-Data Control Language
- XML- exTensible Markup Language
- UFT-Unified Functional Testing
- QTP-Quick Test Professional
- JSON-JavaScript Object Notation

LIST OF FIGURES

ABSTRACT

Software Testing is a method or strategy which is used to check whether the business required real programming item complements with the expected and anticipated necessities and to make assure that the system or software is error and defect free. Software testing involves the implementation of the software or the system using either manual or automated tools. Testing is a process or an activity which is used to examine that are the expected output complements with the actual output & to make sure that the system or the software has no errors or defects in it.

There are about 100 categories of software testing broadly classifying into three main types which are:

- FUNCTIONAL TESTING
- NON-FUNCTIONAL TESTING
- MAINTAINENCE TESTING

There is another two categories involved in testing:

1. **Verification:** it is defined as the set or list of chores which make sure that software or system, executes its specific and desired function correctly.

2. **Validation:** It mentions to a distinct set or list of chores which makes sure that the software application or system which is constructed fulfills the business or client's needs.

BENEFITS

- Cost-Effective
- Security
- Product Quality
- Customer Satisfaction

- Product Improvement

- Quality Check

In this training I have done two projects on testing: **Royal Caribbean Alaska Cruise** and **Hotel Booking** along with various hands-on assignments.

The main objective of these projects and assignments was to get a good grasp about Software testing.

CHAPTER 1
INTRODUCTION

1.1 TESTING

Software Testing is interpreted as the procedure of assessing either software application or in some cases any system and its components with the objective of finding whether it satisfies the requirements needed or not. It is defined as implementing a software or system so as to detect any defects, errors or any of missing requirements which are needed in the actual system but are not present currently.

Software Engineering apprehends many of the disciplines whose main focus is to fend off or provide a solution to the errors or malfunctions. Software Testing is a wide term which encircles a number of activities along with the whole development cycle and beyond it. [1]

Software testing is broadly used because it is very important to test each & every software and system along with its components before it gets finally deployed.

1.2 ATTRIBUTES OF TESTING

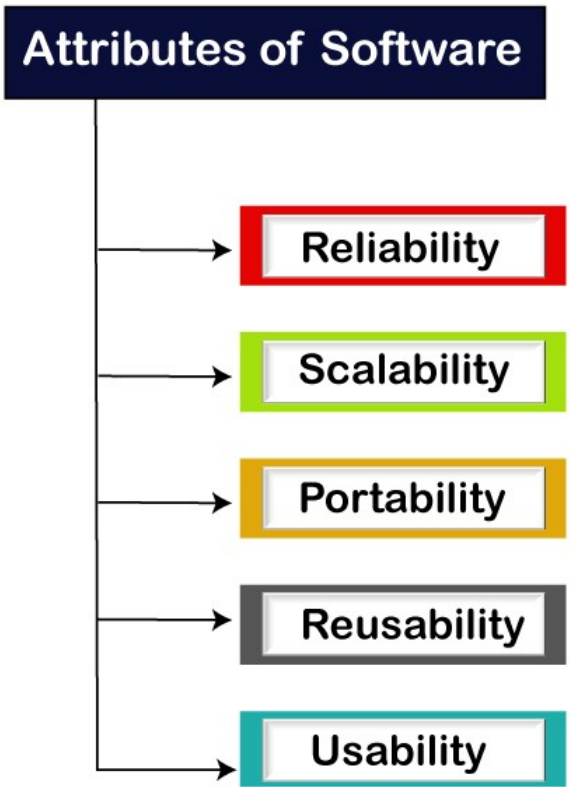


Figure 1.1 Attribute

1.2.1 RELIABILITY

Software or System reliability refers to the measure if the product is reliable or trustworthy enough to support in any given situation and scenario. The reliability of the product is measured in the terms of the project working in different working conditions and scenarios [2].

1.2.2 SCALABILITY

Scalability testing is defined as one of the non functional testing methodology which measures the performance of a software or system or network when the user requests number is scaled high or low. The main objective of scalability is to check and ensure that the system or software is capable of handling increase in user traffic, data frequency etc.

1.2.3 PORTABILITY

Portability Testing is elucidated as a sort of testing which is done to define the degree of easiness or hardship faced by an application during transmission of software from one hardware to another or from one environment to another software environment. [2]

1.2.4 REUSABILITY

Reusing software is a great way of managing cost and is highly time saving. There should be different code library classes that should be flexible enough to be used with ease in different applications and modules.

1.2.5 USABILITY

Usability is defined as one of the quality attribute which measures how easy are the UI to use. It also refers to the method for enhancing the easiness to use during the designing process.[2]

Usability has 5 main quality components:

- **Learn ability**
- **Efficiency**
- **Memory ability**
- **Errors**
- **Satisfaction**

1.3 TYPES OF SOFTWARE TESTING

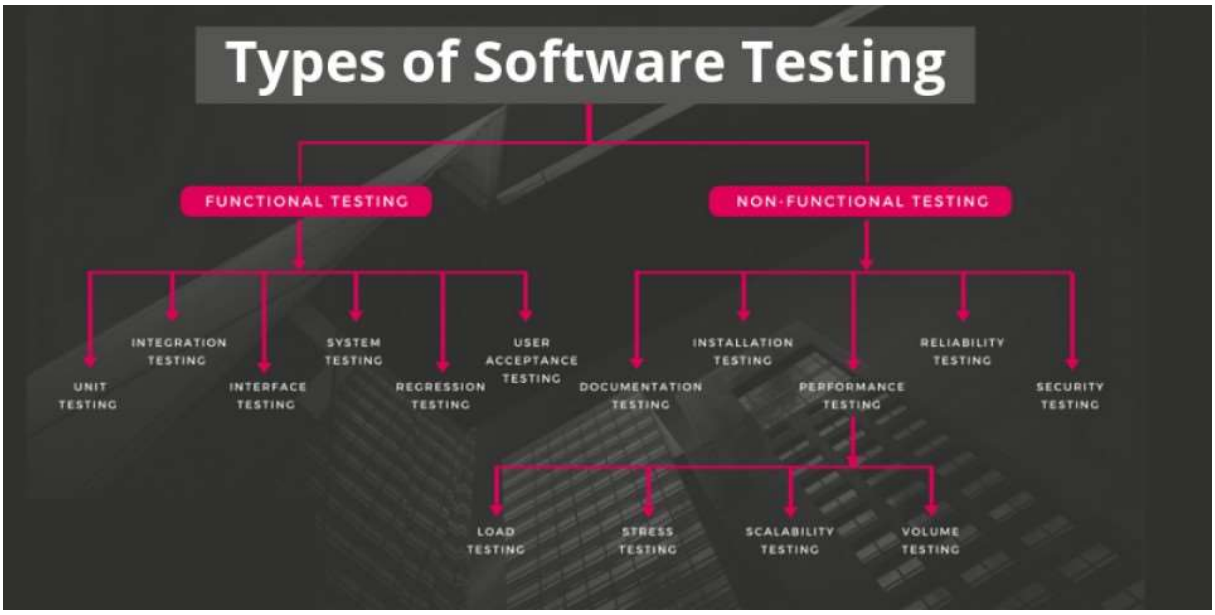


Figure 1.2 Types of Software Testing[3]

1.3.1 FUNCTIONAL TESTING

Functional testing is defined as one of the type of software testing which is responsible for validating the software and system with the functional specifications/demand. The main purpose and aim of functional testing is examine the whole i.e. each and every function of the software application by giving the application some inputs and then assess the results.

An idea to functional testing is also explained where the design of the software is viewed as a collection of the functions. The test data selection depends upon the type of function used.

