|  |
| --- |
| frugal testing |
| Assignment |
| Assignment link for video snapshots and resume : |
| <https://drive.google.com/drive/folders/1JoKvnEj56RrmqD8At4GZ0m4viecF3lMq?usp=sharing> |
|  |
| **Lalit kumar 11913160** |
| **11/5/2022** |

Automate the functionality to book the train from https://www.makemytrip.com/railways/

Check if you have landed in the correct page

Print the URL and Title of the Page

Click on FROM

Enter the city in FROM: DELHI

Click on TO

Enter the city in TO: LUCKNOW

Click on Travel Date

Select a date: 20 May

Click on class.

Select a class from dropdown: Third AC.

Click on SEARCH Button.

Record the Automation Script Running using any Screen Recording Software.

Share the drive link for the recording.

Save screenshots and logs of all the step.

**Code**

**import** java.time.Duration;

**import** java.util.function.Function;

**import** org.openqa.selenium.By;

**import** org.openqa.selenium.Dimension;

**import** org.openqa.selenium.WebDriver;

**import** org.openqa.selenium.WebElement;

**import** org.openqa.selenium.chrome.ChromeDriver;

**import** org.openqa.selenium.support.ui.WebDriverWait;

**public** **class** AutomationDemo {

**public** **static** **void** main(String args[]) **throws** InterruptedException {

System.*setProperty*("webdriver.chrome.driver", "C:\\browserdrivers\\chromedriver.exe");

WebDriver driver = **new** ChromeDriver();

Dimension newDimension = **new** Dimension(1920, 1080);

driver.manage().window().setSize(newDimension);

driver.get("https://www.makemytrip.com/railways/");

String url = driver.getCurrentUrl();

String titleOfPage = driver.getTitle();

System.***out***.println("The current url is: " + url + "\n The title of the page is: " + titleOfPage);

driver.findElement(By.*id*("fromCity")).click();

Thread.*sleep*(2000);

WebElement fromInput = driver.findElement(By.*cssSelector*("input[placeholder=\"From\"]"));

fromInput.click();

WebDriverWait wait = **new** WebDriverWait(driver, Duration.*ofSeconds*(20));

Thread.*sleep*(2000);

fromInput.sendKeys("DELHI");

WebElement fromSuggestionListBox = driver.findElement(By.*xpath*("//\*[@id=\"react-autowhatever-1\"]/div/ul"));

WebElement fromFirstSuggestion = wait.until(

**new** Function<WebDriver, WebElement>() {

**public** WebElement apply(WebDriver driver) {

**return** fromSuggestionListBox.findElement(By.*xpath*("//\*[contains(text(), 'Delhi - All Stations')]"));

}

});

fromFirstSuggestion.click();

Thread.*sleep*(2000);

WebElement toInput = driver.findElement(By.*cssSelector*("input[placeholder=\"To\"]"));

toInput.sendKeys("LUCKNOW");

WebElement toSuggestionListBox = driver.findElement(By.*id*("react-autowhatever-1"));

WebElement toFirstSuggestion = wait.until(

**new** Function<WebDriver, WebElement>() {

**public** WebElement apply(WebDriver driver) {

**return** toSuggestionListBox.findElement(By.*xpath*("//\*[contains(text(), 'Lucknow - All Stations')]"));

}

});

toFirstSuggestion.click();

Thread.*sleep*(2000);

**try** {

driver.findElement(By.*id*("departure")).click();

} **catch** (Exception e) {

// selenium was throwing an exception that the element was not clickable, as a

// way-around the method has been put inside an try-catch block

}

driver.findElement(By.*cssSelector*(".DayPicker-Day[aria-label=\"Fri May 20 2022\"]")).click();

driver.findElement(By.*cssSelector*("li[data-cy=\"3A\"]")).click();

driver.findElement(By.*cssSelector*("a[data-cy=\"submit\"]")).click();

driver.wait(300000);

driver.quit();

