Introduction

This project demonstrates combined manual and automation testing on the Parabank demo banking application. It covers manual test case execution for user flow verification along with automation scripts using Selenium in Python.

Test Methodology

The testing approach integrates manual and automation testing to provide comprehensive coverage. Manual testing includes detailed test cases for various functionalities. Automation testing is performed using Selenium WebDriver in Python to automate critical user workflows.

Test Environment

Testing was conducted on a Windows 10 machine using the latest version of Google Chrome as the browser. The automation scripts were developed with Python 3.x and Selenium WebDriver. The Parabank application was accessed via the publicly available test site at http://parabank.parasoft.com. Test results with discovered bugs were tracked using Excel spreadsheets.

Manual Test Cases

- Load Parabank home page.

- Register new user with valid and invalid data.

- Login with valid and invalid credentials.

- View account summary after login.

- Transfer funds between accounts.

- Logout user.

- Validate error messages and navigation links.

Manual Test Cases for Parabank

TC ID	Feature	Test Case	Steps	Expected Result
TC_01	Home Page	Load home page	Open http://parabank.parasoft.com/	Home page loads without error
TC_02	Registration	Register new user	Fill registration form with valid data + submit	Registration success message or login link shown
TC_03	Registration	Register with invalid data	Submit empty or invalid form fields	Error messages shown on relevant fields
TC_04	Login	Login with valid credentials	Enter valid username/password + submit	Redirect to Accounts Overview page
TC_05	Login	Login with invalid credentials	Enter wrong username/password + submit	Error message shown, no login
TC_06	Account Overview	View account summary	Login successfully, click Accounts Overview	Correct account details displayed
TC_07	Fund Transfer	Transfer funds between accounts	Login, navigate to 'Transfer Funds', fill form	Success message shown; balance updated
TC_08	Logout	Logout user	Click logout button	Redirect to login page
TC_09	Navigation	Navigate menu links	Click various menu links	Corresponding page loads correctly
TC_10	UI Validation	Check error message styling	Trigger errors during form submissions	Error messages are user-friendly and visible

BUG Report

Bug ID	Bug Description	Expected Result	Actual Result	Severity	Status
B001	Inconsistent success messages during fund transfer	Consistent success message displayed after transfer	Success message sometimes differs or is missing	Medium	Open
B002	Non-responsive navigation links intermittently	Navigation should consistently work	Some links not responsive occasionally	High	Open
B003	UI alignment issues on account summary page	UI elements properly aligned	UI misalignment observed	Low	Open