1.3.1.1 CATEGORIES OF FUNCTIONAL TESTING

- UNIT TESTING
- INTEGRATION TESTING
- INTERFACE TESTING
- SYSTEM TESTING
- REGRESSION TESTING
- USER ACCEPTANCE TESTING

1.3.2 NON-FUNCTIONAL TESTING

Non functional testing can be explained as one of the categories of software testing which deals with the non functional components and functions of a software application or system and its components. It is developed to test whether the system is ready as per the non functional parameters. These non functional parameters are never addressed using functional testing

1.3.2.1 TYPES OF FUNCTIONAL TESTING

- DOCUEMENTATION TESTING
- INSTALLATION TESTING
- PERFORMANCE TESTING
- RELIABILITY TESTING
- SECURITY TESTING

1.4 ADVANTAGES OF SOFTWARE TESTING [4]

1. Saves Money
2. Increases Client Confidence
3. Brings more Profit
4. Boots customer/client satisfaction
5. Promotes organization efficiency

CHAPTER-2
FUNCTIONAL TESTING

2.1 SOFTWARE TESTING

It can be explained as a way of finding mistakes and defects in a developed software application and a system and its product. It also makes sure that the expected and actual results match.

2.2 TECHNIQUES USED IN TESTING

2.2.1 BLACK BOX TESTING:

Black Box Testing is the type of the testing technique which is formed on the requirement properties or specifications in which there is no need to examine the code. It is fully done on the client's point of view only. This technique is done on complete finished product.

Black box testing is a very important method of testing in software testing; it involves in the overall validation of functionality of the software application or the system. As it is based on customers and clients requirements it becomes easy to identify any unpredictable or incomplete requirements. The main significance of black box techniques is that it is capable of handling both the valid and the invalid inputs from a client's point of view.

One of the most important advantages of black box testing technique is that the testers do not need to have understanding on any specific coding language. The testers as well as the programmers both are independent of each other. The testing is done from the client's perspective. [5]

2.2.2 WHITE BOX TESTING:

White-Box Testing is the type of testing technique in where we have the most of the information about the software application. This type of testing is mainly done to make the code better. Finding inefficiencies in code, poor coding practices, etc are a part of this type of testing technique.[5]

2.3 SOFTWARE DEVELOPMENT LIFE CYCLE (SDLC)

Software Development Life Cycle (SDLC) is a method which is used by the software production industry to design and develop highly efficient software and systems. The main aim of SDLC is to

produce high at quality software. Software which are able to complete in time and exceeds customer's expectations and most importantly are completed within time.[6]

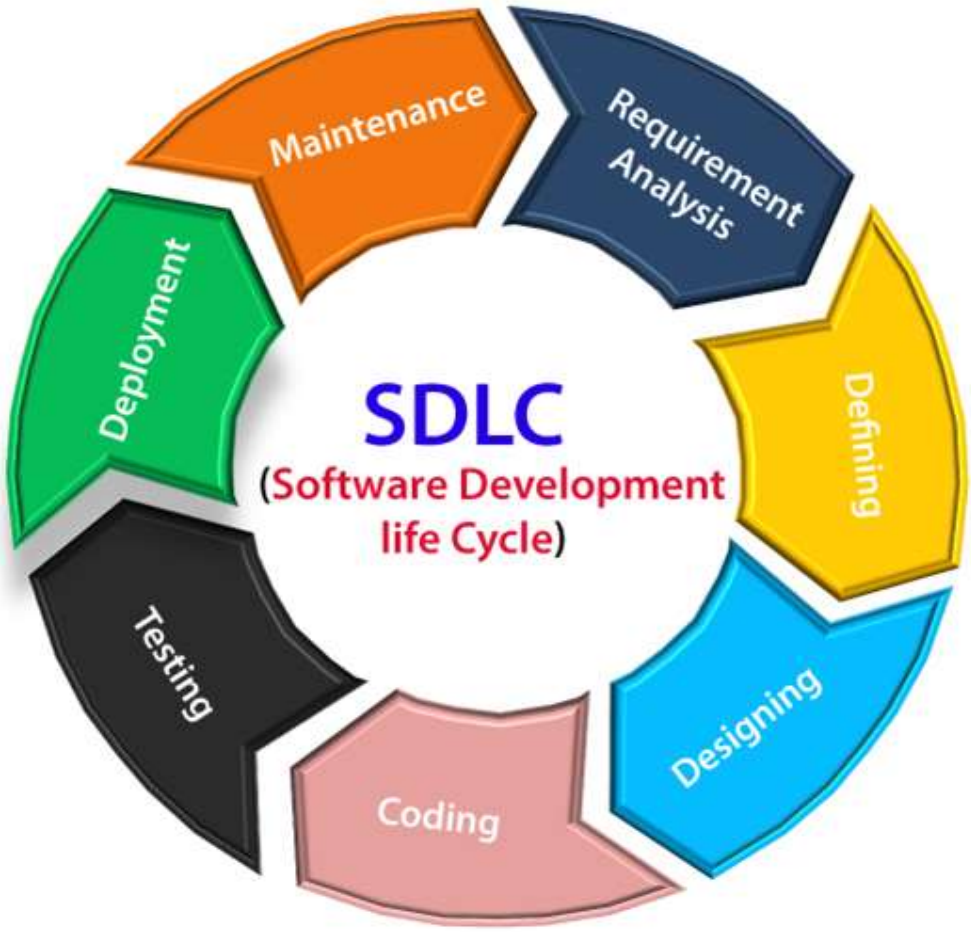


FIGURE 2.1 Software Development Cycles [6]

Stage 1: Planning and Requirement Analysis

Planning along with what the client needs i.e. requirement analysis is one of the most significant parts in the SDLC. It is mainly done by the team leaders or in some cases the senior members of the team with the help of data input by the client. This information and analysis is then used to prepare a plan for the project, the approach that would be required to complete it and to conduct end to end feasibility tests.

Stage 2: Defining Requirements

After the data is done and analyzed the next step in this is to define and document the product requirements and specifications and to get them accepted from the client's side. This whole process is done using SRS which has all the software product specifications and requirements.

Stage 3: Designing the Product Architecture

SRS is used as a testimonial to give assistance to the software designers to develop the best design for the system or software application. Centered on SRS a design approach is created which is documented in the DDS. This is then reviewed by important stakeholders who select the best design approach.

Stage 4: Building the Product

In this part of the SDLC the development of the product which is the software application starts. . The programming guidelines and approach is selected according to the DDS.

Stage 5: Testing the Product

The product is tested against all the parameters. The software or product defects are reported, they are tracked, and most importantly these defects settled and they are tested again so as to make sure that they complement with the quality expectations as per the SRS.

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Stage 6: Deployed in the Market

Finally when the software product is fully tested and retested and matches the expectations as per the SRS, it is released in the market as per the business requirements of the company or the client. The best way of releasing the product is to release it in a limited version so that it can be tested against the real scenarios by the user itself. This is known as UAT.

2.4 AGILE TESTING

Agile testing is a type of testing practices which makes use of the principles and methodologies of the agile software development. This type of testing can happen at the start of the project. It is not sequential i.e. (it can be executed anytime) but it is continuous.

2.5 WRITING TEST CASES

Identify four test scenarios for the mentioned requirement. This Requirement is about Raj Travels website. It is used to Book Hotels in India and also internationally. Write all the test cases using the appropriate testing techniques wherever applicable for the below requirement

2.5.1 TEST SCENARIO

Module	Scenario ID	Scenario Name	Scenario Description	Requirement id
Raj travels/Book Your Hotel	TS_01	Verification for website accesibility	Verify that the website is easily accesible, and works correctly.	REQ_1
Raj travels/Book Your Hotel	TS_02	Verification for radio button working.	Verify that the radio button is working correctly, i.e. the correct list boxes are appearing when clicked on.	REQ_2
Raj travels/Book Your Hotel	TS_03	Verification of Check-In and Check Out dates.	To verify whether the check-out date field accepts a later date than checkin date.	REQ_3
Raj travels/Book Your Hotel	TS_04	Verification that valid entries are filled.	Verify that the details such as country, city, nationality etc filled are valid	REQ_4
Raj travels/Book Your Hotel	TS_05	Verification that room details are correct	Verify that the room details such as number of adults and children, room number etc are all correct.	REQ_5
Raj travels/Book Your Hotel	TS_06	Verification that final display page is showing.	Verify that after filling of the details , the page leads to the display page or shows invalid data in case of invalid details.	REQ_6

