**INFT 1207 – Software Testing and Automation**

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**Group 7**

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**\*1. Introduction**

**The "Test Automation of Banking Project" represents a groundbreaking initiative aimed at enhancing the quality and robustness of a demo banking website. By employing sophisticated test automation techniques, this project diligently scrutinizes a range of crucial modules from the vantage point of a manager, ensuring that every facet of functionality is rigorously assessed. This comprehensive report delves into the depths of the project's purpose, scope, and the intricate software infrastructure that drives its successful execution.**

**\*2. Purpose of the Project\***

**The underlying purpose of the "Test Automation of Banking Project" is to revolutionize the testing paradigm of the demo banking website by harnessing the capabilities of automated testing. Through the strategic automation of testing processes across multiple modules, the project is driven by a combination of specific objectives, each contributing to the overarching purpose:**

**- \*\*Enhancing Precision and Functionality\*\*:**

**At the core of the project lies the ambition to ascertain the precision and functionality of various features, with an emphasis on the manager's role in interacting with the banking website. This objective entails meticulously crafting test scenarios and scripts to rigorously assess every possible interaction a manager might have with the system.**

**- \*\*Elevating Testing Efficiency\*\*:**

**By developing and deploying automated test scripts, the project seeks to elevate the efficiency and reliability of the testing process. This is achieved by minimizing manual intervention and human error, thereby optimizing the utilization of testing resources.**

**- \*\*Unearthing Defects and Vulnerabilities\*\*:**

**An integral facet of the project is the systematic identification of defects, vulnerabilities, and potential anomalies within the intricate functionalities of the banking website. Through a combination of scripted interactions and comprehensive test cases, the project aims to unveil hidden issues that could impact the system's stability and security.**

**- \*\*Streamlining Test Execution and Reporting\*\*:**

**Automation is pivotal in streamlining the execution of test cases, collation of results, and the subsequent reporting of identified bugs. The project aims to create a seamless process that ensures consistency and accuracy in recording and reporting test outcomes.**

**- \*\*Empowering Experiential Learning\*\*:**

**The "Test Automation of Banking Project" serves as an invaluable learning opportunity for participants, providing practical exposure to the utilization of Selenium WebDriver and Python for test automation. This experience not only enhances participants' technical prowess but also equips them with sought-after skills in the realm of software testing and quality assurance.**

**- \*\*Fostering Collaboration and Teamwork\*\*:**

**The project is designed to be a collaborative effort, encouraging participants to work together to achieve common goals. This fosters teamwork, effective communication, and collective problem-solving – skills that are essential in real-world professional scenarios.**

**- \*\*Promoting Real-World Application\*\*:**

**By simulating real-world scenarios and interactions within a banking context, the project encourages participants to apply their theoretical knowledge to practical situations. This bridge between theory and application is instrumental in reinforcing participants' understanding and competency.**

**In essence, the purpose of the "Test Automation of Banking Project" is multifaceted and comprehensive. It not only aims to ensure the functionality and stability of the demo banking website but also serves as a catalyst for learning, collaboration, and the application of cutting-edge testing methodologies.**

**\*3. Scope of the Project\***

**The scope of the "Test Automation of Banking Project" extends to a comprehensive evaluation of nine pivotal modules, each of which represents a critical aspect of the manager's interactions within the banking website. The project's scope encompasses both the breadth and depth of testing activities, ensuring that every module is rigorously examined. The following modules constitute the core of the project's testing endeavors:**

1. **\*\*New Customer Module\*\*:**

**This module is dedicated to the seamless addition of new customers to the banking system. Managers are empowered to input essential customer details, including name, gender, address, contact information, and more. The scope includes verifying the accuracy of data entry, boundary testing, and assessing the system's response to different inputs.**

1. **\*\*Edit Customer Module\*\*:**

**Managers are equipped with the capability to effect changes to customer details such as address, email, and telephone numbers. The scope encompasses testing the accuracy of data modification, verifying data persistence, and ensuring the seamless execution of update operations.**

1. **\*\*Delete Customer Module\*\*:**

**Managers can initiate the deletion of customers, subject to the absence of active accounts linked to the customer. The scope involves verifying the system's ability to handle customer deletions, assessing response times, and confirming the implementation of requisite business rules.**

1. **\*\*New Account Module\*\*:**

**In this module, managers can create new accounts, spanning both savings and current account types. The scope entails testing the accuracy of account creation, validating initial deposit requirements, and assessing the system's response to different account types.**

1. **\*\*Edit Account Module\*\*:**

**The "Edit Account" module facilitates modifications to existing account details, a task crucial for maintaining accurate records. The scope includes testing the accuracy of account modifications, verifying data consistency, and assessing the implementation of business rules.**

1. **\*\*Delete Account Module\*\*:**

**Managers can utilize this module to effect the deletion of accounts associated with specific customers. The scope encompasses verifying the system's ability to handle account deletions, confirming data integrity, and assessing the implementation of requisite checks.**

1. **\*\*Balance Enquiry Module\*\*:**

**Managers can perform balance enquiries for specific accounts, offering insights into customer finances. The scope involves testing the accuracy of balance calculations, verifying data presentation, and assessing response times.**