Automation Test Cases

Script

```python
from selenium import webdriver

from selenium.webdriver.common.by import By

from selenium.webdriver.support.ui import WebDriverWait, Select

from selenium.webdriver.support import expected_conditions as EC

import time


def register(driver):

    driver.get('https://parabank.parasoft.com/parabank/register.htm')

    wait = WebDriverWait(driver, 15)

    wait.until(EC.visibility_of_element_located((By.ID, 'customer.firstName'))).send_keys('Misha')

    driver.find_element(By.ID, 'customer.lastName').send_keys('halarnkar')

    driver.find_element(By.ID, 'customer.address.street').send_keys('123 goa')

    driver.find_element(By.ID, 'customer.address.city').send_keys('porvorim')

    driver.find_element(By.ID, 'customer.address.state').send_keys('goa')

    driver.find_element(By.ID, 'customer.address.zipCode').send_keys('86501')

    driver.find_element(By.ID, 'customer.phoneNumber').send_keys('98657463636')

    driver.find_element(By.ID, 'customer.ssn').send_keys('12547478')

    driver.find_element(By.ID, 'customer.username').send_keys('mishaauser230')

    driver.find_element(By.ID, 'customer.password').send_keys('password')

    driver.find_element(By.ID, 'repeatedPassword').send_keys('password')

    driver.find_element(By.XPATH, "//input[@value='Register']").click()


