

Software Testing
EPAM
A Training Report

Submitted in partial fulfilment of the requirements for the award of degree of

Bachelor of Technology
Computer Science and Engineering
(Software Testing)

LOVELY PROFESSIONAL UNIVERSITY
PHAGWARA, PUNJAB



From 13/01/2023 to 28/04/2023

SUBMITTED BY

Name of the student: Mohiuddin
Registration Number: 11914561
Signature of the student: Mohiuddin

SUBMITTED TO

Name of the supervisor: **Sakshi**
Designation:
Signature of the supervisor:

Student Declaration

To whom so ever it may concern

I, Mohiuddin , 11914561 , hereby declare that the work done by me on "**SOFTWARE TESTING TRAINING**" from 13th january-2023 to 28th April, under the supervision of **Sakshi, EPAM**.

Designation, EPAM, Designation, Lovely professional University, Phagwara, Punjab, is a record of original work for the partial fulfillment of the requirements for the award of the degree, Computer Science and Engineering.

Name of the Student (Registration Number)

Mohiuddin(11914561)

Mohiuddin

Signature of the student Dated: 01/05/2023

Declaration by the supervisors

To whom so ever it may concern

This is to certify that Mohiuddin 11914561 from Lovely Professional University, Phagwara, Punjab, has worked as a trainee in Epam on “Software Testing” under my Supervision from **13th January 2023 to 28th April**. It is further stated that the work carried out by the student is a record of original work to the best of my knowledge for the partial-fulfillment of the requirements for the award of the B-TECH, Computer Science and Engineering.

Name of External Supervisor

Name of Internal Supervisor

Sakshi

Human Resource Manager

Designation of the External Supervisor

Assistant Professor

Designation of the Internal Supervisor

Signature of the external Supervisor

Signature of the Internal Supervisor

Dated:

Dated:

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Undertaking by the student for submitting Final Certificate of six months Internship

Reg No: 11914561

Student Name: Mohiuddin

Program Name: B Tech, CSE

Batch Year: 2019-2023

Course Code: CSE441

We understand that We have been provisionally allowed to appear for the ETP viva and We hereby declare that since we on 6 months Internship, thus we shall submit my final certificate of 6 months Internship to university after completion of my internship but not later than Feb 2023.

We are aware that in case, I am unable to submit the same till the above-mentioned date, my final evaluation of internship shall be discarded by the university, and I grade shall be awarded in the result.

CHAPTER!

INTRODUCTION TO COMPANY

1.1 About EPAM

EPAM Systems is a global technology services company that provides software engineering, digital platform engineering, and product development services to businesses in various industries. The company was founded in 1993 in Princeton, New Jersey, and has since grown to over 47,000 employees across 35 countries.

EPAM's services include application development, testing and maintenance, digital platform engineering, UX design, data and analytics, and consulting. The company serves clients in various industries, including financial services, healthcare, retail and distribution, travel and hospitality, and media and entertainment.

EPAM is recognized as a leader in the software development industry and has won numerous awards for its work. The company has been listed on the Forbes list of America's Best Employers, the Fortune 100 Fastest-Growing Companies list, and the Forbes Global 2000 list of the world's largest public companies.

EPAM's mission is to help clients leverage digital technologies to transform their businesses and improve their customer experiences. The company is committed to innovation, collaboration, and delivering high-quality solutions to its clients.

Company's Vision and Mission

EPAM's vision is to be the digital platform engineering and software engineering partner of choice for the world's leading organizations. The company aims to achieve this by delivering innovative and high-quality solutions that help clients transform their businesses and stay ahead of the competition.

EPAM's mission is to help clients leverage digital technologies to create engaging and personalized experiences for their customers. The company is committed to delivering measurable value to its clients by providing expert guidance, innovative solutions, and exceptional service.

EPAM's values are centered around innovation, collaboration, excellence, customer focus, and social responsibility. The company believes in fostering a culture of continuous learning and development, where employees are encouraged to innovate and contribute to the success of their clients.

Overall, EPAM's vision and mission are focused on helping its clients succeed in the digital age by providing expert guidance and innovative solutions that transform their businesses and enhance their customer experiences.

Company Core Values:

Innovation: EPAM encourages its employees to be innovative and to explore new ideas and approaches in order to develop cutting-edge solutions for its clients.

Collaboration: EPAM values teamwork and collaboration, recognizing that the best solutions are often developed through the combined efforts of a diverse group of individuals.

Excellence: EPAM strives for excellence in everything it does, from the quality of its solutions to the level of service it provides to its clients.

Customer focus: EPAM is committed to understanding its clients' needs and preferences in order to deliver solutions that meet or exceed their expectations.

Social responsibility: EPAM is committed to being a responsible corporate citizen and to making a positive impact in the communities where it operates.

Origin and growth of company

EPAM Systems was founded in 1993 in Princeton, New Jersey by Arkadiy Dobkin and Leo Lozner, who were both software engineers. The company started as a small software development startup with a handful of employees, primarily serving clients in the financial services industry.

In the early years, EPAM focused on providing custom software development services to its clients. However, as the company grew, it expanded its offerings to include digital platform engineering, product development, and consulting services.

EPAM experienced significant growth throughout the 2000s and 2010s, expanding its global footprint and increasing its employee base. The company went public in 2012, trading on the New York Stock Exchange under the ticker symbol "EPAM."

Today, EPAM has over 47,000 employees across 35 countries, serving clients in various industries, including financial services, healthcare, retail and distribution, travel and hospitality, and media and entertainment. The company has received numerous awards for its work, including being recognized as a leader in the software development industry.

EPAM's growth has been driven by its focus on delivering innovative solutions to its clients and providing exceptional service. The company has also invested heavily in its employees, fostering a culture of continuous learning and development to ensure that its workforce is equipped to handle the challenges of the digital age.

Various departments and their functions

EPAM Systems has various departments that work together to deliver high-quality solutions to its clients. Here are some of the key departments and their functions:

Software Engineering: This department is responsible for developing custom software solutions for clients across various industries. The team works closely with clients to understand their business needs and develop software that meets their specific requirements.

Digital Platform Engineering: This department focuses on designing and building digital platforms that enable clients to deliver engaging and personalized experiences to their customers. The team leverages cutting-edge technologies to create scalable and secure platforms that can handle large volumes of data and traffic.

Product Development: This department is responsible for developing and launching new products for clients in various industries. The team works closely with clients to identify market opportunities and develop products that meet customer needs and preferences.

Quality Assurance and Testing: This department is responsible for ensuring that all software and digital platforms developed by EPAM meet the highest quality standards. The team uses a variety of testing methodologies to identify and resolve issues before software is released to clients.

UX/UI Design: This department is responsible for designing user interfaces and experiences that are intuitive, engaging, and visually appealing. The team works closely with clients to understand their target audience and design interfaces that meet their needs and preferences.

Data and Analytics: This department focuses on leveraging data and analytics to drive business insights and inform decision-making. The team works with clients to collect, analyze, and visualize data, providing actionable insights that can improve business performance.

Consulting: This department provides strategic guidance to clients, helping them navigate the complex landscape of digital transformation. The team works closely with clients to understand their business objectives and develop solutions that drive growth and profitability.

CHAPTER2

INTRODUCTION TO PROJECT

Objectives of the work undertaken:

Ensure that the website functions properly: The primary objective of the testing is to ensure that the website is functioning as intended. This involves testing the basic functionality of the website, such as navigating to different pages, searching for products, and adding products to the cart.

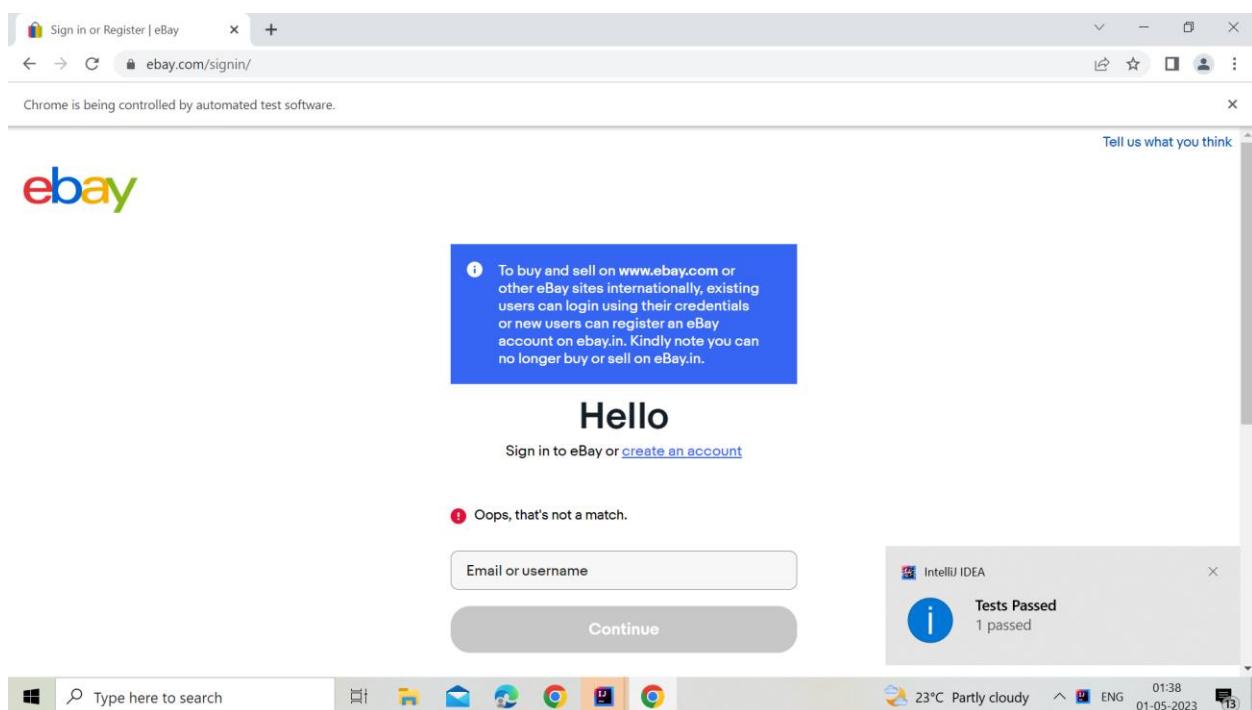
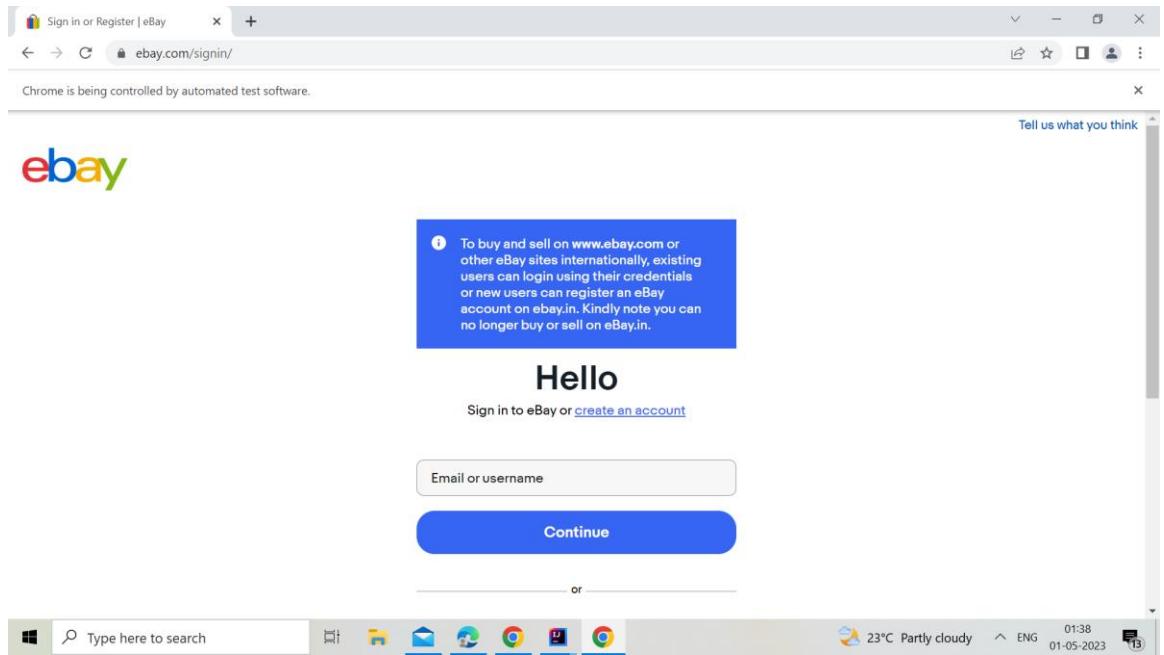
Evaluate the usability of the website: The second objective of the testing is to evaluate the usability of the website. This involves testing the user interface of the website, including the layout, navigation, and ease of use.

