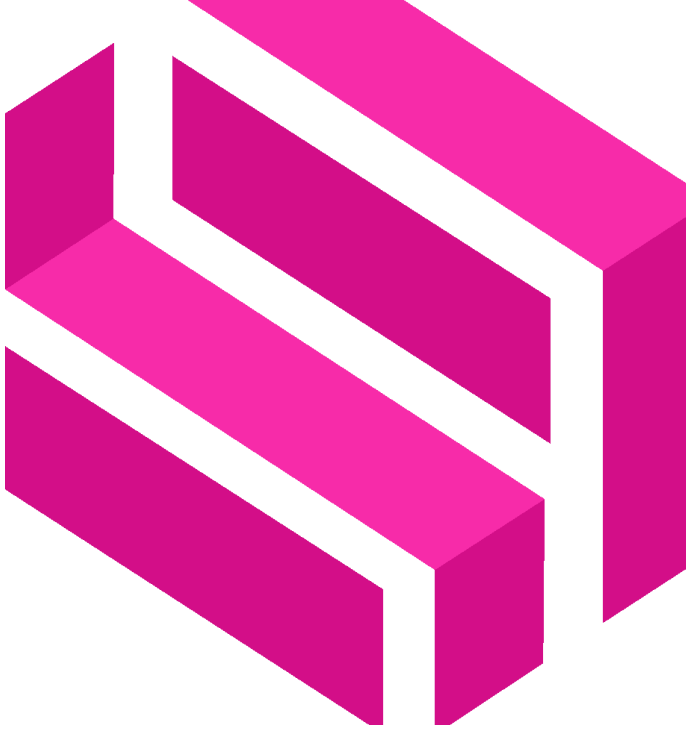

SOFTWARE TESTING ACADEMY

Test Automation

- Teaching Concept V3

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Inhalt

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1. Test Automation Approach

What is already there?

1.1.1 Topics

Fundamentals of Test Automation:

- When to Automate
- What to Automate
- Value of Test Automation

1.1.2 Goals

- As a prospective tester I am able to answer the following questions, explore the concepts and explain it to others:

- Why do we need a test process?
- What is needed for test automation?
- When is it worth to automate?

1.1.3 Outcome

- I am able to name critical criteria that helps to decide, if automation is useful or not.
- I have a list of elements that need to be evaluated before starting a test automation process (Automation Strategy)

1.1.3.1 Materials

- What is automated testing? Beginner intro & automation demo https://www.youtube.com/watch?v=pQPUs9uaKUM (Video) (15 min)
- Setting a Foundation for Successful Test Automation : Automation strategy (13 Min Video) https://testautomationu.applitools.com/setting-a-foundation-for-successful-test-automation/chapter1.html

- Which Tests Should We Automate - Angie Jones – Sr. Automation Engineer, Twitter https://www.youtube.com/watch?v=VL-_pnICmGY
- 15 Reasons Why You Should (or shouldn't) Automate a Test (Blog) https://testguild.com/what-to-automate/

1.1.3.2 Exercises (see extra document)

1.2 What do I need to make it better?

1.2.1 Topics

- Test Automation Design Approaches
- When to Automate
- How to Decide Which Types of Test Cases to Automate
- Who´s involved in Automation

1.2.2 Goals

As a prospective tester I am able to answer the following questions, explore the concepts and explain it to others:

- Identification and understanding Stakeholders
- Name the importance of TA processes

1.2.3 Outcome

- I am able to explain the importance of design approaches
- I can name at least 3 reasons why there is value for a automated testing scenario
- I can define a goal of test automation
- I can name pot. Stakeholders, which have influence or are influenced.

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1.2.3.1 Materials

- How to Decide Which Types of Test Cases to Automate: https://www.perfecto.io/blog/types-of-test-cases-to-automate
- Persona Based Testing: https://medium.com/@ChamalAsela/persona-based-testing-de6e1396c23c
- Top design patterns for test automation frameworks (blog): Top design patterns for test automation frameworks · Devbridge
- How to choose which Test to automate: How to Choose Which Test to Automate?

1.2.3.2 Exercises (see extra document)

1.3 How would I make it better

1.3.1 Topics

Tool Selection Criteria
Test Automation Tools / Suites
Test Automation Applications

1.3.2 Goals

As a prospective tester I am able to answer the following questions, explore the concepts and explain it to others:

- What options / tools do I have?

1.3.3 Outcome

- I have some basic knowledge about tooling
- I know where to get necessary information about the tools / suites

- I can differentiate which tools are used in what kind of purpose

1.3.3.1 Materials

- How to Select the Right Automation Tool for Website Testing and which Criteria for choosing an automation testing tool (Blog): https://blog.testproject.io/2022/09/28/how-to-select-the-right-automation-tool-for-website-testing/
- Top 15 list of automation testing tools | Latest Update in 2023 (article): https://katalon.com/resources-center/blog/automation-testing-tools
- Setting a Foundation for Successful Test Automation : Chapter 4 – Tooling for Test Automation (Video): https://testautomationu.applitools.com/setting-a-foundation-for-successful-test-automation/chapter4.html

1.3.3.2 Exercises (see extra document)

1.4 Let´s make it better

1.4.1 Topics

- Risks of test automation
- Requirements of Test Automation
- Creating Automation Scenarios
- Who is involved in test automation

1.4.2 Goals

As a prospective tester I am able to answer the following questions, explore the concepts and explain it to others:

- How to identify relevant requirements?
- How to define risks in test automation?
- How to select a good scenario?