1. **\*\*Mini Statement Module\*\*:**

**This module provides managers with a snapshot of the last five transactions associated with an account. The scope includes testing the accuracy of transaction retrieval, validating data presentation, and assessing system response times.**

1. **\*\*Customized Statement Module\*\*:**

**Managers can generate customized transaction statements based on parameters such as date and transaction value. The scope entails testing the accuracy of statement generation, validating data filtration, and assessing the implementation of customization features.**

**In addition to module testing, the project extends its scope to the creation of a specialized test suite file named "testsuite.py." This file features a user-friendly menu-driven program that empowers users to selectively execute test cases corresponding to specific webpages, enhancing flexibility and control over the testing process.**

**\*4. Software Utilized\***

**The "Test Automation of Banking Project" is underpinned by a robust software ecosystem comprising cutting-edge tools and technologies. This intricate software landscape forms the bedrock for creating, executing, and managing automated test scenarios. The project leverages a combination of software components, each contributing uniquely to the project's success:**

**- \*\*Selenium WebDriver\*\*:**

**A cornerstone of the project, Selenium WebDriver is an open-source testing tool renowned for its capability to automate interactions with web browsers. Leveraging WebDriver's capabilities, the project constructs automated test scripts that replicate user actions and validate the functionality of user interface (UI) elements. WebDriver's compatibility with multiple browsers ensures comprehensive testing coverage.**

**- \*\*Python Programming Language\*\*:**

**Python serves as the project's scripting language of choice. Renowned for its readability and versatility, Python empowers participants to create sophisticated automated test scripts. Python's extensive standard library and third-party packages simplify the scripting process, allowing for the seamless interaction with web elements, data validation, and test reporting.**

**- \*\*Web Browsers\*\*:**

**The project extends compatibility to an array of popular web browsers, including Google Chrome and Mozilla Firefox. This compatibility aligns seamlessly with Selenium WebDriver, enabling the automated execution of test cases across diverse browser platforms. The ability to test across multiple browsers ensures comprehensive coverage of potential user scenarios.**

**The strategic combination of Selenium WebDriver and Python, along with support for multiple web browsers, empowers the project to simulate real-world interactions within a controlled testing environment. This amalgamation of software components forms a robust foundation for achieving the project's objectives while fostering learning and skill development.**

**The naming convention used in programs**

**Throughout the project, our team followed the "snake\_case" naming convention. This approach is widely utilized in programming languages, particularly in Python. Consequently, a majority of our variables and test cases were named using this convention. For instance, examples include testcase\_07\_edit\_account, test\_delete\_customer, and test\_edit\_customer\_empty\_city. However, for class names, we used the CamelCase naming convention. For example, CamelCase was used for class names such as TestSuite, as well as for method names like setUpClass**

**Distribution of work among the team members**

**In the given group project, with a total of 120 test cases, each team member was assigned an equal share of 30 test cases. This equitable distribution ensured that the workload was evenly spread among all members, preventing any single person from being overwhelmed or underutilized. This approach also promotes a collaborative environment, encouraging team members to collectively contribute to the project's success.** **The collaborative process began with a clear understanding of the project's scope and objectives.** **By sharing the load, each member had a fair contribution, leading to efficient completion of the task. I believe that fair work distribution among the group and team work played the crucial role for our group’s success. This approach not only allowed each team member to highlight their individual strengths but also created a supportive environment where each individual could receive assistance from other group members.**

**The approach used by the team**

**For this project, our approach centered on two essential principles: distributing the work evenly and keeping open lines of communication within the team. We aimed to ensure that each team member had a fair share of tasks, creating a sense of equality and teamwork.**

**To facilitate effective communication, we relied on the Discord. It became our hub for idea exchange, offering mutual support, and asking questions. As the project advanced and the deadline approached, we started using Discord for online meetings. These sessions became spaces where we shared our code, tackled problems collectively, and brainstormed solutions.**

**By sticking to this balanced workload approach and creating an environment of collaboration, we could achieve not only to complete the assignment but also gained valuable insights into effective teamwork.**

**Conclusion,**

**The "Test Automation of Banking Project" is a multifaceted endeavor aimed at elevating the testing process for a demo banking website. Through the project's purpose-driven approach, comprehensive scope, and utilization of cutting-edge software tools, the endeavor not only ensures the robustness of the system but also facilitates experiential learning and the application of industry best practices. As the project's participants embark on this journey of exploration, collaboration, and automation, they contribute to the advancement of software quality assurance methodologies and the cultivation of essential skills for the digital age.**

**References:**

**Stack Overflow:**

[**https://stackoverflow.com/questions/71858651/attributeerror-htmltestresult-object-has-no-attribute-count-relevant-tb-lev**](https://stackoverflow.com/questions/71858651/attributeerror-htmltestresult-object-has-no-attribute-count-relevant-tb-lev)

**Pypi.org:**

[**https://pypi.org/project/html-testRunner/**](https://pypi.org/project/html-testRunner/)

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