Test the performance of the website under various conditions: The third objective of the testing is to test the performance of the website under different conditions, such as high traffic and slow internet speeds. This will help identify any bottlenecks or issues that may affect the website's performance.

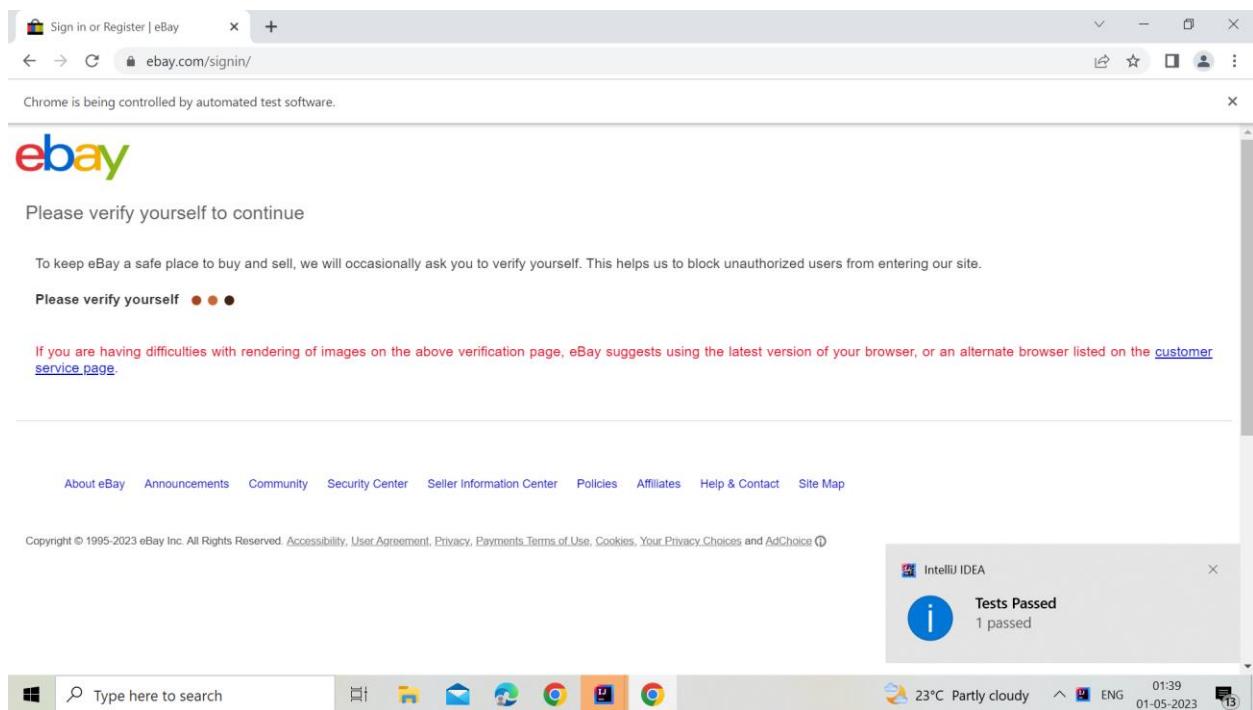
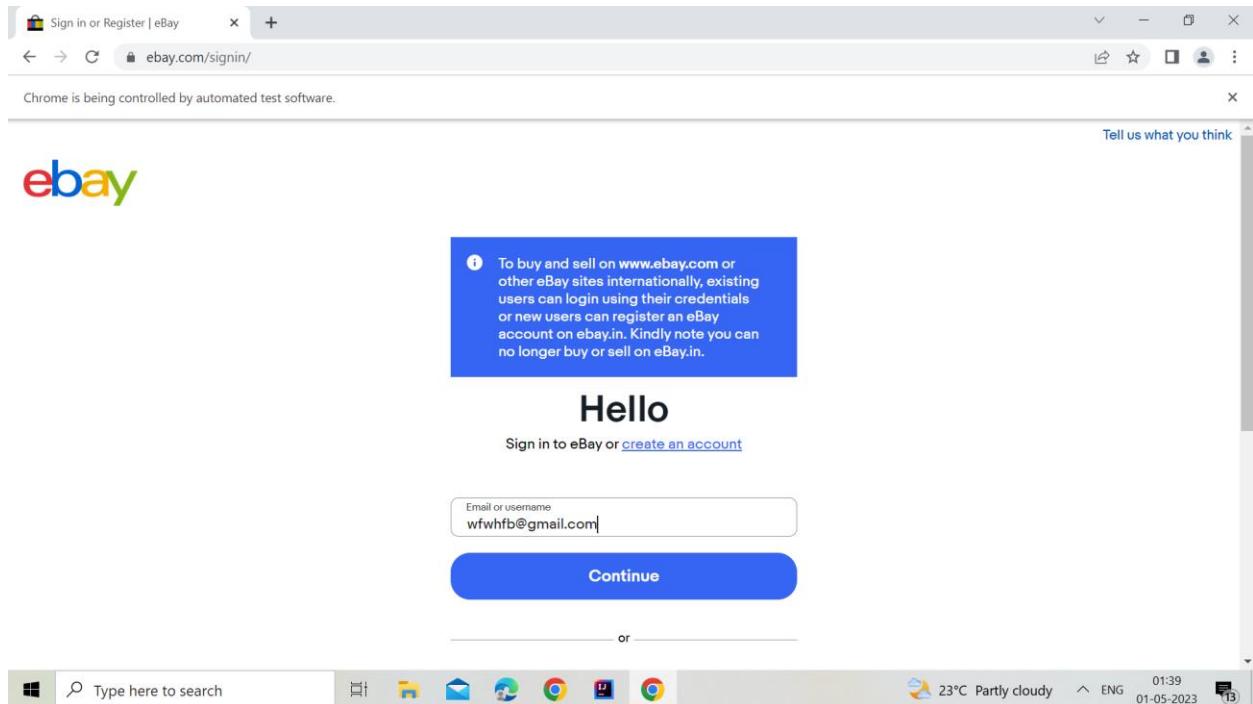
Scope of the Work:

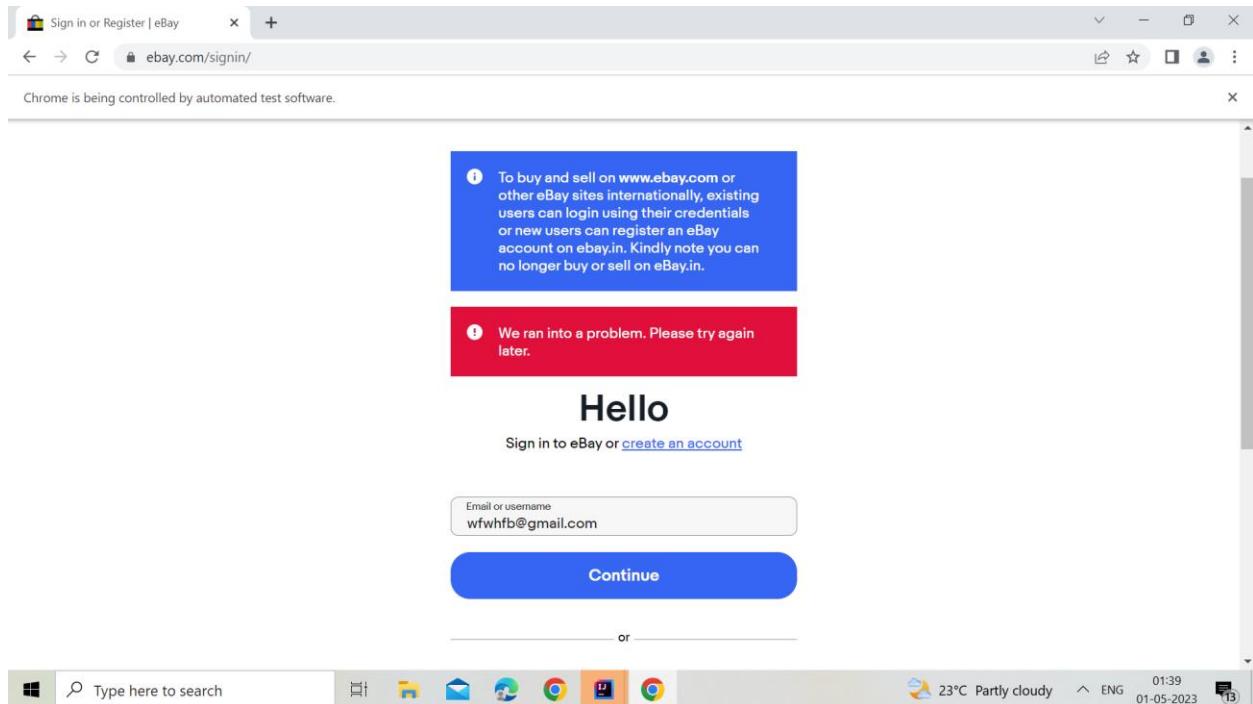
The scope of the testing was limited to the following areas:

Test login form with empty credentials test

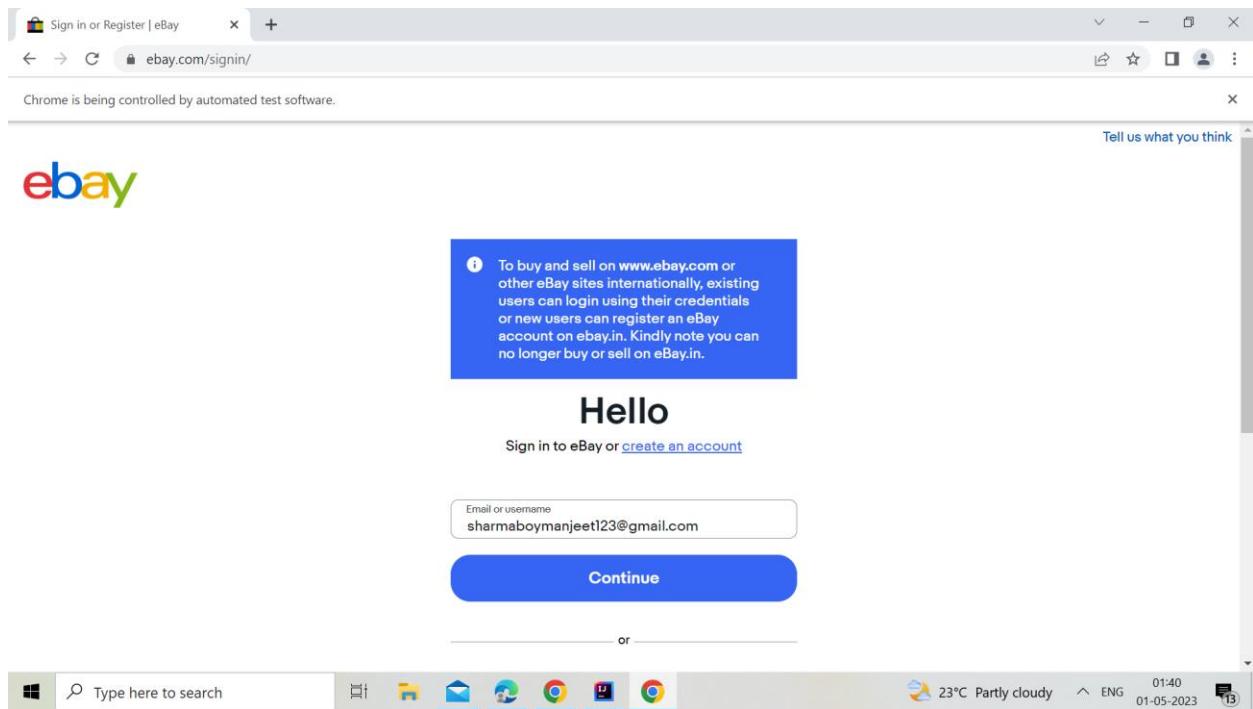


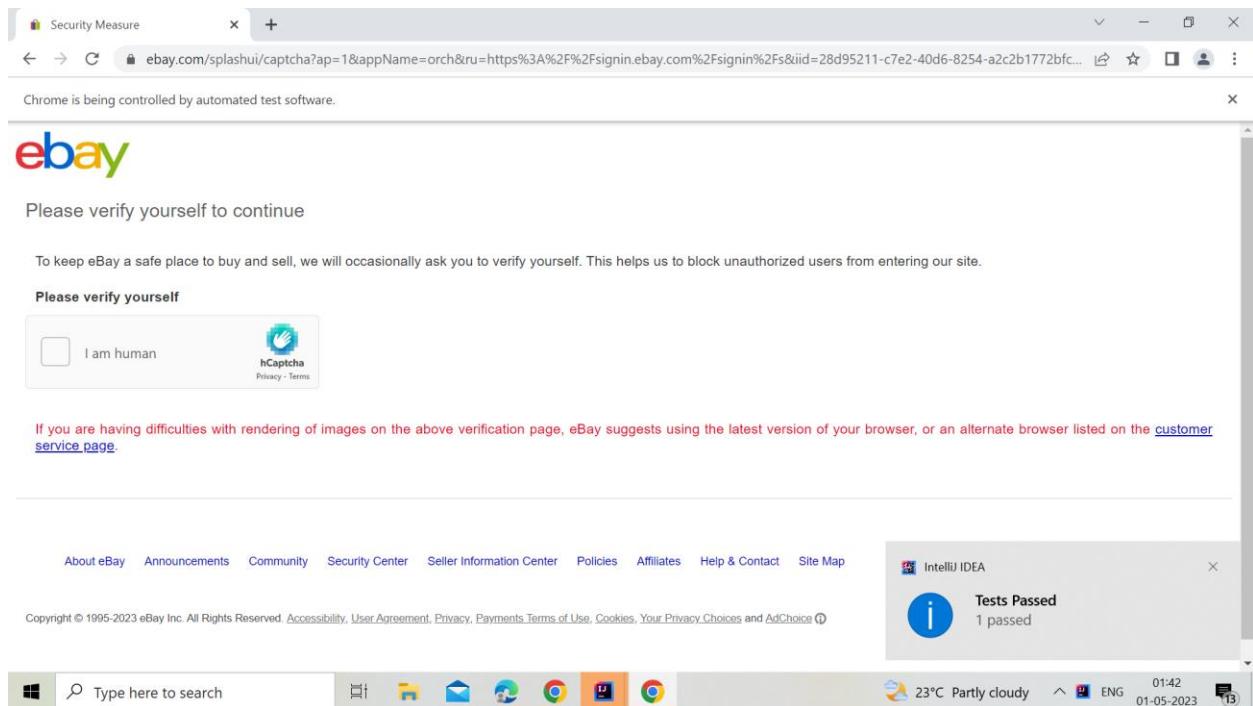
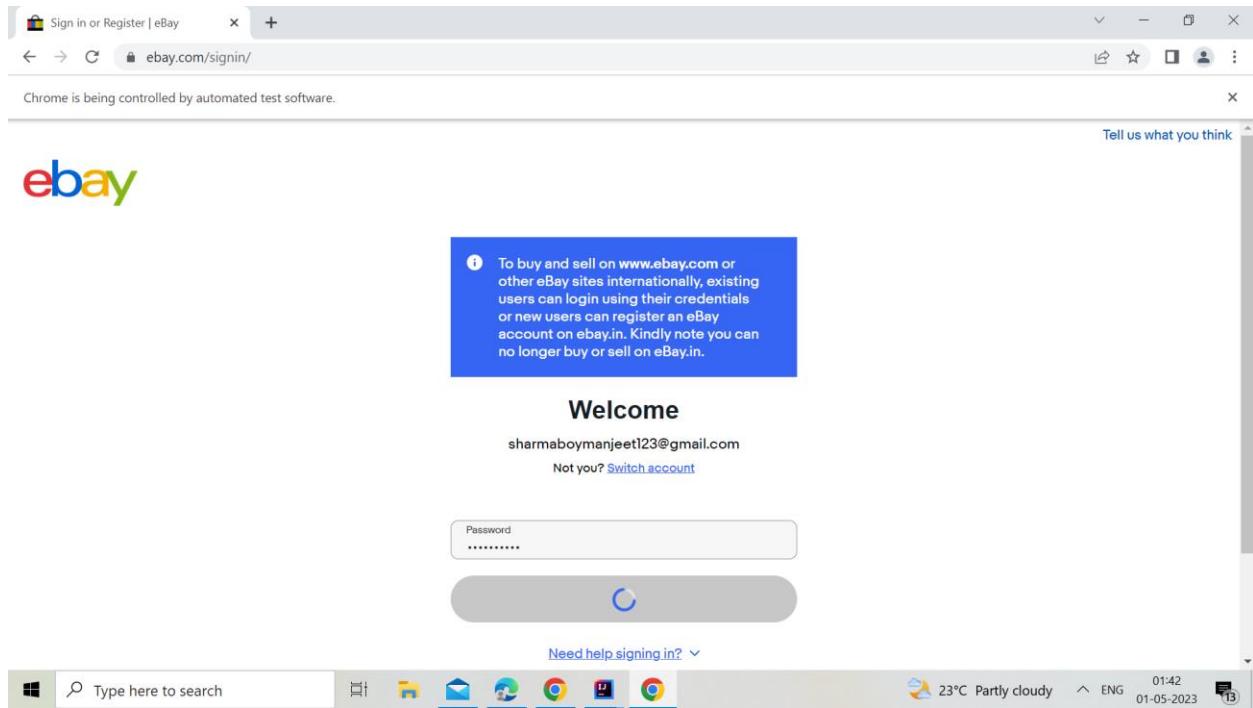
Test login form with incorrect credentials





Test Login form with correct credentials





Screenshot of IntelliJ IDEA showing Java test code for an eBay login test.

```

public class Loginwith_Incorrectcred_Test {
    WebDriver driver;
    Manjeet* obj;
    public void test() throws InterruptedException {
        WebDriverManager.chromedriver().setup();
        driver = new ChromeDriver();
        Loginwith_Incorrectcred obj = new Loginwith_IncorrectCred(driver);
        Thread.sleep( millis: 1000 );
        driver.get("https://www.ebay.com/signin/");
        driver.manage().window().maximize();
        Thread.sleep( millis: 20000 );
        obj.login( username: "wfwfb@gmail.com", password: "wdniwd" );
    }
}

```

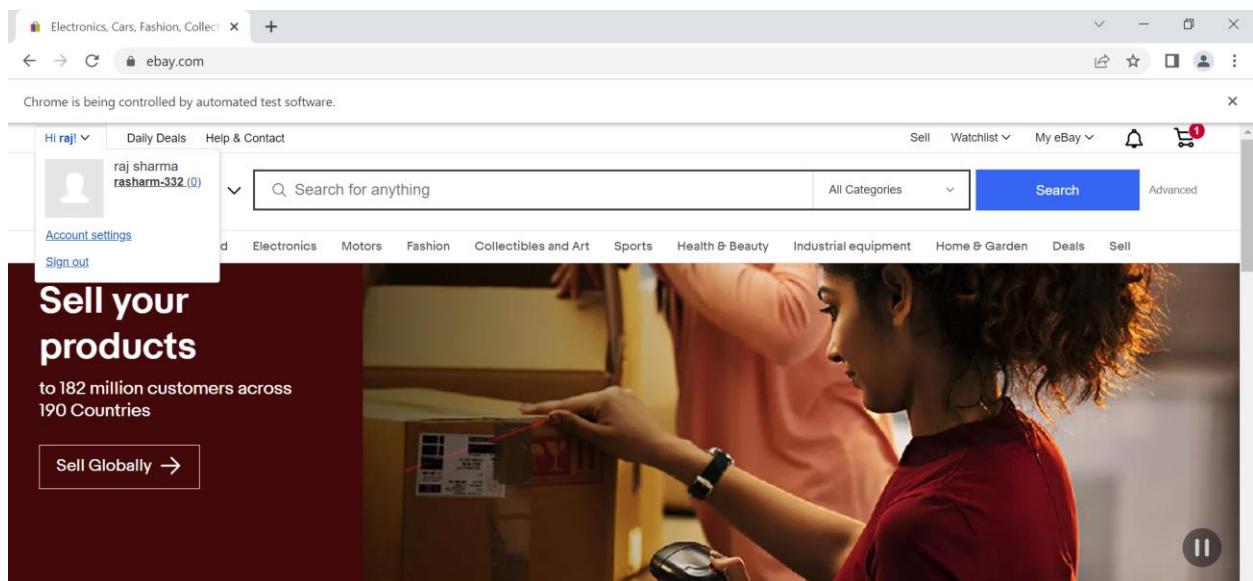
The Run tab shows the test passed: 1 of 1 test - 50 sec 929 ms.