1.4.3 Outcome

- I know how to find possible risks regarding the Use Case or the Requirements

- I am able to formulate a TA scenario / (I know what to do to formulate a good TA scenario)

1.4.3.1 Materials

- The Risks Associated With Automation Testing: https://www.sciencetimes.com/articles/41636/20221230/the-risks-associated-with-automation-testing.htm
- What is Risk Analysis in Software Testing and how to perform it?: https://www.edureka.co/blog/risk-analysis-in-software-testing/
- Make a Score Card to Prioritize Which Tests to Automate: https://www.perfecto.io/blog/types-of-test-cases-to-automate
- Automation Testing Example: Use Case Scenario: (Click: "Automation Testing Example: Use Case Scenario"): https://www.browserstack.com/guide/automation-testing-tutorial

1.4.3.2 Exercises (see extra document)

1.5 Did I make it better?

1.5.1 Topics

- Risks of test automation
- Requirements of Test Automation
- Creating Automation Scenarios
- Who is involved in test automation

1.5.2 Goals

As a prospective tester I am able to answer the following questions, explore the concepts and explain it to others:

- value measurements
- time saved
- "Feeling" impact

1.5.3 Outcome

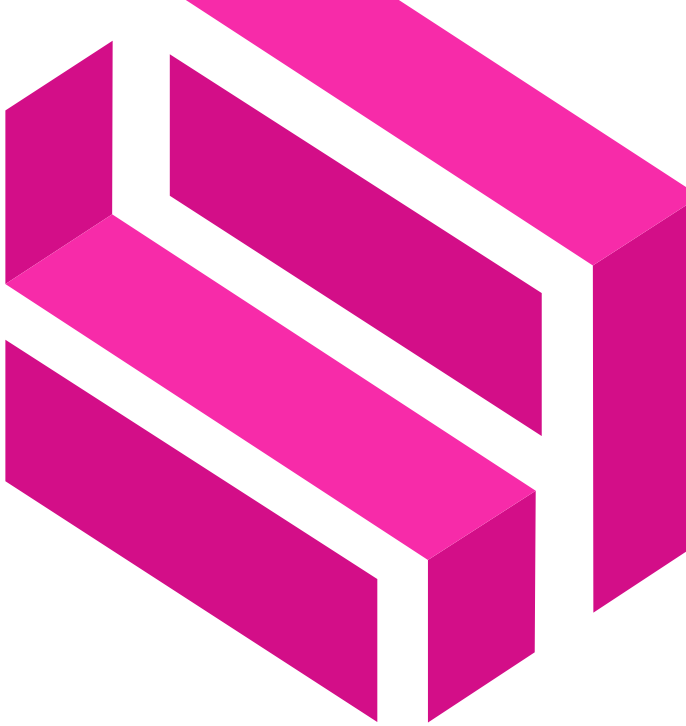
- I know how to write a high quality report

- I know which data I can use to show the value of an suitable Test Automation Approach

1.5.3.1 Materials

- 3 Ways To Measure ROI For Test Automation: https://www.kiwiqa.com/3-ways-to-measure-roi-for-test-automation/ (Pflicht)
- How to Calculate ROI on Test Automation?: https://www.testgrid.io/blog/roi-on-test-automation/ (Pflicht)
- Understanding Test Automation Report in Depth: https://www.browserstack.com/guide/understanding-test-automation-report (Pflicht)
- Chapter 4: Test Automation Reporting and Metrics: https://www.youtube.com/watch?v=cKTuumXuvnE

1.5.3.2 Exercises (see extra document)



SOFTWARE TESTING ACADEMY

Exercises “What is already there”

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INDEX

1. Bubble – “What is already there”

1.1. What is this bubble about?

Introduction

Welcome to the exciting world of Test Automation! As a beginner, you might be wondering what this field is all about and why it's becoming increasingly important in the realm of software development.

Test Automation is a fascinating field that leverages the power of software to conduct tests that ensure the quality and reliability of applications. It's an area that's gaining momentum due to its potential to streamline testing processes, improve accuracy, and ultimately deliver better products to customers.

In Test Automation, we use specialized tools to execute a suite of test cases automatically. This method is not only efficient but also allows for more consistent and reliable testing outcomes. However, it's important to note that not all tests are suitable for automation. Understanding when and where to apply automation is a key skill you'll develop as you delve deeper into this field.

As you embark on your learning journey, you'll explore various aspects of Test Automation. You'll learn about the scope of automation, the selection of appropriate tools, the preparation of test data, the design and execution of test cases, and the maintenance and updating of tests. You'll also learn how to monitor and report results effectively.

One of the most crucial aspects you'll learn before starting a test automation project is understanding the application under test. This includes its functionality, behavior, and expected outcomes. This knowledge will guide

you in identifying which test cases are suitable for automation and which should be done manually.

Starting a new automation process can be both challenging and rewarding. It involves identifying what to automate and how to automate it. You'll learn to start small, write reusable test cases, and explore new areas of the application with automation.