FIGURE 2.2 Test Scenarios

2.5.2 TEST CASES

Test case id	Test case description	Prerequisites	Steps to execute	Expected results	Actual results	Pass/Fail
TC_01	Verify that the user can easily access website	User should have any electronic device such as laptop, desktop or mobile phone with browser.	1) Take any electronic device. 2) Open any browser. 3) Enter hotel website www.raj.travel. com	User should be able to access the website	User successfully accesses the page.	Pass
TC_01.1	Check functional testing of the website	User should have device on which he can access the website.	1) Open the website. 2)See that the website is scrolling up and down 3) Various buttons on the website are working.	The website should be functioning properly. Each and every button is working properly.	The website functions correctly.	Pass
TC_02	The functionality of the radio button.	The webpage should be working.	Select India.	If India is selected then only list box 2 should be displayed.	The radio button functions properly.	Pass
TC_02.1	The functionality of the radio button.	The webpage should be working.	Select International	If International is selected then List box 1 as well as list box 2 should be displayed	The country list box i.e. List box 1 is not displayed.	Fail
TC_03	Verify the check-in and check out dates are in correct format (DDMONYYYY). Also verify that the checkout date is greater than equal to check-in date.	The date should be entered in a valid format by the user i.e. DDMONYYYY. Also the check-out date should be greater than the check-in date.	1) Click in the list box and select the check-in date. 2) Click on the list box and select the checkout date greater than or equal to check-in date.	The check-in and check-out date should be successfully specified.	The check-in & check-out date are clearly specified	Pass
TC_03.1	To verify whether the check-out date field accepts a later date than check-in date	The check-in and check-out date should be filled in correct format.	1)Select the check-in date. 2) Select a later check-out date.	A later check-out date should be selected.	We can select a later check-out date	Pass
TC_03.2	To check if error is reported if check-out date field is in past	The check-in and check-out date should be filled in correct format.	1) Launch hotel reservation application using URL. 2) Fill all the required details. 3) Select checkout date in past.	We should receive an error messgae.	Error messgae is received	Pass
TC_04	Verify that valid details are filled.	The webpage should be working.	1)Launch the website. 2) Fill in the valid details.	The application should move forward if valid details are filled.	The application moves forward.	Pass
TC_04.1	Verify that nationality can be correctly filled.	The webpage should be working.	1) Launch the website. 2) Select nationality between Indian or others.	The list box should be working and should be able to select between India or Others.		
TC_05	Verify thar room details are correct.	The hotel's application should be working correctly.	1) Launch the webpage. 2) Fill all the room details.	The application accepts the details if valid and moves forward.		
TC_05.1	Verification for correct room number.	The user should only enter the number of rooms needed.	1). Click on the rooms list box. 2). Select number of rooms needed .	The number of rooms selected should be displayed.		
TC_05.2	Verification of the client age. Adults (above 12 years) - List Box. It is a Mandatory Field. Valid Data Range - 1-2. Children (below 12 years) - List Box. Valid Data Range- 0-4.	User should fill the number in the adult and children list box.	1) Click on the respective list box and select accordingly.	The number of rows should also coincide with the number of Rooms selected. The same set of List Box should be displayed for each row	The number of rows should also coincide with the number of Rooms selected. The same set of List Box should be displayed for each row	Pass

FIGURE 2.3 Test Cases

2.5.3 DEFECT REPORT

Serial no.	Defect id	Description	Reproducible (yes/no)	Steps to reproduce	Severity	Priority	Reported by	Reported dat
1	DF_01	On clicking the International radio button we should have two list boxes appear List box 1 of the Country and List box 2 of the city but in our case List Box 1 is not appearing.	Yes	1) Click on the international radio button. 2) Check wheather the list box 1 i.e. the country list box is appearing or not.	High	High	Spardha	5/4/2021
2	DF_02	An error message should be recived as the checkin date Is greater than the checkout date	Yes	1) Select the check-in date greater than the check-out date. 2) Check whether error messgae is displaying or not.	High	High	Spardha	5/4/2021
3	DF_03	The hotel details of the city entered should be displayed.	Yes	1) Select city Delhi. 2) Fill in all the necessay details. 3) Click on search and check that the selected city's hotel details are only coming.	High	High	Spardha	5/4/2021

FIGURE 2.4 Defect Report

2.5.4 RTM

Serial no	Requirement id	Requirment description	Test scenario id	Test case id	Defect id
1	REQ_01	Verification for the accessibilty of the website and also the whether the websitite is functioning properly or not.	TS_01	TC_01 TC_01.1	
2	REQ_02	Radio button functionality. To check whether the radio button works for both India as well as international.	TS_02	TC_02 TC_02.1	DF_01
3	REQ_03	Verification for check-in and check-out date.	TS_03	TC_03 TC_03.1 TC_03.2	
4	REQ_04	Verification that valid enteries are filled	TS_04	TC_04 TC_04.1	
5	REQ_05	Verification for correct room details	TS_05	TC_05 TC_05.1 TC_05.2	
6	REQ_06	Verification that final display page is working.	TS_06	TC_06 TC_06.1 TC_06.2	 DF_02 DF_03

FIGURE 2.5 RTM

CHAPTER-3
DATASOURCE

3.1 SQL

Structured Query Language is used to work with and access relational databases. It is many times referred to as "**English-Like**" because many of the SQL statements and commands are read and written like normal English. SQL is not a complete coding & programming language. It is a data sub-language which is used with the host language to work with the relational database. The programs which are written in SQL turn on to the host or main coding language to give it support for input and output control parameters.

3.2 ADVANTAGES OF USING SQL

- It is used to create new databases with tables and views.
- Used to insert and update records in a database.
- It can also be used to delete and retrieve data from a database.

3.3 TYPES OF SQL COMMANDS

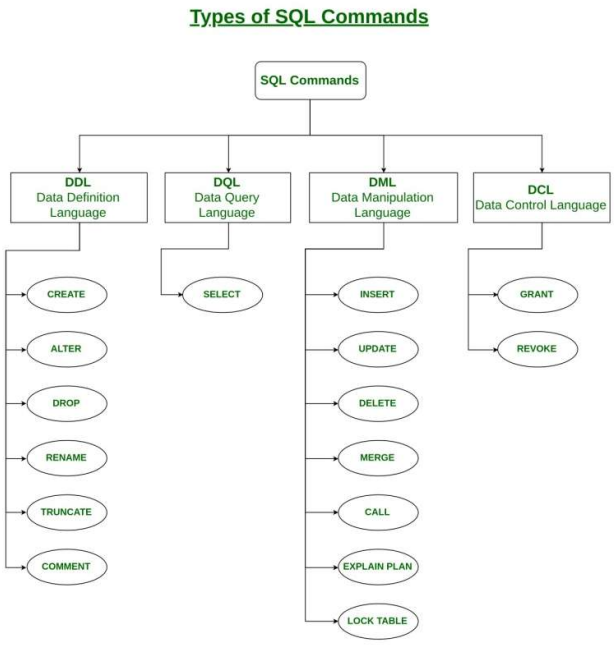

FIGURE 3.1 Types of SQL Commands [8]

3.3.1 DDL: Data Definition Language is the category of SQL commands which consists of those commands which are used when we have to either describe a database or define a schema. This command mainly alters the structure of the database along with its schema.[8]

TYPES OF DDL COMMANDS

- **CREATE**
- **DROP**
- **ALTER**
- **RENAME**
- **TRUNCATE**
- **COMMENT**

3.3.2 DQL: Data Query Language commands and statements are used when we want to select the information and data in the schema. The main objective of these statements and command, is to easily get schema based queries.[8]

TYPES OF DQL COMMANDS

- **SELECT**

3.3.3 DML: Data Manipulation Language, this type of commands is used to manipulate the data within a database.[8]

TYPE OF DQL COMMANDS

- **INSERT**
- **UPDATE**
- **DELETE**
- **MERGE**
- **CALL**

3.3.4 DCL: Data Control Language deals statements which are associated with the permissions related to a database [8]

TYPES OF DCL COMMANDS

- **GRANT**

- **REVOKE**

3.4 JSON

JSON full form is JavaScript object notation; it is used for the storage and exchange of information. During the exchange of any information between a server and a browser the information should only be present in a text format. JSON is in a text format and we can convert any JavaScript object to JSON text to exchange it. The data which we receive back in JSON format can again be converted into JavaScript object.