Console output:

```

SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.
Starting ChromeDriver 112.0.5615.49 (bd2a7ccb881c11e8cf3078709382934e3916914@{#936}) on port
Only local connections are allowed.
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping ChromeDriver safe.

```



Change username

The screenshot shows the eBay Account Settings page. The URL is accountsettings.ebay.com/uas. The page header includes the eBay logo, a search bar, and navigation links like 'Sell', 'Watchlist', 'My eBay', and 'Advanced'. The main content area has tabs for 'Personal Info', 'Payment Information', 'Account Preferences', 'Selling', and 'Donation Preferences'. Under 'Personal Info', there are links for 'Personal information', 'Sign in and security', 'Addresses', 'Feedback', and 'Request your eBay data'. The 'Account Preferences' tab is selected, showing links for 'Permissions', 'Advertisement Preferences', 'Communication Preferences', and 'Close account'. At the bottom, there's a Windows taskbar with a search bar, pinned icons for Mail, Photos, and Google Chrome, and system status indicators.

The screenshot shows the eBay Account Settings page, similar to the previous one but with a different user profile. The URL is accountsettings.ebay.com/profile. The main content area has tabs for 'Activity', 'Messages', and 'Account'. The 'Account' tab is selected, showing the 'Personal info' section. Under 'Personal Info', there are links for 'Personal information', 'Sign in and security', 'Addresses', 'Feedback', 'Payment Information', 'Account Preferences', 'Selling', and 'Donation Preferences'. In the 'Personal info' section, it shows the 'Username' as 'rasharm-332', 'Account type' as 'Individual', 'Email address' as 's***3@gmail.com' (with a note 'Not verified'), and 'Phone number' as '+91 xxxxxxxx98'. The 'Edit' link is present next to each of these fields. The 'Account' tab is selected, showing the 'Personal info' section. The Windows taskbar at the bottom is identical to the previous screenshot.

The screenshot shows the 'Personal info' section of the eBay account settings. A modal window is open, prompting the user to change their username. The current username is 'rasharm-204'. The modal includes a 'Cancel' button and a 'Save' button. Below the modal, the account type is listed as 'Individual'. The left sidebar contains links for Personal Info, Sign in and security, Addresses, Feedback, Payment Information, Account Preferences, Selling, and Donation Preferences.

The screenshot shows the 'Personal info' section after the username has been changed. The new username is 'rasharm-204'. The account type remains 'Individual'. The contact information section shows an email address ending in '@gmail.com'. The left sidebar links are identical to the first screenshot. The top navigation bar includes 'Hi raj! ▾', 'Daily Deals', 'Help & Contact', 'Sell', 'Watchlist ▾', 'My eBay ▾', a notification bell with one message, and a shopping cart icon.

Test search and add to cart

Screenshot of the eBay homepage showing a search for "USB-C Cable Male Type-C Cable Cord Fast Charger Charging Data Sync". The search results page displays a large banner for "Golf Clubs & Equipment" featuring Callaway, TaylorMade, and Titleist products. Below the banner, a search result for a "USB-C to USB-C Cable Male Type-C Cable Cord Fast Charger Charging Data Sync" is shown, listing a product from a US seller for \$6.89 to \$7.99.

Search term: USB-C Cable Male Type-C Cable Cord Fast Charger Charging Data Sync

Banner: Golf Clubs & Equipment

Product listing: USB-C to USB-C Cable Male Type-C Cable Cord Fast Charger Charging Data Sync

Price: \$6.89 to \$7.99

Seller: US Seller

Condition: Brand New

Shipping: \$16.89 shipping from United States

Offer: BUY 2 GET 1 FREE!

USB-C to USB-C Cable Male Type... +

ebay.com/sch/i.html?_from=R40&_trksid=p2380057.m570.l1313&_nkw=USB-C+to+USB-C+Cable+Male+Type-C+Cable+Cord+Fast+Charger+Charging+...

Chrome is being controlled by automated test software.

2 m (4)
 4 ft (2)
 5 ft (3)
 3.3 ft (1)

[See all](#)

Brand
 Unbranded (35)
 Yellow-Price (2)
 AICase (1)
 idealforce (1)
 Not Specified (70)

Type
 USB Cable (60)
 USB-C Cable (13)
 Type-C Cable (17)
 Charging & Data Sync Cable (13)
 Cable & Cord (16)

Items Included


GET 1 FREE!
Data Sync
 - Buy 2 Get 1 Free - - Fast Shipping -
 Brand New
\$6.24 to \$8.27
 Buy It Now
 +\$17.01 shipping
 from United States
 977+ sold
 Sponsored

-66%
 Lowest Price, Best Value
 Decathlon India


Buy 2 Get 1 Free
USB-C to USB-C Cable Male Type-C Cable Cord Fast Charger Charging Data Sync 1m
 Brand New
\$5.42
 Buy It Now
 Free International Shipping
 from China
 Sponsored


2-PACK
TYPE C To Type C 3/6 Feet
2x Type-C USB-C to USB-C Cable Male Cable Cord Fast Charger Charging Data Sync
 Brand New
\$2.00
 Save up to 10% when you buy more

23°C Mostly cloudy ENG 01:52 01-05-2023

USB-C to USB-C Cable Male Type... +

ebay.com/item/123909050971?hash=item1cd98e125bg:0IAAOSwATNeabZk&amdata=enc%3AAQAIABIO%2BSsu0%2FYGgqK1Eq%2B13w%2FgoyUKaSf...

Chrome is being controlled by automated test software.

Hi rajit ▾ Daily Deals Help & Contact

ebay Shop by category ▾ Search for anything All Categories ▾ [Search](#) Advanced

[Back to search results](#) | Listed in category: Electronics > Cell Phones & Accessories > Cell Phone Accessories > Cables & Adapters [Share](#) | [Add to Watchlist](#)

\$ BUY 2, GET 1 FREE (add 3 to cart) [See all eligible items and terms ▾](#)


BUY 2 GET 1 FREE!
USB-C to USB-C Cable Male Type-C Cable Cord Fast Charger Charging Data Sync
 - Buy 2 Get 1 Free - - Fast Shipping -
 Condition: New
 Color: - Select -
 Length: - Select -
 Quantity: 1 More than 10 available / 14,554 sold
 Price: US \$6.24 [Buy It Now](#)

Shop with confidence
Top Rated Plus
 Trusted seller, fast shipping, and easy returns.
[Learn more](#)

eBay Money Back Guarantee
 Get the item you ordered or get your money back.
[Learn more](#)

Seller information
electronics_florida (168999) 
 98.9% positive feedback

[Save seller](#) [Contact seller](#)

23°C Mostly cloudy ENG 01:52 01-05-2023

USB-C to USB-C Cable Male Type... USB-C to USB-C Cable Male Type...

ebay.com/itm/123909050971?hash=item1cd98e125b:g:I0IAAOswATNeabZk&amdata=enc%3AAQAIABIO%2BSSu0%2FYGgqK1Eq%2B13w%2FgoyUKaSf...

Chrome is being controlled by automated test software.

BUY 2 GET 1 FREE!

USB-C to USB-C Cable Male Type-C
Cable Cord Fast Charger Charging Data Sync
Buy 2 Get 1 Free - ✓ - Fast Shipping - ✓
11 sold in last 24 hours

Condition: New
Color: - Select -
Length: - Select -
Quantity: 1 More than 10 available / 14,554 sold

Price: US \$6.24

Buy It Now **Add to cart** **Add to Watchlist**

Shop with confidence
Top Rated Plus
Trusted seller, fast shipping, and easy returns.
[Learn more](#)

eBay Money Back Guarantee
Get the item you ordered or get your money back.
[Learn more](#)

Seller information
electronics_florida (168999)
98.9% positive feedback

[Save seller](#) [Contact seller](#) [Visit store](#) [See other items](#)

PayPal IS THE RECOMMENDED

47 This one's trending. 14,554 have already sold.

Type here to search 23°C Mostly cloudy ENG 01:53 01-05-2023

USB-C to USB-C Cable Male Type... USB-C to USB-C Cable Male Type...

ebay.com/itm/123909050971?hash=item1cd98e125b:g:I0IAAOswATNeabZk&amdata=enc%3AAQAIABIO%2BSSu0%2FYGgqK1Eq%2B13w%2FgoyUKaSf...

Chrome is being controlled by automated test software.

Hi raj! Daily Deals Help & Contact

Shop by category All Categories Advanced

Back to search results | Listed in category: Electronics > Cell Phones & Accessories > Cell Phone Accessories > Cables & Adapters Share | Add to Watchlist

BUY 2, GET 1 FREE (add 3 to cart) [See all eligible items and terms](#)

BUY 2 GET 1 FREE!