You'll also get to know about the main roles involved in test automation, such as the test automation engineer and the test manager, and understand their responsibilities in the testing process.

We hope this introduction has piqued your interest in Test Automation. Remember, learning is a journey, and it's okay to take your time and explore. As you delve into this field, you'll discover its nuances and understand why it's such a vital part of software development. Happy learning!

Topics

- When to Automate
- What to automate
- Who's involved in Automation
- How to Decide Which Types of Test Cases to Automate
- Value of Test Automation

Goal

When you finish this unit, you will be able **to answer the following questions, explore the concepts and explain it** to others:

- Why do we need a test process?
- What is needed for test automation?
- When is it worth to automate?

Now let's dive into some practical learning materials. We'll start with some fundamental resources, including videos and blogs, that will help you grasp the core concepts of Test Automation (see lists attached).

As we progress through these materials, we'll be applying our learning to a practical example - the website booking.com. This is a common website where you can choose your mother tongue, making it a great platform for us to explore and apply your Test Automation skills.

Outcomes

When you finish this unit, you will be able to:

- name critical criteria that helps to decide, if automation is useful or not.
- know a list of elements that need to be evaluated before starting a test automation process (Automation Strategy)

Material

- What is automated testing? Beginner intro & automation demo: https://www.youtube.com/watch?v=pQPUs9uaKUM
- Setting a Foundation for Successful Test Automation: Automation strategy: https://testautomationu.applitools.com/setting-a-foundation-for-successful-test-automation/chapter1.html
- Which Tests Should We Automate - Angie Jones – Sr. Automation Engineer, Twitter: https://www.youtube.com/watch?v=VL-_pnICmGY
- Manual Testing VS automated Testing: https://usersnap.com/blog/automated-vs-manual-user-testing/#witesting
- 15 Reasons Why You Should (or shouldn't) Automate a Test (Blog): https://testguild.com/what-to-automate/

Additional Material

- Automation Testing Tutorial: Getting Started: https://www.browserstack.com/guide/automation-testing-tutorial
- What Is Automation Testing? Ultimate Guide & Best Practices: https://katalon.com/resources-center/blog/what-is-automation-testing
- What is Automation Testing? Test Tutorial (Blog): https://www.guru99.com/automation-testing.html

Exercise

1. Manual Exploration of Booking.com

the goal of this exercise is to gain practical experience in exploring Booking.com, recognize the areas that require testing, understand the importance of testing those features or functionalities, and determine where test automation can be effectively utilized to ensure the proper functioning of the website.

Your first task is to manually explore the website booking.com. As you navigate through the site, consider areas where testing could be important.

This could be anything from the search functionality to the booking process, user registration, or even the display of hotel information.

As you explore, ask yourself: What could be tested here? Why is it important to test this feature or functionality? Where do you think Test Automation could be helpful in ensuring this part of the website works as expected? Write down your thoughts

This exercise is to help you think like a tester and understand the practical applications of Test Automation. It's an opportunity for you to apply the theoretical knowledge you've gained so far to a real-world example.

Questions and Quizzes

After exploring booking.com, you'll find a series of questions and quizzes designed to test your understanding of the material and your observational skills. These questions will cover a range of topics, from the basics of Test Automation to the specifics of applying these concepts to a website like booking.com.

Please take the time to answer these questions. Remember, all the answers can be found in the material provided so far. If you're unsure about any question, feel free to revisit the videos, blogs, and the manual exploration exercise for clarity.

This part of your learning journey is designed to reinforce your understanding of Test Automation and its practical applications. It's also an opportunity for you to reflect on what you've learned and identify areas where you might need further study.

Remember, learning is a journey, and it's okay to take your time and explore. Don't hesitate to ask questions or revisit the materials as needed. Happy learning!

Exercise: See Quizzes "What is already there"

Identifying What to Automate

The next step in your learning journey is to identify what you want to automate on booking.com. Not all tests are suitable or necessary for automation. Some tests are better performed manually, while others can benefit significantly from automation.

As you explore booking.com, consider which tests could be automated. These could be tests that are repetitive, require multiple data sets, or need to be executed frequently. Also, consider tests that are time-consuming or prone to human error when performed manually.

As you identify what to automate, consider the following questions:

- Which tests would be more efficient and accurate if automated?
- How will automation improve the coverage and reliability of these tests?
- How will automating these tests contribute to your overall test automation goal?

Remember, the goal of Test Automation is not to automate everything but to automate strategically. By defining your goal and identifying what to automate, you're taking important steps towards a successful Test Automation strategy.

additional helpful information to help learners [extra field or area]

important steps towards a successful Test Automation strategy:

1. Identify the Most Used Parts: Start by identifying the most frequently used parts of the website or a specific part of the website. For

http://booking.com , these would typically include the search function, hotel booking, or attraction booking. These are the areas where you would want to focus your testing efforts, as they are the most critical for the user experience.