3.5 XML

XML stands for eXtensible Markup Language just like HTML. It is designed to store and exchange data. XML is self descriptive and has everything present in it i.e. the sender's information, the receiver's information, the heading, the content of body etc. Everything is enclosed within tags. The tags used in XML are not pre-defined and are created by the author according to his needs.

3.6 SQL ASSIGNMENT

1)

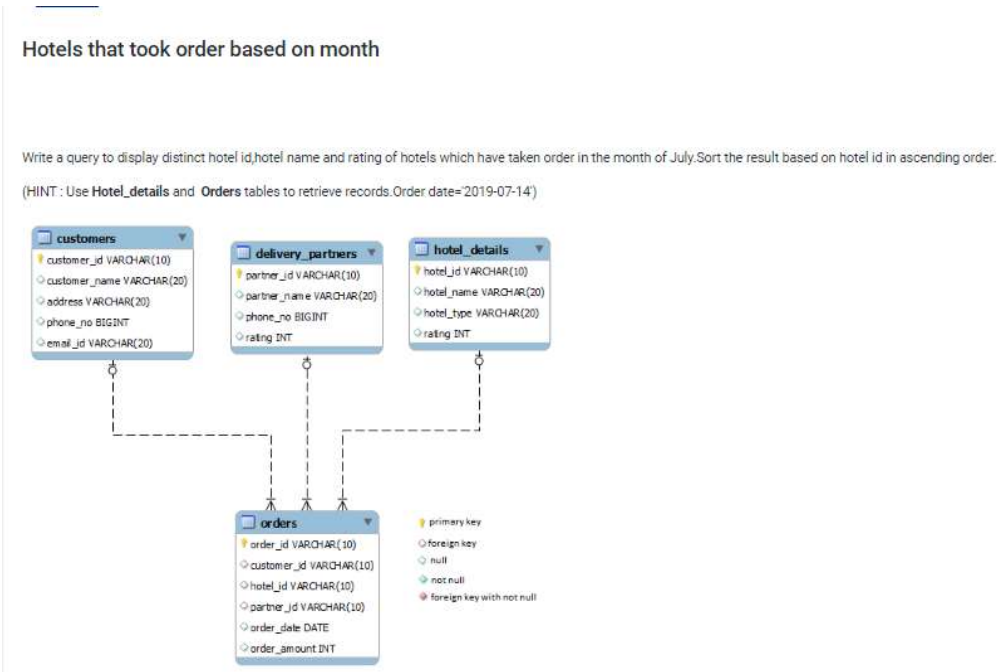

FIGURE 3.2 Hotel Database

sample.sql

```
1  SELECT DISTINCT h.hotel_id, h.hotel_name, h.rating
2  FROM hotel_details AS h
3  INNER JOIN orders as o
4  on h.hotel_id=o.hotel_id
5  where o.order_date between '2019-07-01' and '2019-08-01'
6  order by hotel_id;
```

FIGURE 3.3 SQL Code

Console: (Add Custom Input Below The Editor)

```
hotel_id        hotel_name      rating
H1001   A2B     5
H1002   BBQ     5
H1003   HBH     4
H1004   HMR     3
H1005   KFC     4
H1006   Saravana Bhavan 2
```

FIGURE 3.4 Output

2)

Total sale daywise

Write a query to display order_date, total order amount in each day. Give an alias name for total order amount as 'TOTAL_SALE'. Sort the result based on order_date.

(HINT : Use **Orders** table to retrieve records.)

NOTE: Maintain the same sequence of column order, as specified in the question description

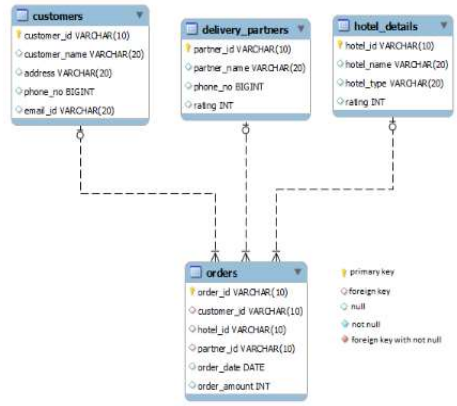

FIGURE 3.5 Total Sales Day wise

sample.sql

```
1  select order_date,sum(order_amount) as "TOTAL_SALE"
2  FROM orders
3  group by order_date
4  order by order_date;
```

FIGURE 3.6 SQL Code

FIGURE 3.7 Output

3.7 XML ASSIGNMENT

FIGURE 3.8 XML Question

FIGURE 3.9 Code

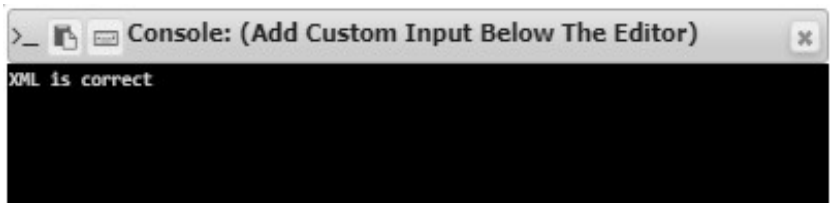

FIGURE 3.10 Output

CHAPTER-4
VB-SCRIPT

4.1 INTRODUCTION

VBScript also known as Visual Basic Script has been developed by Microsoft. The main objective of developing this was to develop dynamic web sites. It is a client side scripting language same like JavaScript. The syntax of VBScript matches that of visual basic.[9]

4.2 ENVIORNMENT SUPPORTED

VBScript is supported by 3 environments

1. ILS-Internet Information Server
2. WSH-Window Script Host
3. IE-Internet Explorer

4.3 DISADVANTAGE

The main drawback of using VbScript is that most of the browsers excluding IE will not process the vbscript code. Example if the site has visitors who use browsers other than IE then VbScript usage would be difficult.

4.4 HANDS-ON

1) FIND FACTORIAL
2) DISPLAY MONTH
3) FIND OCCURRENCE COUNT
4) GENERATE UNIQUE NUMBER

1)

```
1   dim number,f
2   number=InputBox("Enter the Number")
3   f=1
4   if number<0 Then
5   MsgBox "Invalid Number"
6   else if number=0 or number=1 then
7   MsgBox "1"
8   else
9   For i=1 to number
10  f=f*i
11  Next
12  MsgBox f
13  End If
14  end if
```

FIGURE 4.1 Factorial Code

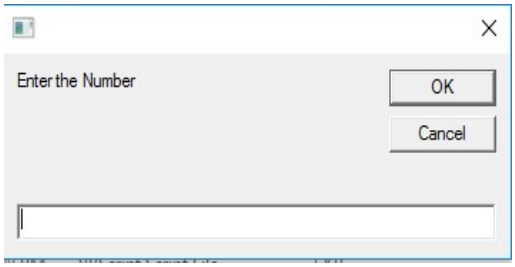

FIGURE 4.2 Enter the Number

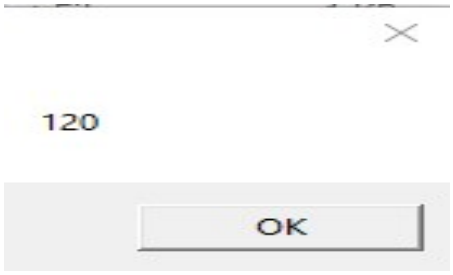

FIGURE 4.3 Output

2)

```
dim month
month=InputBox("Enter month number")
Select case month
case 1
MsgBox "January"
case 2
MsgBox "February"
case 3
MsgBox "March"
case 4
MsgBox "April"
case 5
MsgBox "May"
case 6
MsgBox "June"
case 7
MsgBox "July"
case 8
MsgBox "August"
case 9
MsgBox "September"
case 10
MsgBox "October"
case 11
MsgBox "November"
case 12
MsgBox "December"
case else
 MsgBox"Unknown Month"
          End select
```