USB-C to USB-C Cable Male Type-C
Cable Cord Fast Charger Charging Data Sync
Buy 2 Get 1 Free - ✓ - Fast Shipping - ✓

Condition: New
Color: - Select -
Length: - Select -
Quantity: 1 More than 10 available / 14,554 sold

Price: US \$6.24

Buy It Now

Shop with confidence
Top Rated Plus
Trusted seller, fast shipping, and easy returns.
[Learn more](#)

eBay Money Back Guarantee
Get the item you ordered or get your money back.
[Learn more](#)

Seller information
electronics_florida (168999)
98.9% positive feedback

[Save seller](#) [Contact seller](#)

Type here to search 23°C Mostly cloudy ENG 01:54 01-05-2023

The screenshot shows an eBay shopping cart page with the following details:

- Seller electronics_florida**:
 - USB-C to USB-C Cable Male Type-C Cable Cord Fast Charger Charging Data 3Ft, Green New
 - Qty: 1
 - US \$6.99 + US \$16.99
 - eBay International Shipping
 - Pay only this seller Request total ⓘ
 - Save for later Remove
- Seller tigerphones**:
 - Apple iPhone 12 Unlocked 64GB 128GB
 - Type here to search
 - 23°C Mostly cloudy ENG 01-05-2023

Go to checkout

Items (2)	US \$426.97
Shipping to 121003 ⓘ	US \$40.17
Subtotal	US \$467.14

Removing added cart

The screenshot shows the eBay homepage with the following features:

- May the force be with you, always**
- The best toys in the galaxy and more**
- Buy it now →**
- Daily Deals**
- See all**
- 23°C Mostly cloudy ENG 01-05-2023**

Screenshot of an eBay shopping cart page showing two items:

Seller: electronics_florida

- USB-C to USB-C Cable Male Type-C Cable Cord Fast Charger Charging Data Sync** (3Ft, Green, New) - Price: US \$6.99 + US \$16.99 (eBay International Shipping) - Qty: 1
- Buy 2, get 1 free** - Add 2 more to qualify.

Seller: tigerphones

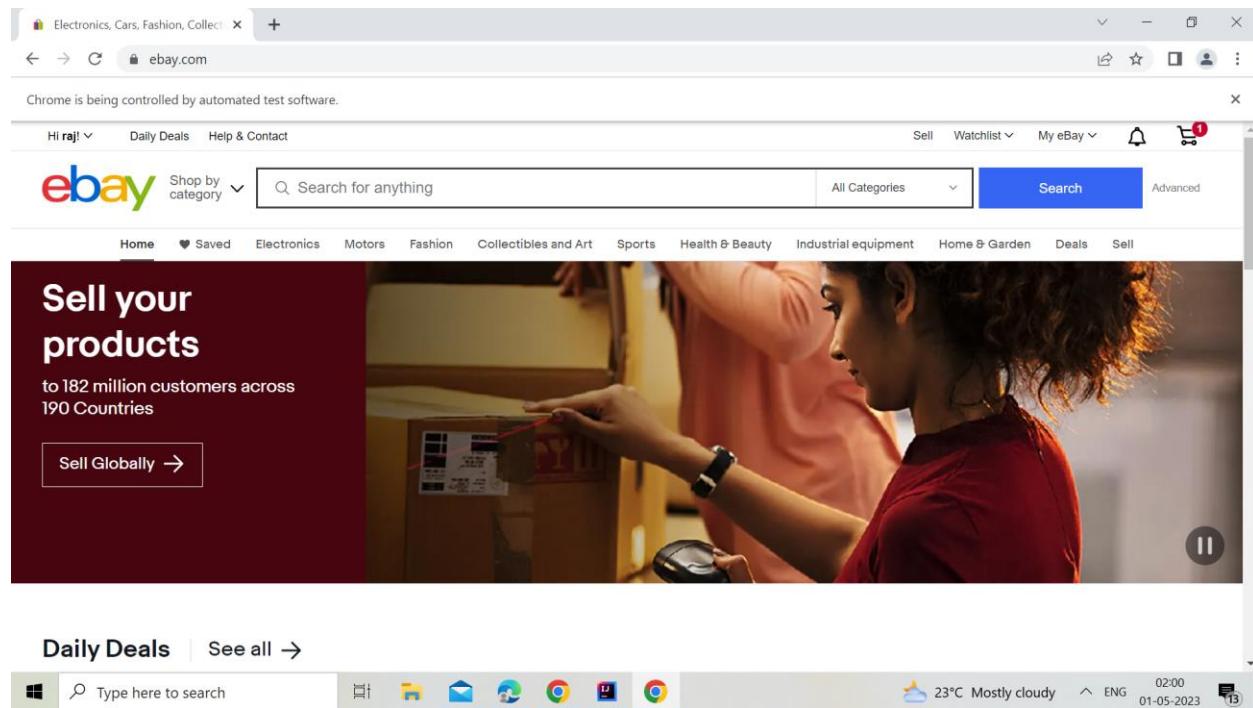
- Apple iPhone 12 Unlocked 64GB 128GB** (White, 64 GB, Very Good - Refurbished) - Price: US \$419.98 + US \$23.18 (eBay International Shipping) - Qty: 1

Go to checkout

Items (2) - US \$426.97
 Shipping to 121003 - US \$40.17
Subtotal - US \$467.14
 eBay Money Back Guarantee

Message: ✓ **USB-C to USB-C Cable Male Type-C Cable Cord Fast Charger Charging Data Sync** was removed from your cart.

Change address



Account Settings

Hi raj! Daily Deals Help & Contact

ebay Shop by category

Search for anything All Categories Search Advanced

My eBay

Activity Messages Account

Personal Info

- Personal information
- Sign in and security
- Addresses
- Feedback
- Request your eBay data

Selling

- Seller Dashboard

Payment Information

- Payments
- PayPal Account

Account Preferences

- Permissions
- Advertisement Preferences
- Communication Preferences
- Close account

Donation Preferences

- Pending Donations

Waiting for monitor.ebay.com... 23°C Mostly cloudy 02:01 ENG 01-05-2023

accountsettings.ebay.com/uas/addresses

Chrome is being controlled by automated test software.

Hi raj! Daily Deals Help & Contact

ebay Shop by category

Search for anything All Categories Search Advanced

My eBay

Activity Messages Account

Addresses

Registration address, email and phone number
Your main contact address. It's important to keep it up to date and accurate. Edit

Shipping address
Your main shipping address for purchases. This is where you'd like to receive items you purchase. Edit

Ship from address
Your main address where you ship packages from. Edit

Type here to search

Waiting for monitor.ebay.com... 23°C Mostly cloudy 02:01 ENG 01-05-2023

The screenshot shows the eBay 'Shipping address' page. At the top, there's a header bar with the eBay logo, search bar, and navigation links. Below it, the main title 'Shipping address' is centered. A card displays a saved shipping address for 'raj sharma' with the details: 'banke bihari colony near g.b public school. Tilpat f. b.d faridabad, HR 121003 India +91 7011131498'. An 'Edit' button is next to the card. At the bottom right of the card area, there's a link 'Add another address'.

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The screenshot shows the eBay 'Edit Address' page. The interface is similar to the shipping address page, with a header bar, main title 'Edit Address', and a form for updating an address. The form fields include: 'Country' (set to 'India'), 'Name' ('raj sharma'), 'Street address' ('banke bihari colony near g.b public school. Tilpat'), 'Street address 2' (empty), 'City' ('faridabad'), 'State' ('Haryana'), and 'Zip code' ('121003'). The bottom of the screen shows a taskbar with various pinned icons and system status information.

The screenshot shows the eBay address settings page. The user has entered the following information:

- Name: raj sharma
- Street address: banke bihari colony near g.b public school. Tilpat f., Lpu
- City: faridabad
- State: Haryana
- Zip code: 121003
- Phone number: +91 70111 31498

A green success message at the bottom of the form area says "Address changed successfully." Below the message, the updated address information is displayed.

Importance and Applicability

Ensures website functionality: Testing the website with Selenium and Java helps to ensure that the website functions as intended. This ensures that users can navigate the website, search for products, and make purchases without any issues.

Identifies and resolves issues: Testing the website with Selenium and Java helps to identify any issues that may be present on the website. These issues can then be resolved, which helps to improve the website's quality and user experience.

Improves website performance: Testing the website with Selenium and Java helps to identify any performance bottlenecks that may be present on the website. These bottlenecks can then be addressed, which helps to improve the website's performance and speed.

Cost-effective: Testing the website with Selenium and Java is a cost-effective way to ensure that the website is functioning as intended. This is because it helps to identify and resolve issues before they become major problems, which can be more expensive to fix.

Applicability: The testing methodology used for eBay website testing with Selenium and Java can be applied to other websites and web applications. This makes it a valuable skillset for developers and testers working in the web development industry.

INDIVIDUAL PROJECT

Objectives of the work undertaken:

- To automate the script for calculating the pricing of a Google Cloud Platform instance using Selenium WebDriver, framework unit test, and Page Object concepts.
- To ensure that the monthly rent matches the amount received when the test is done manually.
- To use the Page Object concept to abstract the pages of the application and to interact with the web elements.
- To use the framework unit test to create test scripts for the given steps.
- To use Property files to store test data for at least two different environments.
- To use XML suites for smoke tests and other tests.
- To include an option for running the test with Jenkins and browser parameterization, test suite, and environment.
- To display the test results on the job chart and archive the screenshots as artifacts in case of test failure.

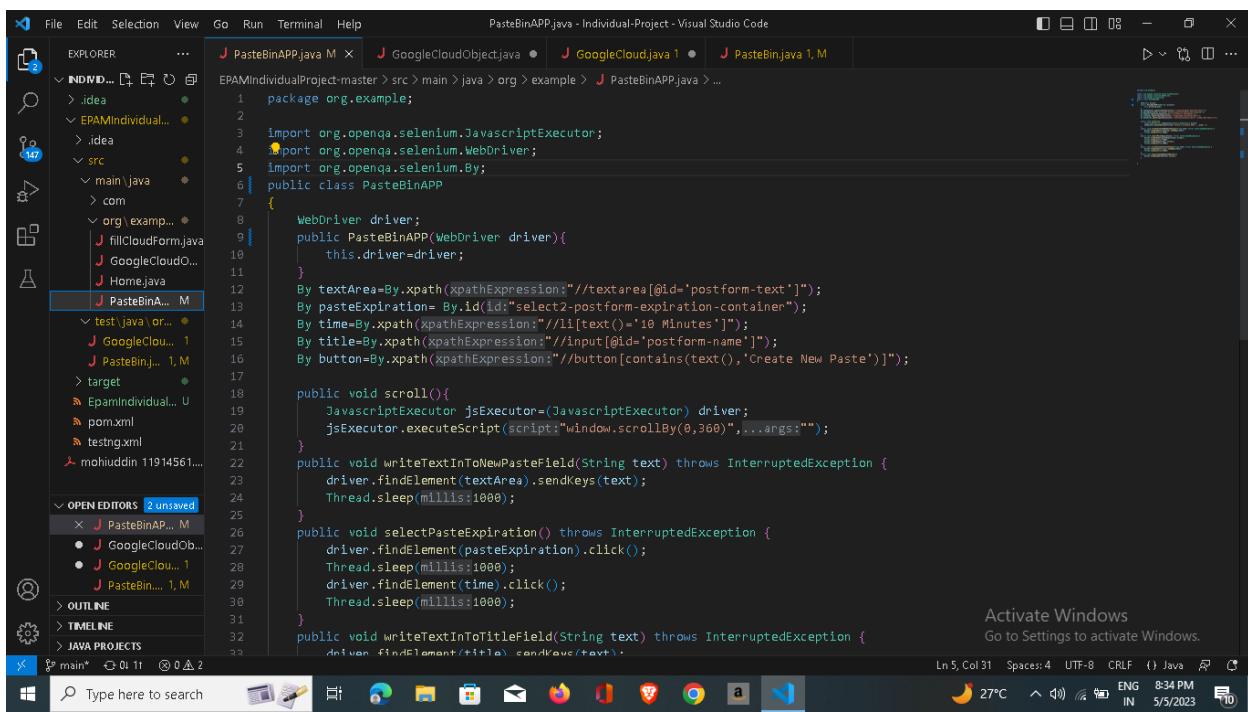
Scope of the Work:

- The scope includes automating the given script for calculating the pricing of a Google Cloud Platform instance using Selenium WebDriver, framework unit test, and Page Object concepts.
- The scope also includes using Property files to store test data for at least two different environments.
- The scope includes using XML suites for smoke tests and other tests.
- The scope includes incorporating an option for running the test with Jenkins and browser parameterization, test suite, and environment.
- The scope includes displaying the test results on the job chart and archiving the screenshots as artifacts in case of test failure.
- The scope does not include testing the functionality of the Google Cloud Platform Pricing Calculator or any other component of the Google Cloud Platform.
- The scope does not include testing the performance or security of the Google Cloud Platform Pricing Calculator or any other component of the Google Cloud Platform.

- The scope does not include testing the compatibility of the Google Cloud Platform Pricing Calculator or any other component of the Google Cloud Platform with different browsers, operating systems, or devices.

Module 2nd

Pastebin



```

File Edit Selection View Go Run Terminal Help
EPAMIndividualProject-master > src > main > java > org > example > PasteBinAPP.java > ...
EXPLORER
> idea
> EPAMIndividual...
> .idea
> src
> main.java
> com
> org.example
J fillCloudForm.java
J GoogleCloudO...
J Home.java
J PasteBinA... M
J test.java or...
J GoogleCloud...
J PasteBin... 1, M
> target
EpaMIndividual... U
pom.xml
testing.xml
mohiuddin 11914561...
OPEN EDITORS 3 unsaved
X J PasteBinAP... M
● J GoogleCloudOb...
● J GoogleCloud... 1
J PasteBin... 1, M
> OUTLINE
> TIMELINE
> JAVA PROJECTS
Ln 5, Col 31 Spaces: 4 UTF-8 CRLF ⚡ Java ⚡
Windows Type here to search 27°C 8:34 PM ENG IN 5/5/2023
Activate Windows
Go to Settings to activate Windows.

```

```

1 package org.example;
2
3 import org.openqa.selenium.JavascriptExecutor;
4 import org.openqa.selenium.WebDriver;
5 import org.openqa.selenium.By;
6 public class PasteBinAPP
7 {
8     WebDriver driver;
9     public PasteBinAPP(WebDriver driver){
10         this.driver=driver;
11     }
12     By textArea=By.xpath("//textarea[@id='postform-text']");
13     By pasteExpiration=By.id("select2-postform-expiration-container");
14     By time=By.xpath("//li[text()='10 Minutes']");
15     By title=By.xpath("//input[@id='postform-name']");
16     By button=By.xpath("//button[contains(text(),'Create New Paste')]");
17
18     public void scroll(){
19         JavascriptExecutor jsExecutor=(JavascriptExecutor) driver;
20         jsExecutor.executeScript("window.scrollBy(0,360)", "");
21     }
22     public void writeTextInToNewPasswordField(String text) throws InterruptedException {
23         driver.findElement(textArea).sendKeys(text);
24         Thread.sleep(1000);
25     }
26     public void selectPasteExpiration() throws InterruptedException {
27         driver.findElement(pasteExpiration).click();
28         Thread.sleep(1000);
29         driver.findElement(time).click();
30         Thread.sleep(1000);
31     }
32     public void writeTextInToTitleField(String text) throws InterruptedException {
33         driver.findElement(title).sendKeys(text);
34     }

```

PasteBinAPP.java - Individual-Project - Visual Studio Code

```

File Edit Selection View Go Run Terminal Help
J PasteBinAPP.java M J GoogleCloudObject.java ● J GoogleCloud.java 1 ● J PasteBin.java 1, M

EPAMIndividualProject-master > src > main > java > org > example > J PasteBinAPP.java > ...
15
16 By title=By.xpath(xpathExpression:"/input[@id='postform-name']");
17 By button=By.xpath(xpathExpression:"//button[contains(text(),'Create New Paste')]");
18
19 public void scroll(){
20     JavascriptExecutor jsExecutor=(JavascriptExecutor) driver;
21     jsExecutor.executeScript(script:"window.scrollBy(0,360)",...args:"");
22 }
23
24 public void writeTextInToNewPasswordField(String text) throws InterruptedException {
25     driver.findElement(textArea).sendKeys(text);
26     Thread.sleep(millis:1000);
27 }
28
29 public void selectPasteExpiration() throws InterruptedException {
30     driver.findElement(pasteExpiration).click();
31     Thread.sleep(millis:1000);
32     driver.findElement(time).click();
33     Thread.sleep(millis:1000);
34 }
35
36 public void writeTextInToTitleField(String text) throws InterruptedException {
37     driver.findElement(title).sendKeys(text);
38     Thread.sleep(millis:1000);
39 }
40
41 public void pressCreateNewPasteButton(){
42     driver.findElement(button).click();
}

```

Activate Windows
Go to Settings to activate Windows.

Ln 5, Col 31 Spaces:4 UTF-8 CRLF () Java ⚡ 27°C ⌂ ENG 8:34 PM IN 5/5/2023

PasteBin.java - Individual-Project - Visual Studio Code

```

File Edit Selection View Go Run Terminal Help
J PasteBinAPP.java M J GoogleCloudObject.java ● J GoogleCloud.java 1 ● J PasteBin.java 1, M X

EPAMIndividualProject-master > src > test > java > org > example > J PasteBin.java > PasteBin > PasteBin()
1 package org.example;
2
3 import com.Browser.BrowserParameter;
4 import org.openqa.selenium.WebDriver;
5 import org.testng.annotations.Test;
6
7 public class PasteBin {
8     @Test
9     public void PasteBin() throws InterruptedException {
10         WebDriver driver= BrowserParameter.setupBrowser(browser:"chrome",url:"https://pastebin.com/");
11
12         PasteBinAPP pasteBin=new PasteBinAPP(driver);
13
14         pasteBin.writeTextInToPasswordField(text:"Hello from WebDriver");
15         pasteBin.scroll(); Loading...
16         pasteBin.selectPasteExpiration();
17         pasteBin.writeTextInToTitleField(text:"helloWeb");
18         pasteBin.pressCreateNewPasteButton();
19     }
20 }

```

Activate Windows
Go to Settings to activate Windows.

Ln 9, Col 55 (27 selected) Spaces:4 UTF-8 CRLF () Java ⚡ 27°C ⌂ ENG 8:34 PM IN 5/5/2023

Google Cloud (2b & 3rd module)

FactoryBrowser.java - IndividualEpamProject - Visual Studio Code

```

src > main > java > com > Browser > J FactoryBrowser.java < com.Browser
1 package com.Browser;
2 import io.github.bonigarcia.wdm.WebDriverManager;
3 import org.openqa.selenium.WebDriver;
4 import org.openqa.selenium.chrome.ChromeDriver;
5 import org.openqa.selenium.edge.EdgeDriver;
6
7 public class FactoryBrowser{
8     static WebDriver driver;
9     public static WebDriver setupBrowser(String browser, String url){
10         if(browser.equalsIgnoreCase("chrome")){
11             WebDriverManager.chromedriver().setup();
12             driver=new ChromeDriver();
13         }
14         else if (browser.equalsIgnoreCase("edge")){
15             WebDriverManager.edgedriver().setup();
16             driver=new EdgeDriver();
17         }
18         driver.get(url);
19         driver.manage().window().maximize();
20         return driver;
21     }

```

Activate Windows
Go to Settings to activate Windows.

Ln 1, Col 1 | Spaces: 4 | UTF-8 | CRLF | () Java | ⚙️ | 8:30 PM | ENG | IN | 5/5/2023

fillCloudForm.java - Individual-Project - Visual Studio Code

```

EPAMIndividualProject-master > src > main > java > org > example > J fillCloudForm.java
1 package org.example;
2
3 import org.openqa.selenium.By;
4 import org.openqa.selenium.WebDriver;
5 import org.openqa.selenium.WebElement;
6
7 public class fillCloudForm {
8     WebDriver driver;
9     public fillCloudForm(WebDriver driver){
10         this.driver=driver;
11     }
12     private By newFirstFrame = By.xpath("//iframe[contains(@name,'goog_')]");
13     private By instancesField = By.xpath("//md-input-container/child::input[@ng-model='listingCtrl.computeServer.quant'];
14     private By seriesOfMachine = By.xpath("//md-select[@name='series']/parent::md-input-container");
15     private By seriesOfMachineModel = By.xpath("//md-option[@value='n1']");
16     private By machineType = By.xpath("//label[text()='Machine type']/parent::md-input-container");
17     private By computeEngine = By.xpath("//md-option[@value='CP-COMPUTEENGINE-VMIMAGE-N1-STANDARD-8']");
18     private By gpusCheckBox = By.xpath("//md-checkbox[@aria-label='Add GPUs']");
19     private By gpuType = By.xpath("//md-select[@placeholder='GPU type']");
20     private By gpuTypeModel = By.xpath("//md-option[@value='NVIDIA_TESLA_V100']");
21     private By numberGpus = By.xpath("//md-select[@placeholder='Number of GPUs']");
22     private By numberGpusModel = By.cssSelector("md-option[value='1'][class='ng-scope md-ink-ripple'][ng-disabled]");
23     private By localLsd = By.xpath("//md-select[@placeholder='Local SSD']");
24     private By localLsdModel = By.xpath("//md-option[@ng-repeat='item in listingCtrl.dynamicSsd.computeServer'][@value='
25     private By dataCenterLocation = By.xpath("//md-select[@placeholder='Datacenter location']");
26     private By dataCenterLocationInFrankfurt = By.xpath("//md-option[@value='europe-west3' and contains(@ng-repeat,'co
27     private By committedUsage = By.xpath("//md-select[@placeholder='Committed usage']");
28     private By oneYearUsage = By.cssSelector("div[class='md-select-menu-container md-active md-clickable']" + " md-opt

```

Activate Windows
Go to Settings to activate Windows.