2. **Manual Searching**: Begin with manual searching. This involves manually entering search terms and observing the results. You're looking to understand the basic search variables (like location, dates, number of guests) and the results you receive. Note down which results are constant despite changing the search variables and which are variable.
3. **Identify Test Cases**: Based on your manual searching, identify test cases for automation. These should be scenarios where you expect a specific outcome given a certain set of inputs. For example, searching for a hotel in a specific city on a specific date should return available hotels in that city on that date.
4. **Determine Value of Automation**: Not all test cases need to be automated. Determine where automation has the most value. This is typically in areas where tests need to be repeated often, where manual testing is time-consuming or prone to error, or where the risk of failure is high. For example, the basic search function is used frequently and needs to work correctly every time, so automating tests for this function could be valuable.
5. **Write Automated Tests by a step by step guide**: Once you've identified your test cases and determined which ones to automate, you can start writing your automated-like tests. This involves writing scripts that perform the actions as user would take (like entering search terms and clicking the search button), and then checking the results to make sure they are what you expect.

Remember, testing is an iterative process. You'll likely need to go through these steps multiple times as you continue to improve your website.

Sample Answers [extra field or area]

1. What do you want to automate?

Given the functionalities on the "Attractions" section of http://booking.com , we would want to automate the following:

- **Search Functionality:** This is a critical feature of the website. We would want to ensure that the search returns accurate results based on the user's input.
- **Booking Process:** This involves multiple steps and user inputs. Automating this process would help ensure that all steps work as expected and that the user can successfully complete a booking.
- **Display of Attraction Information:** This feature is crucial for users when deciding on a booking. Automating the testing of this feature would ensure that the information displayed is accurate and up-to-date.

Remember, these are just examples. The actual areas to automate would depend on various factors, including the complexity of the feature, the frequency of use, and the impact on the overall user experience.

Exchange with your Learning Coach

1. Discussion with Your Agile Learning Coach

Now that you've explored booking.com, identified potential areas for Test Automation, and formulated your initial Test Automation approach, it's time to sit down with your Agile Learning Coach. This discussion is a crucial part of your learning journey.

During this discussion, present your findings and your proposed Test Automation approach. Share your thoughts on what you want to automate and why. Discuss the goals of your Test Automation approach and how you believe it will benefit the testing process on booking.com.
Your Agile Learning Coach will provide valuable feedback on your approach, suggest improvements, and answer any questions you might have. This is a great opportunity to clarify any doubts and gain insights from someone with more experience in the field.

2. Ask Questions and Get Feedback

Don't hesitate to ask questions during your discussion. Whether you're unsure about a particular aspect of Test Automation, need clarification on the material you've studied, or want to know more about the practical applications of Test Automation, your Agile Learning Coach is there to help.

Also, be open to feedback. Constructive feedback is a powerful tool for learning and improvement. It can provide you with a different perspective, highlight areas you might have overlooked, and offer suggestions for improvement.

Remember, the goal of this discussion is not to have a perfect Test Automation approach, but to learn and grow. Be open, curious, and eager to learn. This is the final step in this part of your learning journey, but it's just the beginning of your adventure in Test Automation. Happy learning!

1.2 Quizzes "What is already there"

Matching Quizz:

Match the following roles with their responsibilities in Test Automation (TA):

Roles:

1. The Software Developer
2. The Test Manager
3. The Test Automation Engineer
4. The Project Manager

Responsabilities:

a) Writes the code for the software application
b) Primarily responsible for designing and building the test automation frameworks
c) Manages the project and ensures that it is completed on time and within budget
d) Oversees the entire testing process, including the implementation of test automation

Fill in the blanks:

1. Automated testing is typically a good choice for time - **consuming/small/simple** tasks and not for ***small/large/complex*** updates.
2. An advantage of manual testing is that it allows for **accurate/inaccurate/random** setup of automated testing and it requires **more/less/equal** people and more time.
3. It is worth to automate when **automation/manual/random** testing provides more value than manual testing and when **large/small/medium** amounts of data need to be tested.
4. The main disadvantage of automation testing is that it is **expensive/cheap/affordable**.

5. The main reason for test automation failures is **lack of a proper strategy/lack of skilled testers/inadequate tools**.
6. The main disadvantage of test automation is that it **requires maintenance/does not require maintenance/occasionally requires maintenance**.
7. Automation testing provides more value than manual testing when the software is **not small and simple/small and simple/large and complex** and when **repetitive/non-repetitive/random** tasks need to be performed.
8. Before starting a Test Automation (TA) project, it's crucial to ask: "What is the **(goal /cost / scope)** or **(objectve / duration / limitantions)** of the automation?"

Answers Blanks [not directly visible to the learner]

1. Fill in the blanks: Automated testing is typically a good choice for **time-consuming** tasks and not for **small** updates.
2. Fill in the blanks: An advantage of manual testing is that it allows for **accurate** setup of automated testing and it requires **more** people and more time.
3. Fill in the blanks: It is worth to automate when **automation** testing provides more value than manual testing and when **large** amounts of data need to be tested.
4. Fill in the blanks: The main disadvantage of automation testing is that it is **expensive**.
5. Fill in the blanks: According to the article, the main reason for test automation failures is **lack of a proper strategy**.
6. Fill in the blanks: The main disadvantage of test automation according to the article is that it **requires maintenance**.
7. Fill in the blanks: Automation testing provides more value than manual testing when the software is **not small and simple** and when **repetitive** tasks need to be performed.
8. Before starting a Test Automation (TA) project, it's crucial to ask: "What is the **goal** or **objectve** of the automation?"