FIGURE 4.4: Find Month code

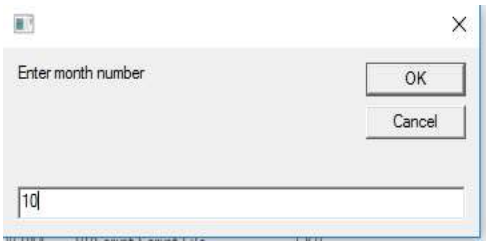

FIGURE 4.5 Enter the Month

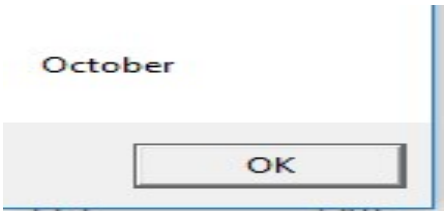

FIGURE 4.6 Output

3)

```
dim word,alphabet,Count
word=InputBox("Mention the word")
alphabet=InputBox("Alphabets to be found:")
Count=Len(word)-Len(Replace(word,alphabet,""))
msgbox "In " &word&  " , " &alphabet& " count is " &count& " times."
```

FIGURE 4.7 Occurrence Count Code

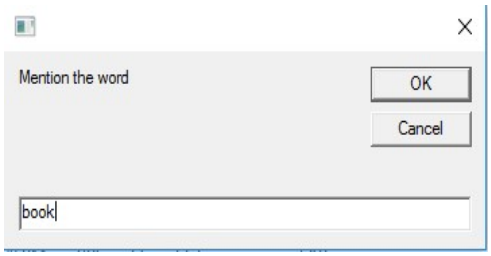

FIGURE 4.8 Mention the word

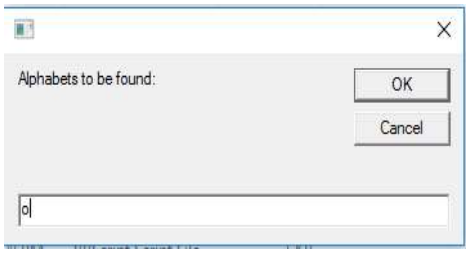

FIGURE 4.9 Alphabets to be Found

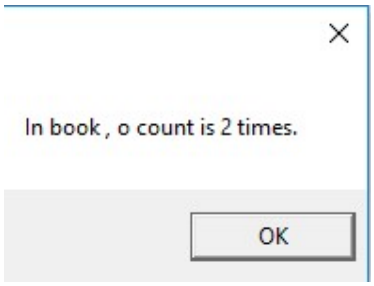

FIGURE4.10 Output

4)

```
1  wscript.echo DateString(now())
2
3  Function DateString(dDate)
4      DateString = Year(dDate)& right("0" & Month(dDate),2) &
       right("0" & Day(dDate),2) & right("0" & Hour(dDate),2) &
       right("0" & Minute(dDate),2) & right("0" & second(dDate),2)
5  End Function
```

FIGURE 4.11 Unique Number Code

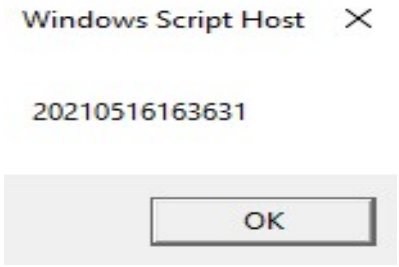

FIGURE 4.12 Unique Number Generations

CHAPTER-5
UFT AUTOMATION

5.1 INTRODUCTION

QTP's full form is Quick Test Professional. It is defined as a functional testing tool i.e. automated which provides helps the testers to run the automated tests to detect and figure out the errors, mistakes defects or any incomplete codes. This tool was initially designed by Mercury Interactive and was later on acquired by HP and at present it is with Micro Focus.

The new name for QTP is UFT i.e. Unified Functional Testing.UFT is used to test the GUI and API parts of the applications

5.2 DIFFERENCE WITH SELENIUM

5.2.1) LICENSE:

UFT is a commercial testing tool whose range may depend according to the business requirement of the company. It mainly has two licensing methods. Seat and Concurrent.
In case of Selenium, it is free testing software which can be downloaded by anyone and modified according to their business requirements.

5.2.2) AUTOMATION TECHNOLOGY SUPPORT:

UFT is capable of automating every kind of application be it web application, window application or any mobile based application, it can automate it with ease.
In case of Selenium, its automation is very limited and limited only to Web based applications.

5.2.3) OS SUPPORT:

Only windows os supports UFT. It isn't capable of execution on any other operating system, making it as one of its major setback.
On the other hand Selenium is capable of running on multiple operating systems such as windows, Mac, Linux.

5.2.4) BROWSER SUPPORT:

Both UFT and Selenium support all kind of browsers such as the Internet Explorer, Chrome, PhantomJS, Edge, Safari, and Firefox.

5.2.5) PROGRAMMING LANGUAGE SUPPORT:

The only language which UFT supports is VB Script. Java, C#, Python, Ruby and also JavaScript etc are supported with Selenium. Using some foreign third party developing apps this support of programming languages can be increased to other languages also.

5.2.6) FEATURES

UFT has a very strong and interactive UI along with IDE, its famous recording option. Whereas Selenium is only a library, although we have the option of downloading some free IDE and incorporating them within the Selenium library.