    time.sleep(3)

    wait.until(EC.element_to_be_clickable((By.LINK_TEXT, 'Accounts Overview'))).click()

    wait.until(EC.title_contains('Accounts Overview'))

    print("Navigated to Accounts Overview page after registration.")


def fund_transfer(driver):

    wait = WebDriverWait(driver, 15)

    wait.until(EC.element_to_be_clickable((By.LINK_TEXT, 'Transfer Funds'))).click()

    amount_field = wait.until(EC.visibility_of_element_located((By.ID, 'amount')))

    amount_field.send_keys('150')



    wait.until(lambda d: len(Select(d.find_element(By.ID, 'fromAccountId')).options) > 0)

    wait.until(lambda d: len(Select(d.find_element(By.ID, 'toAccountId')).options) > 0)


    from_account_dropdown = Select(driver.find_element(By.ID, 'fromAccountId'))

    to_account_dropdown = Select(driver.find_element(By.ID, 'toAccountId'))


    print("From account options:", [opt.text for opt in from_account_dropdown.options])

    print("To account options:", [opt.text for opt in to_account_dropdown.options])


    if from_account_dropdown.options and to_account_dropdown.options:

        from_account_dropdown.select_by_index(0)
```

```python
        to_account_dropdown.select_by_index(0)
    else:
        print("No account options available for transfer -- cannot proceed.")