True or False:

1. One advantage of manual testing over automated testing is that it allows for more flexibility.
2. User experience tests for usability are typically automated.
3. True or False: Having a test automation strategy ensures that the right tests are automated.
4. True or False: Automation testing is more beneficial than manual testing when the software changes infrequently and when large amounts of data need to be tested.

Answers [not directly visible to the learner]

1. One advantage of manual testing over automated testing is that it allows for more flexibility. True
2. User experience tests for usability are typically automated. False
3. Having a test automation strategy ensures that the right tests are automated. True
4. Automation testing is more beneficial than manual testing when the software changes infrequently and when large amounts of data need to be tested. True

Matching

1. Match the following tests with whether they are good candidates for automation or not:
    - Tests that need to be run for every build/release
    - Tests that you will only run one time
    - Tests that need to run immediately
    - Tests without predictable results

Answers [not directly visible to the learner]

1. Match the following tests with whether they are good candidates for automation or not:
    - Tests that need to be run for every build/release Good candidate

- Tests that you will only run one time **Not a good candidate**
- Tests that need to run immediately **Good candidate**
- Tests without predictable results **Not a good candidate**

Drag and drop the following scenarios to match when manual testing is typically used:

1. For time-consuming tasks
2. During the initial development stage
3. For functional testing
4. For performance or load testing

Answers [not directly visible to the learner]

1. Drag and drop the following scenarios to match when manual testing is typically used:
    - For time-consuming tasks **Automated testing**
    - During the initial development stage **Manual testing**
    - For functional testing **Manual testing**
    - For performance or load testing **Automated testing**

Multiple Choice:

1. Which of the following is not a type of testing suitable for automation?

- A. Regression Testing
- B. Load Testing
- C. Exploratory Testing
- D. Data Driven Testing

1. Multiple Choice: What is the first step in setting a foundation for successful test automation?
    - A. Choosing the right tools
    - B. Defining the strategy
    - C. Writing test scripts

- D. Executing the tests

2. Multiple Choice: What is the main factor to consider when deciding which tests to automate?

    - A. The complexity of the test
    - B. The frequency of the test
    - C. The cost of the test
    - D. The importance of the test

3. *Which of the following is NOT part of the test process?*

    - Creating test cases and test scripts
    - Setting up and maintaining test environments
    - Logging and tracking defects
    - Coding or development of the software application

4. *Which of the following is part of the test process?*

    - Designing the user interface of the software
    - Writing the code for the software application
    - Creating test cases and test scripts
    - Deploying the software to production

Answers [not directly visible to the learner]

1. Multiple Choice: Which of the following is not a type of testing suitable for automation according to the article?

    - A. Regression Testing
    - B. Load Testing
    - C. Exploratory Testing **Correct**
    - D. Data Driven Testing

2. Multiple Choice: What is the first step in setting a foundation for successful test automation?

    - A. Choosing the right tools
    - B. Defining the strategy **Correct**
    - C. Writing test scripts

- D. Executing the tests

3. Multiple Choice: What is the main factor to consider when deciding which tests to automate?

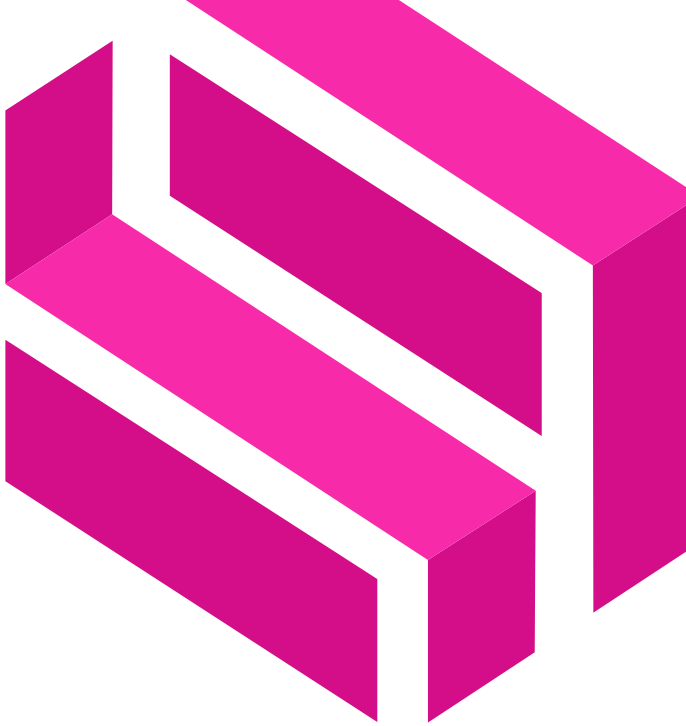
   - A. The complexity of the test
   - B. The frequency of the test **Correct**
   - C. The cost of the test
   - D. The importance of the test

4. *Which of the following is NOT part of the test process?*

   - Creating test cases and test scripts
   - Setting up and maintaining test environments
   - Logging and tracking defects
   - Coding or development of the software application **Correct**

5. *Which of the following is part of the test process?*

   - Designing the user interface of the software
   - Writing the code for the software application
   - Creating test cases and test scripts **Correct**
   - Deploying the software to production