5.3 HANDS-ON

1) VERIFY ADD-INS

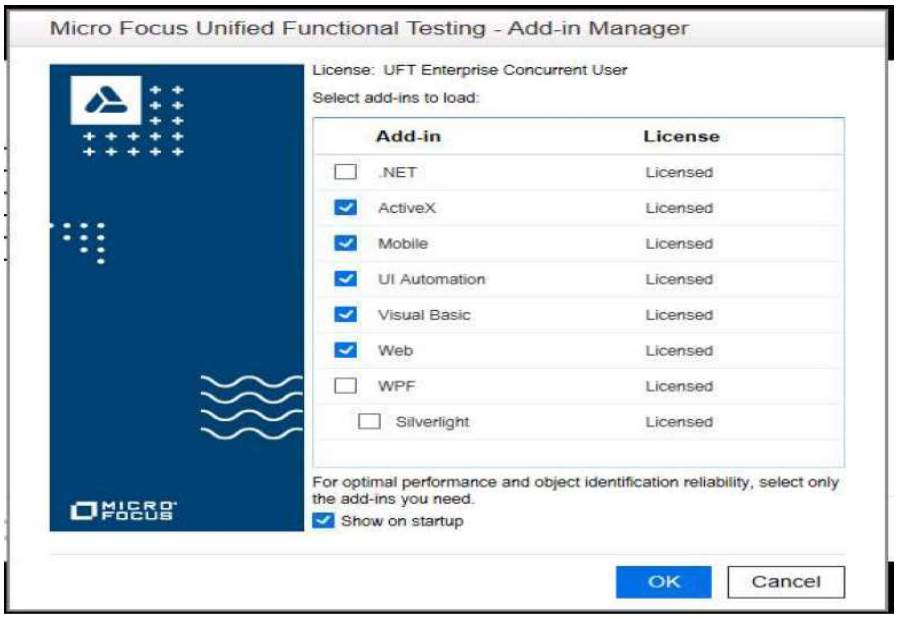

FIGURE 5.1 Add -Ins

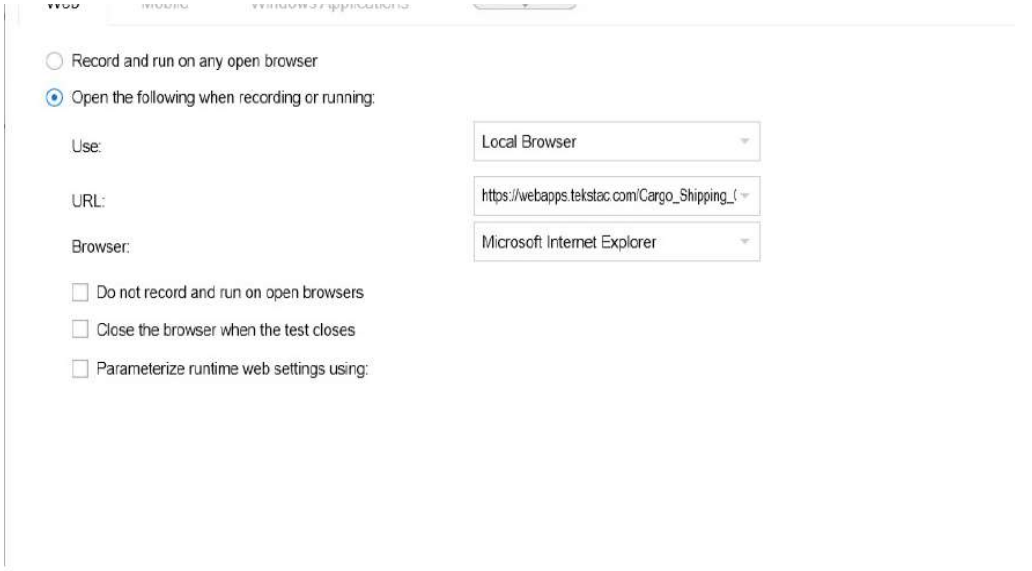

FIGURE 5.2 Screen

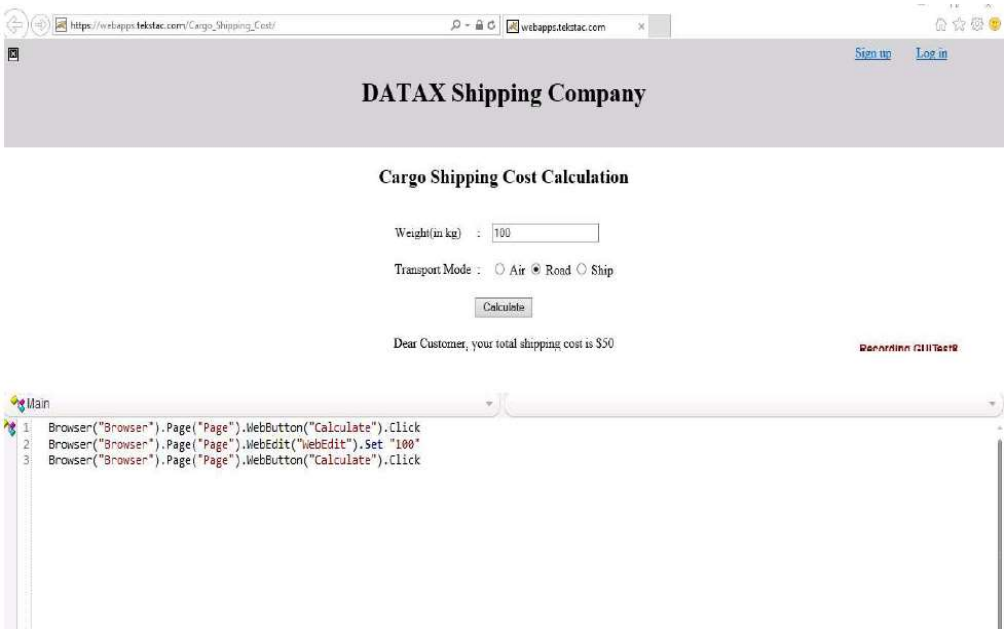

FIGURE 5.3 Code and Webpage

2) ENVIORNMENT VARIABLES

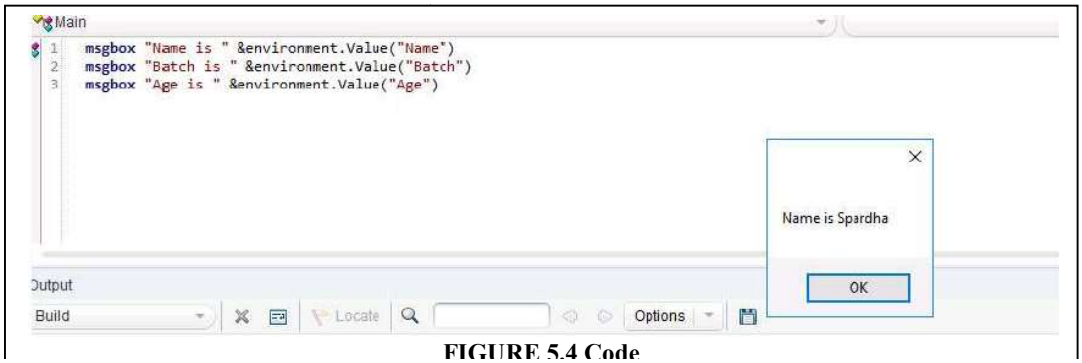

FIGURE 5.4 Code

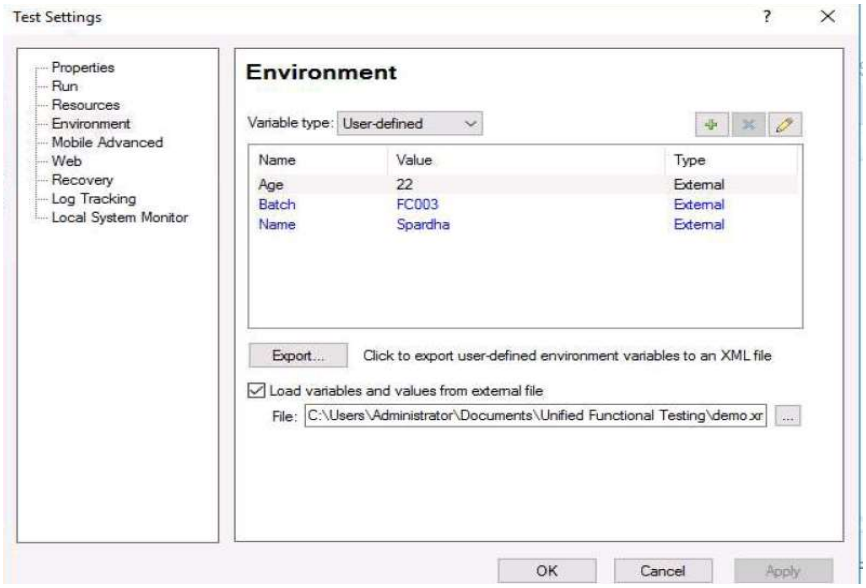

FIGURE 5.5 Test Settings

3) ARRAY IMPLEMENTATION

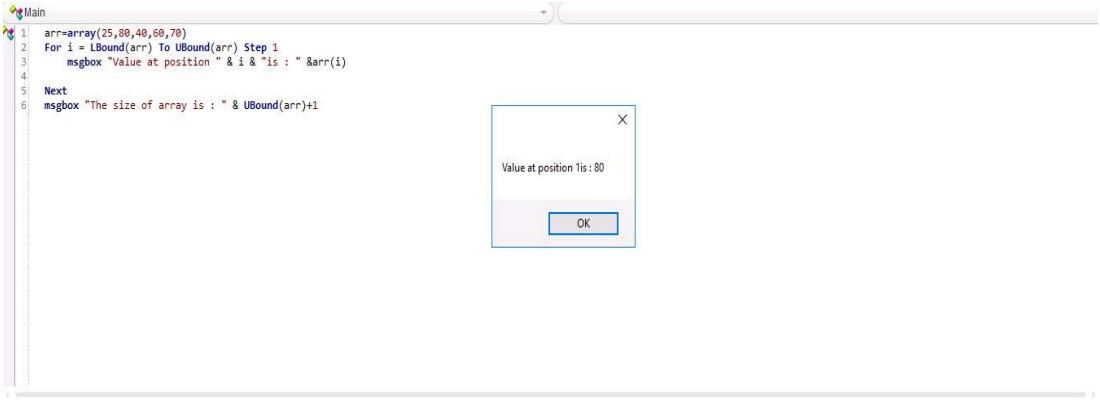

FIGURE 5.6 Array Code

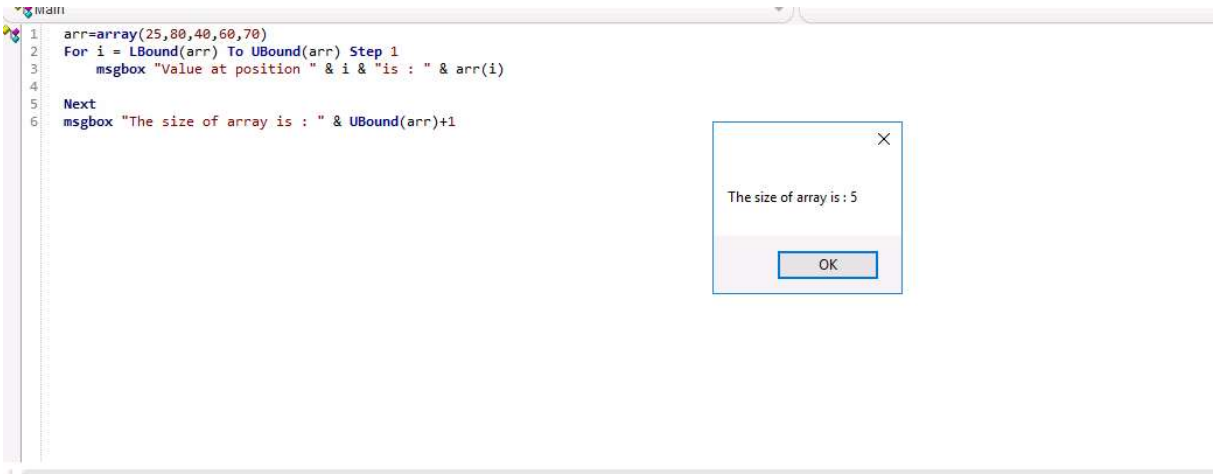

FIGURE 5.7 Output

CHAPTER-6
PROJECT
ROYAL CARIBBEN ALASKA-CRUISES

6.1 PROBLEM STATEMENT

Find the Holiday Cruises, search for Rhapsody of the Seas and check the number of search results greater than 300000 or not. Select a Deck plan of eight.

1. Open the application, check for the presence of Holiday Cruises.
2. Click on Holiday Cruises and Search for Rhapsody of the Seas.
3. Check that the number of search results displayed are greater than 300000
4. Find and Click on Deck plans.
5. Select view as Deck Eight.
6. Check that Royal Suite is displayed.