}

}

**Visit through the website of Frugal Testing:**

**1.What pages did you find crucial and why?**

First of all website of frual testing is really amazing it’s very interactive and fascinating look on surfing I found security page very crucial as it’s very integral and critical part for any organisation as nowadays there are many security vulnerabilities and I think providing service like that is really a difficult task as it deals with network, services, firewalls, IPs, APIs, servers, DDos, risk management, penetration and hacking issues as well dealing with all this testing and providing solutions for this is really very crucial and frugal testing is providing solutions for all such things makes itself amazing and this page may also take enough time to load as testing all such vulnerabilities is hard and time taking it may contains unknown entites viruses worms e.t.c

security testing is a big task it can contain malicious files and scanning all such things and proving solutions is crucial task and exploitation leads to executing lot of scripts it involves finding path traversal to vulnerabilities it escalates privilages of testing so I find it very crucial and important page in frugal testing website.

2.Tell us which of our case studies you find as most valuable and Why?

Well case study of frugal testing helped for a health care based web application I find it it as most valuable as a single error can cause a blunder when it comes to one’s health care in this case study The client, a leading Health Care firm, has designed a **chronic care management**and **patient safety improvement** application. And requirements were

* To verify **business-critical issues** which would have rendered the system unviable before Go Live.
* The system was unstable with **alerts not getting generated**for the correct scenario.

Frugal team performed a deep understanding of the application by thoroughly using the product, brainstorming and asking questions on functional flows.

Around **300 detailed test cases** were written to make sure each & every condition and flow is taken care.

Special attention was given to find out **'show stoppers'** and **unusual scenarios** were thought and tested.

Around **100 bugs** were found in three rounds of testing which included blockers, functional, UI, usability and performance issues.

Useful insights and suggestions were given to the client to enhance the user experience in terms of usability of the product.

This depicts how important it is and with the help of testing everything can be made efficient and vulnarabilitis can be solved

Reasons for your interest in this internship and what skills or experiences do you hope to gain?

The responsibilities which come with this position, indeed provide a great opportunity to showcase my talent & gives me room to grow.

Modern-day professions are growing leaps & bounds, I believe so should the professionals.

In the modern world, none has the time & effort to keep toiling without expecting fruitful results.

I am very well aware of my capabilities & I am sure that if given a chance along with resources which this firm holds, I can bring positive growth to your firm.

I intend to be a multi-tasker & would want to explore my capabilities under the grand banner like your company.

I have proved in the past that I have been a team player & haven’t ever shown my back to any responsibilities provided to me.

I want to join your firm to enhance my abilities & cement my career in your firm in the best possible manner.

Tell us about a situation where you had to work under pressure

Well recently when exams were going on my friend had an placement drive and he really needed to study for exam and preapare for drive as well and in that drive docker was one of major topic and he was quiet weak and needed some attention though my exams were on same time but I had good enough knowledge and iwas working on some project as well which I needed to finish before deadline it was very pressurised situation as a good friend I helped him and prepared for exam and finished my project before deadlined and everything was upto my expectation and I believe with patience calmness and hardwork everything is possible it’s just one should give his/her 100% effort

What are your strengths and areas of improvement? Elucidate two examples of each and how do you plan to work on your areas of improvement?

“I’m highly motivated and am extremely passionate about developing. I am known for completing projects ahead of deadlines, and I feel this is especially important when things are constantly evolving and changing. I take initiative and am always coming up with various ways to solve a problem without needing to wait for direction. I also am always up-to-date with the newest trends and am willing to try the latest thing

Well I’m motivated that’s why I’ve explored everything about automation I am new at this and did my best in this assignment

I am improving my programming skills (data structure) and practicing in web development

According to you what is the importance of work environment and what environment do you prefer to work in. How would you add value to our organization?