SOFTWARE TESTING ACADEMY

Exercises “What is already there” – TA Approach

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INDEX

1. Exercises – “What do I need to make this better?”

1.1. Practical Tasks

Introduction

Welcome to the next exciting chapter of your Test Automation journey! This chapter is all about the test process, understanding the needs of the users and writing your first requirements. As we delve into this topic, we'll be focusing on http://booking.com , applying our learnings to this real-world platform.
Users play a crucial role in any project, and understanding their needs is key to the success of your Test Automation efforts. Users can include anyone who has an interest in using the product. Each User has unique needs and expectations, and it's important to identify and understand these to ensure your Test Automation approach aligns with their goals.
In this chapter, you'll learn how to identify and understand your stakeholders by writing Personas.
Another key aspect of this chapter is understanding the importance of Test Automation processes. A well-defined Test Automation process can streamline your testing efforts, improve efficiency, and ensure consistent, reliable results. You'll learn about the different stages of a Test Automation process, from planning and design to execution and maintenance.
By the end of this chapter, you'll be able to answer the questions from the Quiz and learn from the pratical experience. Happy learning!

Topics

- Test Automation Design Approaches
- When to Automate
- How to Decide Which Types of Test Cases to Automate
- Who´s involved in Automation.

Goal

When you finish this unit, you will be able to answer the following questions, explore the concepts and explain it to others:

- Identification and understanding Stakeholders
- Name the importance of TA processes

Outcomes

When you finish this unit, you will be able to:

- to explain the importance of design approaches
- name at least 3 reasons why there is value for a automated testing scenario
- define a goal of test automation
- name pot. Stakeholders, which have influence or are influenced

Material

- How to Decide Which Types of Test Cases to Automate: https://www.perfecto.io/blog/types-of-test-cases-to-automate
- Persona Based Testing: https://medium.com/@ChamalAsela/persona-based-testing-de6e1396c23c
- Top design patterns for test automation frameworks (blog): https://www.devbridge.com/articles/top-design-pattern-test-automation-frameworks/
- How to choose which Test to automate: https://devqa.io/choose-tests-automate/

Additional Material

- Design Patterns in Automation Framework (blog): https://www.browserstack.com/guide/design-patterns-in-automation-framework
- How to communicate effectively as a Test / QA Manager: http://tryqa.com/how-to-communicate-effectively-as-a-test-qa-manager/
- How to Decide Which Types of Test Cases to Automate: https://www.browserstack.com/guide/10-test-automation-best-practices
- Manuelles oder automatisiertes Testen: https://innowise-group.com/de/blog/qa-dilemma-manual-test-vs-automated-test/
- Types of Automation Testing: https://huddle.eurostarsoftwaretesting.com/types-of-automation-testing/
- Why Do You Need To Perform A Stakeholder Analysis: https://reqtest.com/requirements-blog/why-you-need-to-perform-stakeholder-analysis/

task - Personas

In this task, you'll be creating Personas for at least two different user groups related to the areas where you believe Test Automation would be useful on http://booking.com . Personas are fictional characters that represent your potential users. They help you understand the users' needs, experiences, behaviors, and goals.
To create these Personas, you'll be using the following criteria:

- **Picture:** User icon
- **Personal Background:** (e.g., occupation, marital status)
- **Demographic Data:** (e.g., gender, age, place of residence)
- **Character Traits:** (e.g., calm or outgoing)
- **Goals:** (e.g., to live happily)
- **Challenges:** (e.g., finding happiness, travel)

- **Solutions:** (e.g., do more yoga)
- **Information Behavior:** (e.g., digital native or radio lover)

These template could be added with specific characteristics reagarding traveling:

1. **Travel Frequency:** How often does the persona travel? Frequent travelers might have different needs and expectations compared to occasional travelers.
2. **Travel Purpose:** Is the travel for business, leisure, or both? The purpose of travel can greatly influence the type of accommodations and services a user might look for.
3. **Booking Preferences:** Does the persona prefer to book well in advance or last minute? This can influence the availability and pricing of accommodations.
4. **Accommodation Preferences:** Does the persona prefer hotels, apartments, hostels, or other types of accommodations?
5. **Amenities Importance:** How important are certain amenities to the persona? For example, free WiFi, breakfast included, pet-friendly, etc.
6. **Budget:** What is the persona's typical travel budget? This can influence the type of accommodations they book and the services they use.
7. **Destination Preferences:** Does the persona prefer urban destinations, beach destinations, countryside, etc.?
8. **Travel Companions:** Does the persona usually travel alone, with a partner, with family, or in a group? This can influence the type of accommodations they book.
9. **Tech-savviness:** How comfortable is the persona with using technology to book travel? This can influence their expectations of the booking platform.