Suggested site: https://www.royalcaribbean.com/alaska-cruises

6.2 OUTPUT

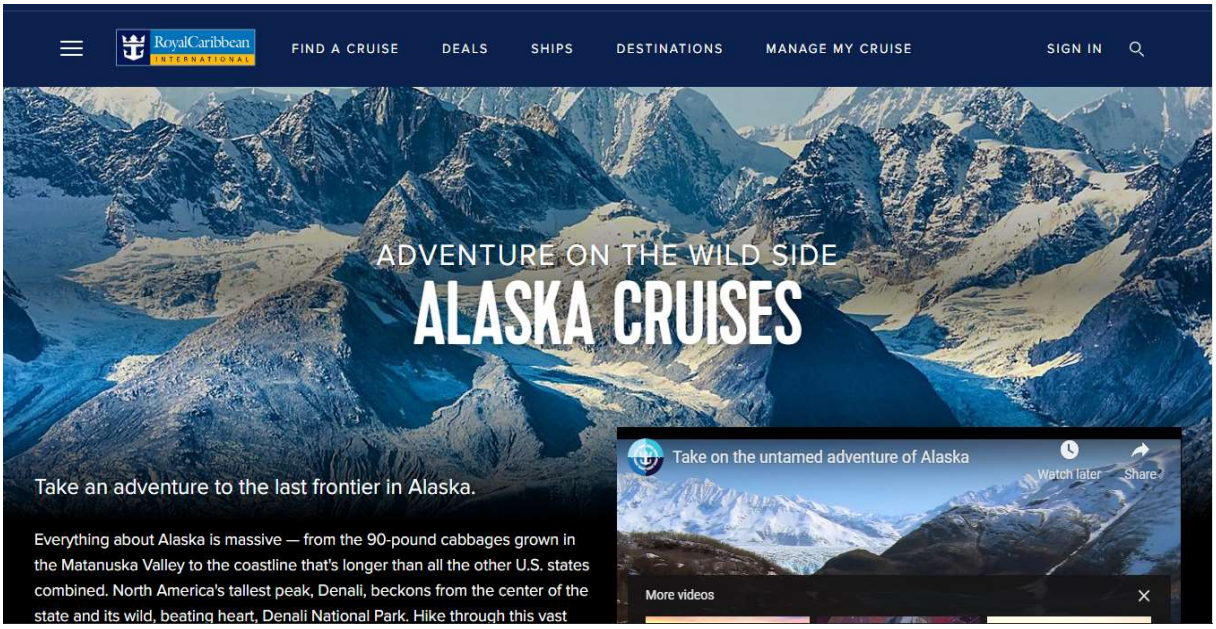

FIGURE 6.1 : Webpage

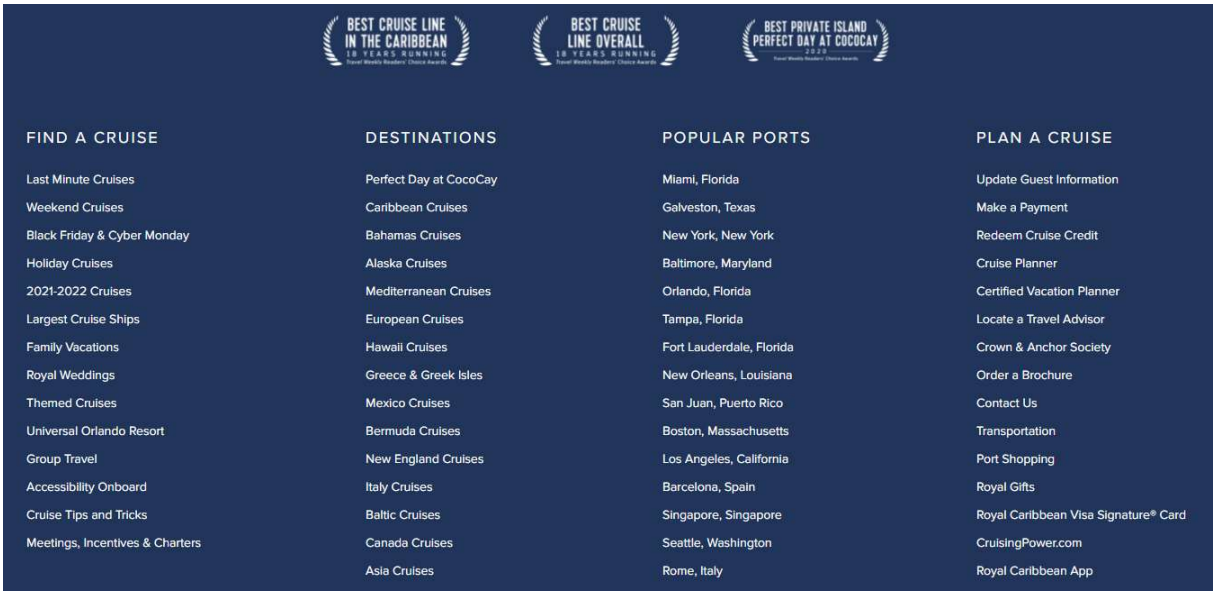

FIGURE 6.2 Webpage-2

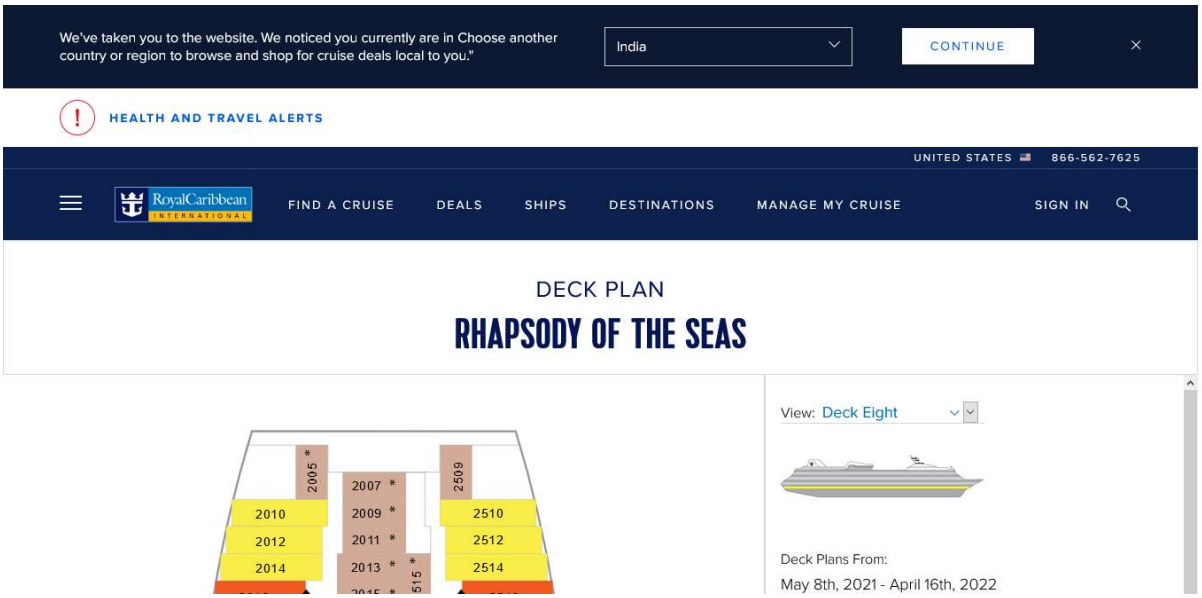

FIGURE 6.3 : Output

CHAPTER-7
CONCLUSION

In today's fast pace world, satisfying the business requirements of client's is a big responsibility. Making the customer believe in your company and its service is a big task.

With the help of software testing we are able to:

- Testing helps in reducing bugs and defects: Finding a bug at the design level is far cheaper than finding it and then solving it at the production level.
- With the help of testing we are able to deliver a well software or system which is able to meet each of the client's requirements thus increasing their faith in us.
- Another important feature is security, with the help of software testing we are able to detect and loop holes in the system from where the user's data can be breached, thus solving it.

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APPENDIX

```
Public Class cruises

        Public Shared ReadOnly Property Chromedriver As WebDriver
                Get
                        ' Setting path for the Chorme Driver
                        System.setProperty("webdriver.chrome.driver", "C:\Users\SRK\OneDrive\Desktop\Mini Project\Drivers\chromedriver.exe")
                        Dim driver As WebDriver = New ChromeDriver()
                        ' Maximizing the window
                        driver.manage().window().maximize()
                        Return driver
                End Get
        End Property

        Public Shared ReadOnly Property GeckoWebdriver As WebDriver
                Get
                        ' Setting path for the Gecko Driver
                        System.setProperty("webdriver.gecko.driver", "C:\Users\SRK\OneDrive\Desktop\Mini Project\Drivers\geckodriver.exe")
                        Dim driver As WebDriver = New FirefoxDriver()

                        ' Maximizing the window
                        driver.manage().window().maximize()

                        Return driver
                End Get
        End Property

End Class
```

```
Public Class main
        Inherits RoyalCarribeanAlaska

Public Shared Sub Main(ByVal args() As String)
                Dim royal As New RoyalCarribeanAlaska()
                Dim driver As WebDriver = royal.createDriver("chrome")
                royal.navigateUrl(driver)
                royal.verifyingTitle(driver)
                royal.holidayCruises(driver)
                royal.deckPlans(driver)
                royal.closeDriver(driver)

End Sub
End Class
```

```
Public Class RoyalCarribeanAlaska

        Public Shared driver As WebDriver
        Friend Shared d As New cruises()
        Friend Shared prop As Properties
        Friend launchUrl As Boolean
        Friend presence As String

        ' Getting the BrowserName from properties
        Public Shared Function getbrowser() As String
                ' To read the properties file create an object for properties class
                Dim prop As New Properties()

                Try

                        Dim input As Stream = New FileStream("C:\Users\SRK\OneDrive\Desktop\Mini Project\ProjectData\RoyalCarribeanAlaska.properties", FileMode.Open, F
                        ' to load the property file
                        prop.load(input)
                Catch e As IOException
                        Console.WriteLine(e.ToString())
                        Console.Write(e.StackTrace)
                End Try
                ' returns the value from the properties file
                Return prop.getProperty("browser")
        End Function

        ' Invoking the browser
        Public Overridable Function createDriver(ByVal browser As String) As WebDriver
                Dim driver As WebDriver = Nothing
                If browser.Equals("chrome", StringComparison.OrdinalIgnoreCase) Then
                        ' calling getChromeDriver from DriverSet class and initializing the static
                        ' WebDriver driver object
                        driver = cruises.getChromedriver()
                ElseIf browser.Equals("firefox", StringComparison.OrdinalIgnoreCase) Then
                        ' calling getGeckoWebDriver from DriverSet class and initializing the static