A positive working environment is a workplace that promotes an employee safety, growth and goal attainment. These environments are most conducive to a successful workforce as they encourage employees to perform to their highest ability. Companies can achieve a positive working environment by focusing on their overall culture, supporting employee growth and making employees feel safe and comfortable

So surely I’d prefer a positive working environment it helps in increasing productivity, improves morale,fosters growth and promotes collaboration.

What is your vision about life and professional career after 5 years?

A few of the goals I’ve set for myself over the next few years include being a penetration tester(I love hacking stuff ) and gaining new skills enjoying . I’m excited about the opportunities this job would provide me, I am certain that the coming five years will be productive for me. Working in an esteemed organization with a positive work environment can be rewarding. I can picture myself growing to the position I am working on. I feel the values of this organization can be advantageous to my career.In return, I see myself utilizing my knowledge to yield better outcomes. The five years ahead are a guide to me. They would take me to a target where I can cherish the achievements along the road

What is the impact of semiconductor chip shortage across the global economy?

If we talk recent impact of semiconductor chip world leaders and executives at multinational corporations are worried about the global scarcity of semiconductors, which has hit manufacturing and sales in numerous countries and no early solution is in sight.  
Since the initial months of the pandemic, a number of companies across sectors have highlighted their concerns about the problem. Demand for chips is exceeding supply, and many automobile manufacturers and consumer electronics companies across the world have said that production will be affected.  
The unforeseen situation is not expected to improve anytime soon, and supply constraints could potentially continue into 2023. Though companies are on a war footing to ramp up production, the problem will likely worsen before reaching a resolution.

The chip shortage is likely to be a short-term impediment to GDP growth. Although semiconductors directly contribute **only** about **0.3%** of U.S. **gross domestic product (GDP),** they are essential to **account for 12%** of **U.S. production.** As a result, supply chain bottlenecks are projected to account for **up to 1%** of **US** GDP **growth in 2021**

Please share the following details in your Profile :

* 1. LinkedIn Profile Link :<https://www.linkedin.com/in/lalitkumar020/>
  2. Resume (PDF file) : <https://drive.google.com/drive/folders/1JoKvnEj56RrmqD8At4GZ0m4viecF3lMq?usp=sharing>
  3. Any other Technical profiles like Hackerrank, CodeChef, Github, HackerEarth?

leetcode: <https://leetcode.com/lalit_kumar5365/>

What do you understand by test closure?

A test closure is a document that provides a summary of all tests performed during the software development lifecycle and a detailed analysis of fixes and bugs found. In other words, a test end is a note written before the test process is officially completed.

Checking the test termination criteria is very important to ensure that the test is complete. Before the end of the testing process, we measure the quality of our products according to our test completion criteria.

The entry criteria for this phase are completion of test case execution, availability of test results, and readiness of defect reports.

Test completion criteria include: −  
  
Target range achieved.  
No showstoppers or Critical Defects  
Few known defects of medium or low priority. They do not affect the use of the product.  
Criteria for completing this step are the submission of a test end report and the preparation of a matrix later signed by the client.

What is monkey testing?

Monkey testing is a software testing technique in which a user tests an application by entering arbitrary data and testing its behavior (or attempting to break the application). By default**,** this method runs automatically when the user enters arbitrary invalid data and validates the action**.**  
As the name gives a idea like mokeys are notorious they never follows a procedure, there are no rules**.** Thismethod does not follow any predefined tests or strategies**,** soit works accordingtothetester's mood and intuition**.**

Often this method is automated**.** OrI'd say you can write aprogram**/**script that can generate random input and inputit into the application under test and analyze its behavior. This technique works very well when doing load/stress testswhere you want to break your application by proving acontinuous random input**.**

Benefits of monkeytesting**:**  
  
Somenon**-**standarderrorscanbedetected**.** The  
iseasy to install and run**.**  
**"**Unskilled**"** resourcecandothis**.  
.** A good way to verify the reliability of yoursoftware**.  
.** Youcan identify errorsthat may have a greater impact.  
Affordable  
Monkey Test disadvantages**:**  
  