Persona Template

For example, you might create a Persona for a stakeholder group that represents end-users of http://booking.com . This could look something like this:

1. **Picture:** User icon

2. **Personal Background:** Single, works as a software engineer
3. **Demographic Data:** Male, 28 years old, lives in San Francisco
4. **Character Traits:** Tech-savvy, detail-oriented, prefers efficiency
5. **Interests:** Enjoys traveling, particularly to destinations known for their vibrant nightlife and beautiful beaches.
6. **Preferred Travel Destination:** Ibiza, Spain - known for its lively party scene and stunning beaches.
7. **Preferred Accommodation**: Budget-friendly hotels close to areas with a lot of bars and nightclubs.
8. **Goals**: To book travel accommodations quickly and easily
9. **Challenges**: Finding a reliable platform that provides accurate information about the proximity of accommodations to nightlife areas, ensuring the booking platform provides a secure and efficient booking process.
10. **Solutions:** Using a platform, which provides detailed information about the location and amenities of accommodations. Easy usability of filters.
11. **Information Behavior:** Digital native, prefers online platforms for booking travel accommodations

Defining the Goal of Your Test Automation Approach

As you delve deeper into Test Automation, it's important to define the goal of your automation approach. This involves understanding what you aim to achieve with automation testing. At example here on http://booking.com . For instance, your goal could be to ensure that the booking process works seamlessly for all users, or it could be to validate the functionality of the search feature. Your goal will guide your automation strategy and help you focus your efforts on the areas that matter most.
Please define a testing goal for a specific area or functionality and consider the following question:

- What are the critical functionalities of http://booking.com that directly impact the user experience of your Persona?

SAMPLE ANSWERS (muss den Lerndenen nicht gezeigt werden)

1. What is the goal of your Test Automation approach?

The goal of our Test Automation approach for the "Attractions" section of http://booking.com would be to ensure a seamless user experience when searching for and booking attractions. We would aim to ensure that the search functionality returns accurate results, the booking process for attractions is smooth, and the display of attraction information is accurate and up-to-date.

Discussion with Your Learning Coach

Now that you've created personas and identified user-specific needs for http://booking.com , it's time to discuss your findings with your Learning Coach. This discussion is an opportunity to gain insights, receive feedback, and refine your understanding of user needs and Test Automation.
During this discussion, present the personas you've created and the requirements you've identified. Explain why you chose these users and how you believe meeting their requirements will enhance their experience on http://booking.com .

- Reflect on Your Work

Whether you're discussing with a Learning Coach or reflecting on your own, consider the following questions:

1. Why did you choose these users in the last tasks? Name at least three reasons in comparison to the other possible users.
2. Reflect on your goal with your learning coach
3. Could you imagine more relevant stakeholders beside the users? Which roles are relevant?
4. What requirements could have other stakeholders regarding booking.com?

5. How would these information influence the priority of your testing strategy?
6.

Reflecting on these questions will help you understand the rationale behind your choices and identify potential areas for further exploration. It's also an opportunity to consider other user groups and stakeholders that might be relevant to http://booking.com .
Remember, the goal of this discussion and reflection is not to have perfect personas or requirements, but to learn and grow.

1.2. Quizzes

Multiple Choice Questions:

1. What is a Persona in the context of software testing?

    a. A. A real user who tests the software
    b. B. A fictional character/user profile created to represent a user type
    c. C. A software tool used for testing
    d. D. A type of testing methodology

2. What is the main advantage of Persona Based Testing?

    a. A. It allows for more flexibility
    b. B. It puts software testers in front of customer's mind and determines use cases/scenarios that customers will execute
    c. C. It is less time-consuming
    d. D. It requires less resources

3. What is the main reason for test automation failures

    a. A. Lack of skilled testers
    b. B. Inadequate tools
    c. C. Lack of a proper strategy

d. D. Software complexity

4. What is the main factor to consider when deciding which tests to automate?

   - A. The complexity of the test
   - B. The frequency of the test
   - C. The cost of the test
   - D. The importance of the test

5. What is the main benefit of having a test automation strategy?

   a. A. It ensures that the right tests are automated
   b. B. It makes the test automation process faster
   c. C. It reduces the cost of test automation
   d. D. It guarantees that all bugs will be found

Answers MC Questions Multiple Choice Questions:

- B. A fictional character/user profile created to represent a user type
- B. It puts software testers in front of customer's mind and determines use cases/scenarios that customers will execute
- C. Lack of a proper strategy
- B. The frequency of the test
- A. It ensures that the right tests are automated

Fill in the Blanks:

1. A poorly designed architecture is a major reason why _____ fail.
2. Design patterns provide a general reusable solution for the common problems that occur in _____.
3. The Single Responsibility Principle states that a class should have _____.
4. The Open Closed Principle states that you should be able to _____ a class behavior without modifying it.
5. The Liskov Substitution Principle states that derived classes must be _____ for its base classes.

Answers Fill in the blanks

1. test automation frameworks
2. software design
3. one, and only one reason to change
4. extend
5. substitutable

True or False Questions:

- Design patterns help reduce code complexity—as well as make code more extensible, and maintainable. (True/False)
- The Interface Segregation Principle states that you should make fine grained interfaces that are client-specific. (True/False)
- The Dependency Inversion Principle states that you should depend on abstractions, not on concretions. (True/False)
- A singleton pattern ensures a class has only one instance and provides a global point of access. (True/False)
- A strategy pattern defines a family of algorithms, encapsulates each one, and makes them interchangeable. (True/False)

Answers True or False Questions

1. True
2. True
3. False
4. True
5. True

Drag and Drop:

Arrange the following steps in the correct order for creating personas in Persona Based Testing:

- Get to know with your end users
- Add a few characteristics to the user types
- Think of typical users who will use the system
- Drill down the user types further

Answers Drag and Drop

1. Get to know with your end users

2. Think of typical users who will use the system
3. Add a few characteristics to the user types
4. Drill down the user types further

Matching Questions:

Quiz 1: Match the type of testing with its description

- Regression Testing
- Load Testing
- Exploratory Testing
- Data Driven Testing
- Persona Based Testing

A. This type of testing involves creating fictional characters/user profiles to represent a user type that might use a site or app.
B. This type of testing is used to re-run test cases that a program has previously executed to ensure that existing functionalities work fine.
C. This type of testing is performed to understand the behavior of the system under a specific load.
D. This type of testing is a form of testing where test cases aren't created in advance but testers check system on the fly.
E. This type of testing is a methodology that uses test data, variables, and conditions to create automated tests.