                          ' WebDriver driver object
                          driver = cruises.getGeckoWebdriver()
                 End If

                 Return driver

         End Function

         ' Closing the signUp pages
         Public Overridable Function closeSignup(ByVal driver As WebDriver) As Boolean

                 Dim email_capture As WebElement = driver.findElement(By.className("email-capture__close"))

                 Dim wait As New WebDriverWait(driver, 20)
                 wait.until(ExpectedConditions.visibilityOf(email_capture))

                 If driver.findElement(By.className("email-capture__close")) IsNot Nothing Then
                         driver.findElement(By.className("email-capture__close")).click()
                         Return True
                 End If

                 Return False

         End Function

         Public Overridable Sub navigateUrl(ByVal driver As WebDriver)
                 ' driver = createDriver("chrome");

                 Dim js As JavascriptExecutor = CType(driver, JavascriptExecutor)

                 driver.manage().timeouts().implicitlyWait(30, TimeUnit.SECONDS)

                 ' Launch the website, https://www.royalcaribbean.com/alaska-cruises
                 driver.navigate().to("https://www.royalcaribbean.com/alaska-cruises")
```

```
        Public Overridable Function verifyingTitle(ByVal driver As WebDriver) As Boolean
                ' driver = createDriver("chrome");
                ' navigateUrl();
                ' checking the correct url or not
                If driver.getTitle().Equals("Alaska Cruises: Alaskan Wild Beauty | Royal Caribbean Cruises") Then
                        launchUrl = True

                Else
                        launchUrl = False
                End If

                Return launchUrl
        End Function

Public Overridable Sub holidayCruises(ByVal driver As WebDriver)

                Try
                        closeSignup(driver)

                Catch e As Exception

                Finally
                        ' checking the Holiday cruises link
                        If driver.findElement(By.linkText("Holiday Cruises")) IsNot Nothing Then
                                presence = "pass"

                        Else
                                presence = "fail"
                        End If

                        Console.WriteLine("Holiday Cruises displays:" & presence)

                        ' clicking the Holiday Cruises
                        If String.ReferenceEquals(presence, "pass") Then

                                driver.findElement(By.linkText("Holiday Cruises")).click()
```

```
                ' Clicking the search button
                If driver.findElement(By.xpath("//*[@id=""rciSearchHeaderIcon""]")) IsNot Nothing Then

                        driver.findElement(By.xpath("//*[@id=""rciSearchHeaderIcon""]")).click()
                End If

                ' Search for "Rhapsody of the Seas"
                driver.findElement(By.xpath("//*[@id=""rciSearchInput""]")).sendKeys("Rhapsody of the Seas")

                driver.findElement(By.xpath("//*[@id=""rciSearchInputIcon""]")).click()

                Try
                        ' comparing the results
                        Dim results() As String = driver.findElement(By.xpath("//*[@id=""siteSearchApp""]/div[1]/div/div[2]/div")).getText().Split(" ")
                        Dim f As String = results(1)
                        Dim v As String = ""

                        For i As Integer = 0 To f.Length - 1
                                If f.Chars(i) = ","c Then
                                        Continue For
                                Else
                                        v &= f.Chars(i)
                                End If
                        Next i

                        If Integer.Parse(v) > 300000 Then
                                Console.WriteLine("Search Results is greater than 300000")
                        Else
                                Console.WriteLine("Search Results is lesser than 300000")
                        End If

                Catch e As Exception
                        Console.WriteLine(e.ToString())
                        Console.Write(e.StackTrace)
                End Try
        End Try
```

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