It may take several days for a bug to be discovered.  
The number of errors is less than **.** Reproducing the error (if any) is problematic**.**  
In additionto some errors**,** there may be some **"**unexpected**"** output fromthe test script**,** which is difficult and timeconsumingtoanalyze**.**

How do we create an Amazon EC2 instance?

to create an ec2 instance using aws management console, firstly we need to log into the aws management console after that move to the ec2 console so once you are in the ec2 console

if you don't have any instances running it'll show 0 here so let's click on launch instance here

so when you click on launch instance here it shows a lot of AMIS here so AMI basically stands for AMAZON MACHINE IMAGE so ami has an information about the software configurations like you know operating system and applications that come pre installed uh if you create that

instance using that ami you can also create your own custom ami and use that to launch

your ec2 instances intance can be created on free tier account to make sure that i create only the

instances which are eligible for free tire so i'll select this amazon line

here click on select and once you click on select it will ask you to select the type of

instance basically instance type so instance type uh there are a lot of instance types in aws depending on the number of you know vcpos and the memory so you can go to to select this t2.micro

which is eligible for free tire click on configure

so we can create only one instance and this is all the networking

configurations we will leave all this uh to the default itself

and click on next add storage so here in this section you can add any storage uh if you want

additional storage like you can add volumes to your ec2 instance if you need

but i'm not going to do that and here and make sure that you

check this delete on termination so if once i terminate this easy to instance all this uh you know

storage associated with this will be deleted and uh next click on add tags so

basically this uh this section is to add the tags um these are purely optional

like i mean you can add anything i mean any tags just to

identify uh this instance so if this instance belongs to any team so we can add a tag called team and dev so this is purely optional and let's click on configure security group so the security group is

where you configure the inbound and outbound traffic to your ec2 instance so

basically what do you want to like come in whom do you want to allow to connect

to your ec2 instance and stuff like that so if you see when creating a new security group let's call it my c2 security group and these are the rules that are also if you want you can remove the rules or add

any rules new rules that you want so if you want to allow an https traffic or https traffic into your instance you can you know select this and you can allow on port and from where do you want all of and stuff like that so i'm not going to do it here so you can go to to add only one role which is

you can go to to allow ssh connection into my ec2 instance

and this is the source from where do you want value so you can select any custom

ips here or you can select anywhere so when you select anywhere anyone from the

internet like comment connect to your ec2 instance if they have the ppk file

so um this is not a recommended setting because it exposes your instance to your

internet so but you can go to to select this for now and click on review and launch and

click on launch so this uh takes to this keypad so keypair is basically uh useful when you want to connect your vc to instance using ssh clients so you can go to create a new keypair and you can go to

call it my easy to key and make sure that you download this keypair now itself because you will not

be able to download it at a later point of time so when you click on download

keeper it downloads this file and once that is done click on launch

instance here so it takes some time to launch instance so it says your instances are now launching so if you go to the cc to console now it says i mean the instance is still in pending state so let's give it some time so now if you see that my instance is in a running state so if i click on this

instance so these are the instance details like i mean this is the public ipv4 address of this instance .and our instance will be launched.

Explain the PDCA cycle?

The PDCA/PDSA cycle is a continuous loop of planning, doing, checking (or studying), and acting. It provides a simple and effective approach for solving problems and managing change. The model is useful for testing improvement measures on a small scale before updating procedures and working practices.The approach begins with a Planning phase in which problems are clearly identified and understood, and a theory for improvement is defined. Potential solutions are tested on a small scale in the Do phase, and the outcome is then studied and Checked.Go through the Do and Check stages as many times as necessary before the full, polished solution is implemented, in the Act phase of the cycle.