        return

    driver.find_element(By.XPATH, "//input[@value='Transfer']").click()

    wait.until(EC.text_to_be_present_in_element((By.ID, 'rightPanel'), 'Transfer Complete'))
    print("Fund transfer successful.")

def logout(driver):
    wait = WebDriverWait(driver, 15)
    wait.until(EC.element_to_be_clickable((By.LINK_TEXT, 'Log Out'))).click()
    wait.until(EC.title_contains('ParaBank | Welcome') or EC.url_contains('index.htm'))
    print("Logout successful.")

def main():
    driver = webdriver.Chrome()
    driver.maximize_window()
    try:
        register(driver)
        fund_transfer(driver)
        logout(driver)
    finally:
        driver.quit()

if __name__ == '__main__':
    main()
```
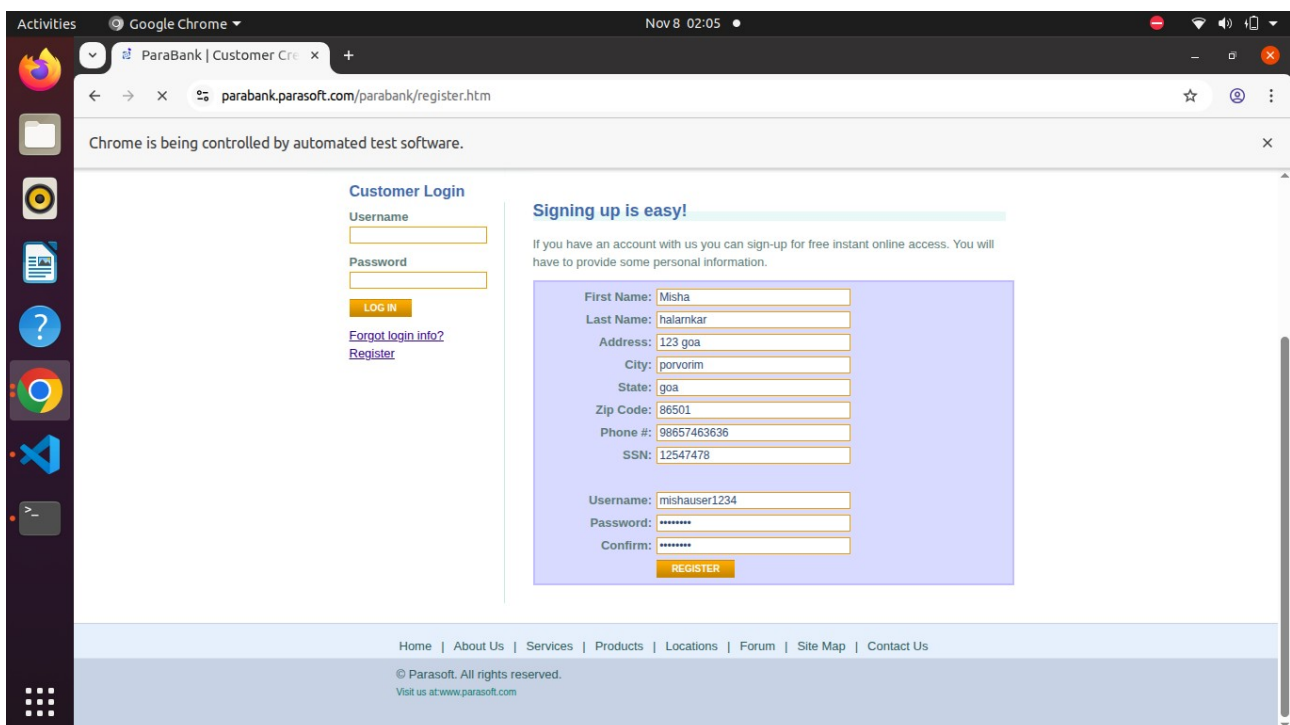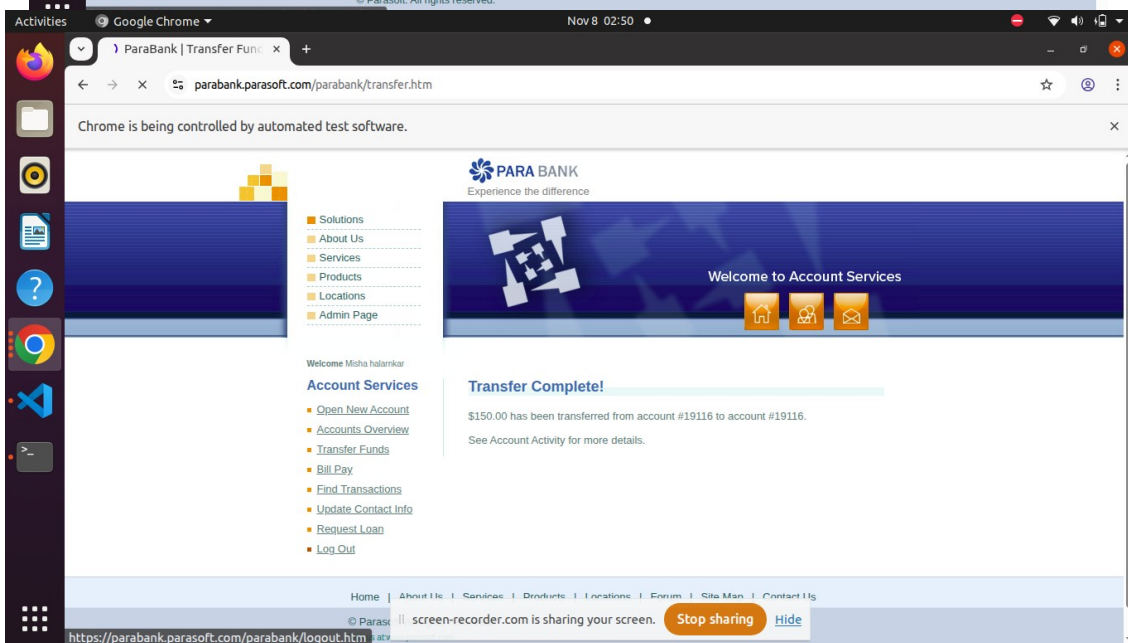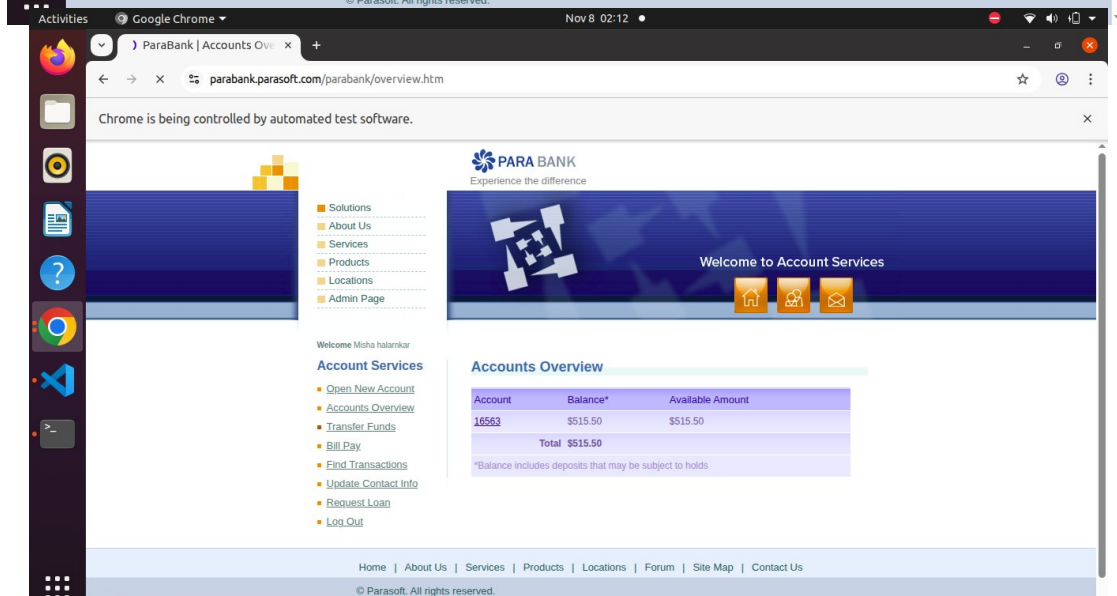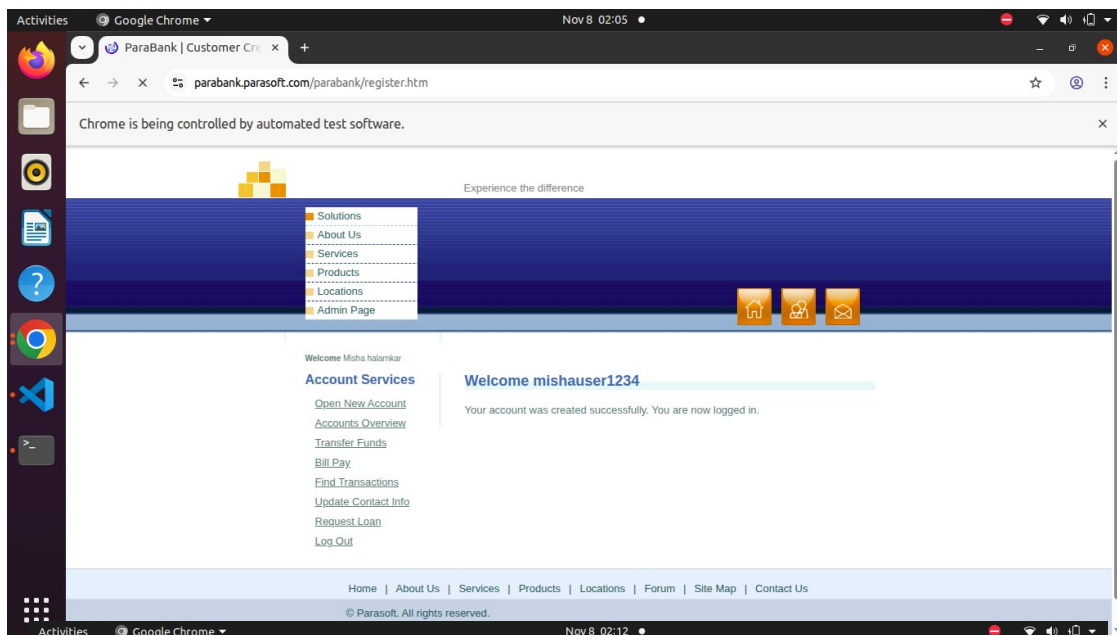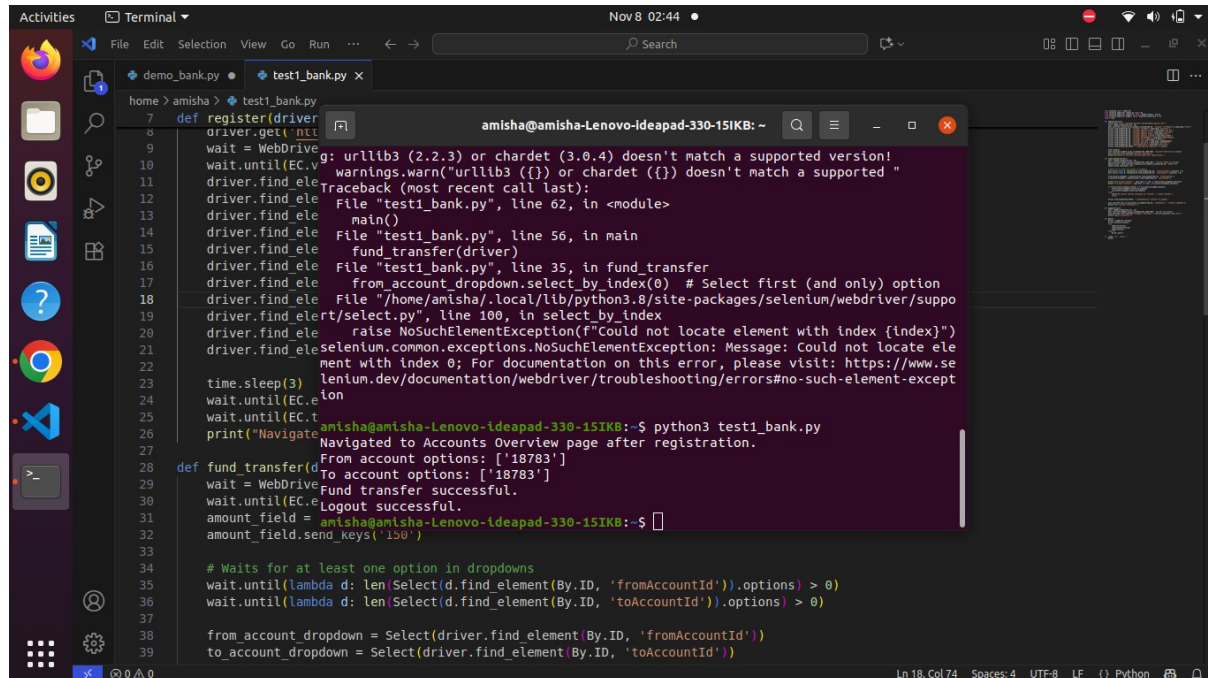
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Welcome Misha halarnkar

Account Services

- Open New Account
- Accounts Overview
- Transfer Funds
- Bill Pay
- Find Transactions
- Update Contact Info
- Request Loan
- Log Out

Welcome mishauser1234

Your account was created successfully. You are now logged in.

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Accounts Overview

Account	Balance*	Available Amount
16563	$515.50	$515.50
Total	$515.50	

*Balance includes deposits that may be subject to holds

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Transfer Complete!

$150.00 has been transferred from account #19116 to account #19116.

See Account Activity for more details.

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https://parabank.parasoft.com/parabank/logout.htm

Summary of Findings

The Parabank application fulfills its functional requirements, with the primary workflows operating correctly. Minor issues detected mostly relate to user interface impacting usability. The automation scripts effectively automate fundamental flows, reinforcing the value of automated regression testing.

CONCLUSION

This project provided valuable hands-on testing experience on a realistic banking web application. The blend of manual and automation testing validated the core functionalities. Additionally, the automation framework established can be extended for continuous integration and regression testing in future phases.

able insights for product enhancements. Additionally, the automation framework established can be extended for continuous integration and regression testing in future phases, strengthening practical testing skill sets relevant to quality assurance roles.