Ln 1, Col 1 | Spaces: 4 | UTF-8 | CRLF | () Java | ⚙️ | 8:31 PM | ENG | IN | 5/5/2023

Screenshot 1 (Top): Visual Studio Code interface showing the code editor with three tabs open: `PasteBinAPP.java`, `fillCloudForm.java`, and `PasteBin.java`. The `fillCloudForm.java` tab is active, displaying Java code for interacting with a web application. The code includes methods for selecting machine type, GPU type, and local SSD, as well as clicking checkboxes. The status bar at the bottom shows "Ln 1, Col 1" and "Activate Windows".

```

    public void selectSeriesOfMachine() throws InterruptedException {
        driver.findElement(seriesOfMachine).click();
        Thread.sleep(3000);
        driver.findElement(seriesOfMachineModel).click();
        Thread.sleep(3000);
    }

    public void selectMachineType() throws InterruptedException {
        driver.findElement(machineType).click();
        Thread.sleep(3000);
        driver.findElement(computeEngine).click();
        Thread.sleep(3000);
    }

    public void clickAddGpusCheckBox() throws InterruptedException {
        driver.findElement(gpusCheckBox).click();
        Thread.sleep(3000);
    }

    public void selectGpuType() throws InterruptedException {
        driver.findElement(gpuType).click();
        Thread.sleep(3000);
        driver.findElement(gpuTypeModel).click();
        Thread.sleep(2000);
    }

    public void selectNumberOfGpus() throws InterruptedException {
        driver.findElement(numberOfGpus).click();
        Thread.sleep(3000);
        driver.findElement(numberOfGpusModel).click();
        Thread.sleep(3000);
    }

    public void selectLocalSsd() throws InterruptedException {
        driver.findElement(localSsd).click();
        Thread.sleep(3000);
        driver.findElement(localSsdModel).click();
    }
}

```

Screenshot 2 (Bottom): Visual Studio Code interface showing the code editor with three tabs open: `PasteBinAPP.java M`, `GoogleCloudObject.java`, and `PasteBin.java M`. The `GoogleCloudObject.java` tab is active, displaying Java code for a Selenium test. The code includes imports for `org.openqa.selenium.*` and `org.example`, and defines a class `GoogleCloudObject` with methods for pushing an estimate, checking information, and checking region. The status bar at the bottom shows "Ln 18, Col 4" and "Activate Windows".

```

    package org.example;

import org.openqa.selenium.*;

public class GoogleCloudObject {
    WebDriver driver;
    public GoogleCloudObject(WebDriver driver){
        this.driver=driver;
    }

    private By addToEstimateButton = By.xpath("//form[@name='computeEngineForm']/button[contains(text(),'Add to Estimate')]");
    private By informationInVmClassIsRegular = By.xpath("//md-select[@aria-label='VM Class: Regular']");
    private By InformationInInstanceTypeIncludeN1Standard8 = By.xpath("//div[contains (text()),'Instance type: n1-standard']");
    private By localSsdSpace2x375Gb1 = By.xpath("//div[@class='md-text'][text()='24x375 GB']");
    private By commitmentTermOneYear = By.xpath("//div[contains (text()),'Commitment term: 1 Year']");
}

public void pushAddToEstimate() throws InterruptedException {
    driver.findElement(addToEstimateButton).click();
    Thread.sleep(3000);
}

public void checkInformationInVmClassIsRegular() {
    driver.findElement(informationInVmClassIsRegular);
}

public void checkInformationInInstanceTypeIncludeN1Standard8() {
    driver.findElement(InformationInInstanceTypeIncludeN1Standard8);
}

public void checkRegionIsFrankfurt() {
    driver.findElement(regionIsFrankfurt);
}

public void checkLocalSsdSpace2x375Gb1() {
    driver.findElement(localSsdSpace2x375Gb1);
}

```

File Edit Selection View Go Run Terminal Help

Home.java - Individual-Project - Visual Studio Code

EXPLORER

EPAMIndividualProject-master > src > main > java > org > example > Home.java

```
1 package org.example;
2
3 import org.openqa.selenium.By;
4 import org.openqa.selenium.Keys;
5 import org.openqa.selenium.WebDriver;
6 import org.openqa.selenium.WebElement;
7
8 public class Home {
9
10     WebDriver driver;
11     public Home(WebDriver driver){
12         this.driver=driver;
13     }
14
15     private By search=By.xpath("//input[@placeholder='Search']");
16     private By searchResult=By.xpath("//div[@class='gs-title']/b[contains(text(),'Google Cloud Pricing Calculator')]");
17
18     public void homePage() throws InterruptedException {
19         WebElement r = driver.findElement(search);
20         r.sendKeys("Google Cloud Platform Pricing Calculator");
21         // press ENTER
22         r.sendKeys(Keys.RETURN);
23         Thread.sleep(5000);
24         driver.findElement(searchResult).click();
25         Thread.sleep(10000);
26     }
27
28 }
```

OPEN EDITORS 1 unsaved

J PasteBinAP... M

● J GoogleCloudOb... M

● J Home.java EPAM... M

J PasteBinJa... M

OUTLINE

TIMELINE

JAVA PROJECTS

Type here to search

Ln 1, Col 1 Spaces: 4 UTF-8 CRLF ⚡ Java ENG 8:32 PM IN 5/5/2023

Activate Windows
Go to Settings to activate Windows.

File Edit Selection View Go Run Terminal Help

GoogleCloud.java - Individual-Project - Visual Studio Code

EXPLORER

EPAMIndividualProject-master > src > test > java > org > example > GoogleCloud.java > ...

```
1 package org.example;
2
3 import com.Browser.BrowserParameter;
4 import org.openqa.selenium.*;
5 import org.testng.annotations.Test;
6 public class GoogleCloud {
7
8     @Test
9     public void GoogleCloud() throws InterruptedException {
10        WebDriver driver=BrowserParameter.setupBrowser(browser:"chrome",url:"https://cloud.google.com/");
11
12        GoogleCloudObject calculatorPage=new GoogleCloudObject(driver);
13        Home home = new Home(driver);
14        fillCloudForm Form = new fillCloudForm(driver);
15        home.homePage();
16        Form.sendKeysToNumberOfInstancesField(keyForNumberOfInstances:"4");
17        Form.selectSeriesOfMachine();
18        Form.selectMachineType();
19        Form.clickAddGpusCheckBox();
20        Form.selectGpuType();
21        Form.selectNumberOfGpus();
22        Form.selectLocalSsd();
23        Form.selectDataCenterLocation();
24        Form.selectCommittedUsage();
25        calculatorPage.pushAddToEstimate();
26    }
27 }
```

OPEN EDITORS 2 unsaved

J PasteBinAP... M

● J GoogleCloudOb... M

● J GoogleCloud... 1 M

J PasteBinJa... 1 M

OUTLINE

TIMELINE

JAVA PROJECTS

Type here to search

Ln 4, Col 30 Spaces: 4 UTF-8 CRLF ⚡ Java ENG 8:33 PM IN 5/5/2023

Activate Windows
Go to Settings to activate Windows.

```

<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE suite SYSTEM "http://testng.org/testng-1.0.dtd">
<suite name="All Test Suite">
    <test verbose="2" preserve-order="true">
        <name="C:/Users/ASUS/EpmIndividualProject/src/test/java/org/example/PasteBin">
            <classes>
                <class name="org.example.PasteBin">
                    <methods>
                        <method name="main">
                            <include name="PasteBin"/>
                        </method>
                    </methods>
                </class>
            </classes>
        </test>
        <test verbose="2" preserve-order="true">
            <name="C:/Users/ASUS/EpmIndividualProject/src/test/java/org/example/GoogleCloud">
                <classes>
                    <class name="org.example.GoogleCloud">
                        <methods>
                            <method name="main">
                                <include name="GoogleCloud"/>
                            </method>
                        </methods>
                    </class>
                </classes>
            </test>
        </test>
    </suite>

```

Jenkins Report (module 4th)

Started by user admin
Running as SYSTEM
Building in workspace C:\Users\hp.jenkins\workspace\MohiuddinJenkins
The recommended git tool is: NONE
No credentials specified
> git.exe rev-parse --resolve-git-dir C:\Users\hp.jenkins\workspace\MohiuddinJenkins\.git # timeout=10
Fetching changes from the remote Git repository
> git.exe config remote.origin.url https://github.com/mohiuddin000/Jenkins_Report.git # timeout=10
Fetching upstream changes from https://github.com/mohiuddin000/Jenkins_Report.git
> git.exe -version # timeout=10
> git --version # git version 2.39.0.windows.2'
> git.exe fetch --tags --progress -- https://github.com/mohiuddin000/Jenkins_Report.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git.exe rev-parse "refs/remotes/origin/main^{commit}" # timeout=10
Checking out Revision 5dceb4e63ab95bda3ff82b38408c7e927d009805 (refs/remotes/origin/main)
> git.exe config core.sparsecheckout # timeout=10
> git.exe checkout -f 5dceb4e63ab95bda3ff82b38408c7e927d009805 # timeout=10
Commit message: "Update pom.xml"
First time build. Skipping changelog.
[MohiuddinJenkins] \$ cmd.exe /C "C:/Users/hp/Desktop/apache-maven-3.9.1\bin\mvn.cmd clean test && exit %ERRORLEVEL%"
[INFO] Scanning for projects...
[INFO] [INFO] -----< com.github.vitallius.helloci:hello-ci >-----
[INFO] Building hello-ci 1.0-SNAPSHOT

```

[INFO] -----< com.github.vitaliuss.helloci:helloci-ci >-----
[INFO] Building helloci-ci 1.0-SNAPSHOT
[INFO]   from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- clean:3.2.0:clean (default-clean) @ helloci-ci ---
[INFO]
[INFO] --- resources:3.3.0:resources (default-resources) @ helloci-ci ---
[INFO] skip non existing resourceDirectory C:\Users\hp\.jenkins\workspace\MohiuddinJenkins\src\main\resources
[INFO]
[INFO] --- compiler:3.10.1:compile (default-compile) @ helloci-ci ---
[INFO] No sources to compile
[INFO]
[INFO] --- resources:3.3.0:testResources (default-testResources) @ helloci-ci ---
[INFO] skip non existing resourceDirectory C:\Users\hp\.jenkins\workspace\MohiuddinJenkins\src\test\resources
[INFO]
[INFO] --- compiler:3.10.1:testCompile (default-testCompile) @ helloci-ci ---
[INFO] No sources to compile
[INFO]
[INFO] --- surefire:3.0.0-M1:test (default-test) @ helloci-ci ---
[WARNING] Parameter 'localRepository' is deprecated core expression; Avoid use of ArtifactRepository type. If you need access to local repository, switch to '${repositorySystemSession}' expression and get LRM from it instead.
[INFO] No tests to run.
[INFO]
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 1.645 s
[INFO] Finished at: 2023-05-02T17:56:34+05:30
[INFO] -----
Finished: SUCCESS

```

REST API Jenkins 2.387.2

CHAPTER3

TECHNOLOGIES LEARNT

Software Development Methodologies:

- **High Level Overview:** An overview of software development methodologies, their benefits, and their various types.
- **Waterfall:** An introduction to the traditional Waterfall methodology, which is a linear and sequential approach to software development.
- **Agile:** An overview of the Agile methodology, which emphasizes flexibility, customer collaboration, and incremental and iterative development.
- **Scrum:** An in-depth look at the Scrum framework, which is a popular Agile methodology that uses sprints, backlogs, and daily stand-ups to manage projects.
- **Kanban:** An introduction to the Kanban methodology, which emphasizes visual management, continuous flow, and limiting work in progress.
- **Extreme Programming:** An overview of Extreme Programming (XP), which is an Agile methodology that emphasizes customer involvement, continuous testing, and frequent releases.