Cycle goes like this

PLAN:  
here we Recognize an opportunity (either a problem or an improvement). We Plan a change (either to solve a problem or to improve some areas) and decide what goal to achieve.  
Here we define the objective, strategy, and supporting methods to achieve the goal of our plan.  
DO:  
To design or revise the business requirement as planned  
Here we implement the plan (in terms of putting the plan into action) and test its performance  
CHECK:  
Evaluate the results to make sure whether we reach the goals as planned  
Here we make a checklist to record what went well and what did not work (lessons learned)  
ACT:  
If the changes are not as planned then continue the cycle to achieve the goal with a different plan.  
Here we take action on what is not working as planned. The challenge is to keep trying to improve the process with otherplans**.**

Share a pseudo-code to find duplicate characters in the string. Example: INPUT: “**Welcome to Frugal Testing**”, OUTPUT: “**eltg**”.

1. Take input string in main

2. Define a function named print duplicates**(void printDup(string& str)**

)

3.iterate through the string using nested for loop

**for(int i=0; i<n; i++)**

**{**

**for(int j=i+1; j<n; j++)**

**{**

**}**

**}**

4. keep i at the current index and iterate j for all indexes after i

5. Under the inner loop check for blank spaces and if any break the inner loop

**if(str[i]==' ')**

**{**

**break;**

**}**

6. Under the inner loop check for repeated letter if any print that letter and break the inner loop

**if(str[i]==str[j])**

**{**

**cout<<str[i];**

**break;**

**}**

7. end the function

8 call that function inside main**[printDup(str);]**

#include<bits/stdc++.h>

using namespace std;

void printDup(string& str)

{

int n=str.length();

for(int i=0; i<n; i++)

{

for(int j=i+1; j<n; j++)

{

if(str[i]==' ')

{

break;

}

if(str[i]==str[j])

{

cout<<str[i];

break;

}

}

}

}

int main()

{

string str="Welcome to Frugal Testing";

printDup(str);

}

Is Automation Testing A Complete Replacement For Manual Software Testing? What is your view on this?

Well complete replacement is not possible as there are times we prefer manual testing over automation

Manual testing is preferred over automated testing in the following scenarios**:**  
When the project is in the early stages of development.

When testing the user interface**,** especially the visual aspect**.**  
When the project is short-lived and takes longer to script compared to manual testing**.**  
When exploratory or ad hoc testing isrequired**.**  
When test casesare not suitable for automation. Captcha example.

Automated testing is preferred over manual testing in the following scenarios**:**

To handle repetitive and time-consuming tasks

When there is a need of parallel testing

To do non-functional testing like load, performance, stress testing

To avoid human errors

So we can say complete replacemet is not possible both are significant and necessary

This concludes our post on manual and automated testing**.** The true value of manual and automated testing comes when the right type of testing is applied in the right environment. We hope you understand the difference between manual and automated testing and thepros and consof the two**.**

Give some examples of web applications that are used in day-to-day life? How will you improve their performance, please elaborate?

Well one very common web application we say flipkart ad ecommerce applications that we use in our daily life we sometimes see there are some security misconfiguration sometimes there are some common threats like SQL injection crosssite forgeries failure to restrict url access are very common issues that we can improve in their performance and let’s say another web application payments apps we face common issues of payments failures and sometimes if we sent money to wrong person it is lost completely we can add some more security to such apps by providing more important information of receivers and in many web applications we face credential management attackers easily steals credential and use them to gain access to our web application and we can work on error handling in many web applications they show 404 error not found type problems these are very common we need to improve their performance in this regards

http response splitting, verb tampering and sometimes improper certificate validations are also some common problems that occur usually we should work on them as well

Please write an article on any ONE of the below topics

Agile and DevOps

DevOps is nothing but a practice or methodology of making "**Developers**" and "**Operations**" folks work together. DevOps represents a change in the IT culture with a complete focus on rapid IT service delivery through the adoption of agile practices in the context of a system-oriented approach.

Where as The Agile involves continuous iteration of development and testing in the **SDLC** process. Both development and testing activities are concurrent, unlike the waterfall model. This software development method emphasizes on incremental, iterative, and evolutionary development.

When evaluating DevOps versus agile, it is important to understand the overall philosophy of each, where they’re similar and where they’re different, as well as how to integrate each within your team. DevOps and Agile are not mutually exclusive—you can incorporate aspects of each in your business. The information below will help you gain a broader understanding of the key similarities and differences between DevOps and agile.   
DevOps is a practice of bringing development and operation teams together.

Agile refers to the continuous iterative approach, which focuses on collaboration, customer feedback small, and rapid releases.

Devops purpose is to manage end to end engineering process .

Where as agile focuses to manage complex projects and constant changes

The DevOps divides and spreads the skill set between development and the operation team.

The Agile development emphasizes training all team members to have a wide variety of similar and equal skills.

In DevOps, developing, testing, and implementation all are equally important.

Whereas developing software is inherent to agile  
DevOps contributes to creating better quality with automation and early bug removal. Developers need to follow Coding and best Architectural practices to maintain quality standards.

The Agile produces better applications suites with the desired requirements. It can quickly adapt according to the changes made on time during the project life.

Both DevOps and agile offer a structure and framework that can speed software delivery You do not need to choose between DevOps or agile—instead, you can make use of both methodologies. Agile is strong on methods to organise work, such as through Scrum or Kanban and DevOps drives a broader culture of getting software delivered faster and more reliably.

Instead of a decision of DevOps versus agile, the question—actually—is how to practice both. When considering how to build a development practice with the best of DevOps and agile, here are some examples of key benefits and features that can help you create a highly optimized development environment.

Agile is the standard for application development today. Development teams have implemented it over the past decade, which has proven to be an effective methodology for producing high-quality software. Agile improved the user experience and was often rewarded with focused goals and quick deliveries.  
  
The widespread use of DevOps in Agile methodologies has also made it a more attractive approach to IT advertising. In this context, it is important to know that Agile is not DevOps and DevOps is not Agile. It is difficult to achieve success in DevOps, if Agile practices are not followed. While Agile can make sense independent of DevOps, it can be more complete when accompanied by DevOps practices.Here are the emerging Agile and DevOps Trends.  
  
Planning for Unplanned work: In the DevOps circle, those using Agile acknowledges that Scrum is used to track the planned work. Tasks like releasing updated system, performing system upgrades etc, can be planned. On the other hand, the operations like performance spikes, system expiry, and standard security, can be unplanned. This type of action requires an immediate response. Can't wait for the next sprint planning session. For this reason, many organizations use DevOps (more used than Scrum and Kanban) to help keep track of both types of work.  
  
Speed ​​vs Risk: Teams using Agile with and without DevOps need to remember that they need a strong application structure and a solid foundation to support rapid change. Applications should have a good basic structure that team members should always use.  
  
Agile and Quality: Both Agile and DevOps help develop an application fast, keeping sound structure and riskfree application. But neither of them concentrates on the quality of the product. Mostly, IT organizations rely on the ‘fail fast’ principle “ Early failures cost less to fix”. But with this, only fast deployments can be maintained, not quality

**The following questions have no right or wrong answer. It is a basic measure to judge your personality. Please exhibit integrity while answering the following. You need to choose only one option.**

**You are totally exhausted because your week was endless and less than great. How are you going to spend your weekend?**

I'll call my friends to ask about their plans. I heard that a new restaurant opened / a nice comedy is playing in the cinemas / there are big discounts at the paintball club. We should all go out together.

**Which of these 2 descriptions suits you more?**

The most important thing for me is what's happening here and now. I assess real situations and pay attention to details.

**A competitor of your current employer is trying to entice you. You have doubts because the salary is much higher there, but the staff here is great. Moreover, the head of your department hinted that he will recommend you to the bosses when he retires. How are you going to make a decision?**

I'll continue with the same job as long as the manager retires by weighing up all the options.

**Only 2 weeks are left before your close friends' wedding. How are the preparations going?**

Why prepare? I'll be having fun and enjoying myself at the party. I'll improvise my wedding speech. The best things happen spontaneously.