- **Test-Driven Development:** An introduction to Test-Driven Development (TDD), which is a software development approach that focuses on creating automated tests before writing code.
- **Behavior-Driven Development:** An overview of Behavior-Driven Development (BDD), which is a software development approach that focuses on describing the behavior of a system in natural language.
- **Summary:** A summary of the main points of each methodology, their strengths and weaknesses, and how to choose the right methodology for your project.
- Extras: Advanced topics such as DevOps, Continuous Integration/Continuous Deployment (CI/CD), and how to combine different methodologies for hybrid approaches.

Version Control with GIT:

- **Version control concept:** Understanding the basics of version control, its benefits, and its various types.
- **Download, install and configure GIT:** Installing GIT on your local machine and configuring it with your user details and preferences.
- **GitHub:** Introduction to GitHub, a web-based hosting service for version control, and its features such as repositories, issues, and pull requests.

- **Git graphical tools:** Overview of graphical user interfaces (GUI) and Integrated Development Environments (IDEs) that can be used to work with Git.
- **Git internals:** Understanding the inner workings of Git, including how Git stores and manages versions of files, branches, commits, and merges.
- **Undoing changes:** How to undo changes made to files or the repository using Git commands such as revert, reset, and checkout.
- **Branching and merge:** Creating and managing branches in Git, and merging changes from one branch to another.
- **Tags:** Creating and managing tags in Git to mark specific points in the repository's history, such as release versions.
- **Stash:** How to use Git stash to temporarily save changes that are not yet ready to be committed.
- **Remotes:** Working with remote repositories in Git, such as cloning, pushing, and pulling changes from remote repositories.
- **Branching strategies:** Overview of different branching strategies and workflows such as Gitflow and Github Flow.

Software Testing Introduction:

- **Introduction to Software Functional Testing:** An overview of software functional testing, its importance, and the different types of functional testing.
- **Test Planning:** An overview of test planning, which involves identifying test objectives, test strategies, and test schedules.
- **Requirements Testing:** An introduction to requirements testing, which involves verifying that the software meets the specified requirements.
- **Test Cases and Test Scenarios:** An in-depth look at test cases and test scenarios, which are used to define the conditions under which software will be tested and the expected results.
- **Defect Reporting:** An overview of defect reporting, which involves identifying and documenting defects in the software.
- **Test Results Reporting:** An introduction to test results reporting, which involves analyzing and documenting the results of the software testing.
- **Test Automation Basics:** An overview of test automation, which involves using software tools to automate the testing process and reduce manual effort.

Java Basics:

- **Introduction to the Java Basics Course:** An overview of the course, its objectives, and the topics covered.
- **Data Types:** An introduction to data types in Java, including primitive and reference types, and how to declare and use them.
- **Conditions and Loops:** An introduction to conditional statements, such as if-else statements and switch statements, and loops such as for loops and while loops.
- **Arrays:** An introduction to arrays in Java, including how to declare and initialize arrays, and how to access and modify their elements.
- **Classes:** An introduction to classes in Java, including how to declare and instantiate classes, and how to use them to create objects.
- **Introduction to OOP:** An introduction to object-oriented programming (OOP) concepts, such as encapsulation, inheritance, and polymorphism.
- **Abstract Classes and Interfaces:** An introduction to abstract classes and interfaces, which are used to define abstract types that can be implemented by other classes.
- **Nested Classes:** An introduction to nested classes in Java, including static nested classes, inner classes, and anonymous classes.

- **Strings:** An introduction to strings in Java, including how to create and manipulate string objects.
- **Collections and Maps:** An introduction to collections and maps in Java, including how to use them to store and manipulate groups of objects.
- **Exceptions:** An introduction to exceptions in Java, including how to use try-catch blocks to handle exceptions and how to create custom exceptions.
- **Annotations:** An introduction to annotations in Java, which are used to provide metadata about code elements.
- **Generics:** An introduction to generics in Java, which allow you to define classes and methods that can work with different types of objects.
- **Enum:** An introduction to enumerations in Java, which are used to define a fixed set of values.
- **Wrapper Classes and Optional Classes:** An introduction to wrapper classes, which are used to represent primitive data types as objects, and optional classes, which are used to represent values that may be null.
- **Code Documentation:** An introduction to code documentation in Java, including how to use Javadoc to document your code.

Data & Analytics - Introduction to SQL:

- **Database Basics:** An introduction to databases, their types, components, and architecture.
- **SQL Foundation:** An introduction to Structured Query Language (SQL), including how to create and manipulate tables, perform queries, and use aggregate functions.
- **SQL for Analysis:** An introduction to using SQL for data analysis, including how to filter, sort, and group data, and how to join tables

Clean Code - Introduction to Clean Code:

- **Introduction to Clean Code:** An overview of clean code and why it is important in software development.
- **Writing Clean Functions:** Best practices for writing clean functions, including how to make them small, focused, and testable.
- **Naming:** Best practices for naming code elements, including classes, methods, and variables.
- **Comments:** Best practices for writing comments, including when to use them and what to include.
- **Error Handling:** Best practices for error handling, including how to handle exceptions and write code that is resilient to errors..

Cloud Computing - Introduction to Cloud Computing:

- **Introduction to Cloud Computing:** An overview of cloud computing and its benefits.
- **Cloud Deployment Models:** An introduction to different cloud deployment models, including public, private, and hybrid clouds.

- **Cloud Service Models:** An introduction to different cloud service models, including infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS).
- **Cloud Providers:** An introduction to different cloud providers, such as Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP).
- **Cloud Security:** An overview of cloud security, including best practices for securing cloud-based applications and data.

Automated Testing Basics + Java:

OO Design Principles & Patterns

- **Patterns in General:** An introduction to different types of design patterns, including structural, behavioral, and creational patterns.
- **Factory Pattern:** A creational pattern that provides a way to create objects without specifying their concrete classes.
- **Strategy Pattern:** A behavioral pattern that enables the selection of an algorithm at runtime.
- **Builder Pattern:** A creational pattern that separates the construction of a complex object from its representation.
- **Singleton Pattern:** A creational pattern that ensures a class has only one instance and provides a global point of access to it.

Introduction to Test Automation and xUnit Test Framework:

- **Introduction to Test Automation:** An overview of test automation and its benefits.
- **UI/API/Performance/Security/Mobile Testing:** An introduction to different types of test automation, including user interface (UI), application programming interface (API), performance, security, and mobile testing.
- **Build Tools (Maven):** An introduction to Maven, a build automation tool used primarily for Java projects.
- **TestNG:** An xUnit test framework for Java that supports parameterized, data-driven, and parallel testing.

API Automation:

- **Client-Server Architecture:** An overview of client-server architecture, which is the basis of most web applications.
- **HTTP and HTTP Request/Response:** An introduction to Hypertext Transfer Protocol (HTTP) and HTTP request/response messages.
- **JSON and XML:** An introduction to JavaScript Object Notation (JSON) and Extensible Markup Language (XML), two commonly used data formats for web applications.
- **Postman:** A popular tool for testing and debugging API requests.
- **Rest Assured:** A Java-based library for testing RESTful web services.

Selenium WebDriver (Basic+Advanced):

- **Introduction:** An overview of Selenium WebDriver, a popular web testing tool.
- **HTML and CSS:** An introduction to HTML and CSS, the building blocks of web pages.
- **XPath:** A language used for selecting nodes in an XML or HTML document.
- **Selenium WebDriver:** An introduction to the WebDriver API and its methods for interacting with web pages.

- **WebDriver Waiters:** An introduction to the wait methods in WebDriver, which can help synchronize tests with the page under test.
- **JS Executor:** An advanced feature of WebDriver that allows JavaScript code to be executed within the context of a web page.

Automation Framework:

- **Automation Framework:** Maven + xUnit + WebDriver: This involves the use of Maven as a build tool, xUnit as the testing framework, and WebDriver for automating the web application. This helps in creating a structured and scalable test automation framework.
- **Page Object:** This is a design pattern that separates the page elements of a web application from the test scripts, making the tests more maintainable and reducing code duplication.
- **Page Factory:** This is an extension of the Page Object pattern that uses annotations to initialize web elements, making the code more readable and maintainable.
- **Singleton:** This is a design pattern that ensures only one instance of a class is created, which can be useful in maintaining the state of the application during the test.
- **Production AT Framework:** This includes various approaches like TDD (Test Driven Development), KDT (Keyword Driven Testing), DDT (Data Driven Testing), DDD (Domain Driven Design), BDD (Behavior Driven Development), and BDD + Cucumber. These approaches help in creating a robust and maintainable test automation framework that aligns with the development process.
- **ATF Architecture:** This is an architecture that helps in structuring the test automation framework and integrating it with the development process.

- **Continuous Integration with Jenkins:** This involves integrating the test automation framework with Jenkins, a popular continuous integration tool, to run the tests automatically and generate reports. This helps in achieving continuous testing and faster feedback.

CONCLUSION

In conclusion, this project on eBay website testing with Selenium and Java provides a detailed overview of several key technologies and methodologies used in software development and testing. The project covers software development methodologies such as Waterfall, Agile, Scrum, Kanban, extreme programming, test-driven development, and behavior-driven development. It also provides an overview of version control with GIT, software testing, Java basics, data and analytics, clean code, cloud computing, and automation frameworks.

By completing this project, learners will have a solid understanding of the concepts and tools used in software development and testing. They will also gain hands-on experience with technologies such as Selenium WebDriver, TestNG, Rest Assured, and Jenkins, which are widely used in the industry. This project is a valuable resource for anyone looking to learn about software development and testing and will provide a strong foundation for further learning and exploration in this field.