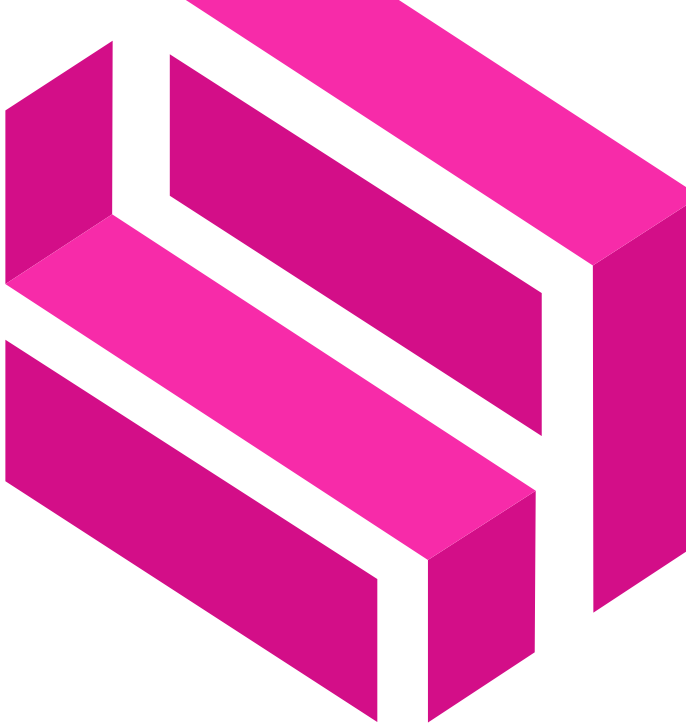
Quiz 2: Match the design pattern with its description

- Page Object Models (POM)
- Composite patterns
- Facade patterns
- Decorator patterns
- Factory method patterns
- Builder patterns
- Singleton patterns
- Strategy patterns

A. This pattern ensures a class has only one instance and provides a global point of access.
B. This pattern defines a family of algorithms, encapsulates each one, and makes them interchangeable.
C. This pattern composes objects into tree structures to represent part-whole hierarchies.
D. This pattern attaches additional responsibilities to an object dynamically.
E. This pattern provides a unified interface to a set of interfaces in a subsystem.
F. This pattern defines an interface for creating an object but allows subclasses to decide which class to instantiate.
G. This creational design pattern lets developers construct complex objects step by step.
H. This is the most popular structural design pattern and is commonly used in building test automation frameworks to automate UI test cases.

Answers Matching

- 1:
    - 1-B, 2-C, 3-D, 4-E, 5-A
- 2
    a. 1-H, 2-C, 3-E, 4-D, 5-F, 6-G, 7-A, 8-B



SOFTWARE TESTING ACADEMY

Exercises “How would I make it better” – TA Approach

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INDEX

1. Exercises – “How would I make it better”

1.1. Practical Tasks

Introduction: Navigating the World of Test Automation Tools

Welcome to the next exciting chapter in our journey through test automation! As we delve deeper into the realm of automated testing, one thing becomes abundantly clear: the tools we choose can make or break our testing efforts. But with a myriad of tools available in the market, how do we determine which one aligns best with our project's unique needs?

In this chapter, we will embark on a comprehensive exploration of the diverse landscape of test automation tools. From open-source solutions to commercial powerhouses, we'll dissect the features, benefits, and potential pitfalls of popular tools, equipping you with the knowledge to make informed decisions.

But it's not just about knowing the tools; it's about understanding how to align them with our project's goals, team's expertise, and the specific challenges we aim to address. Through a combination of in-depth learning resources and hands-on practical tasks, you'll gain insights into the art of choosing the right tool for the job.

By the end of this chapter, you'll be introduced in the world of test automation tools. So, let's dive in and discover the tools that will become the linchpins of your automation success!

Topics

- Tool Selection Criteria
- Test Automation Tools / Suites
- Test Automation Applications

Goal

When you finish this unit, you will be able to answer this question, and explain it to others:

What options or tools do we have?

Outcomes

When you finish this unit, you will be able to:

- have some basic knowledge about tooling
- know where to get necessary information about the tools
- differentiate which tools are used in what kind of purpose

Material

- How to Select the Right Automation Tool for Website Testing and which Criteria for choosing an automation testing tool (Blog): https://blog.testproject.io/2022/09/28/how-to-select-the-right-automation-tool-for-website-testing/
- Top 15 list of automation testing tools | Latest Update in 2023: https://katalon.com/resources-center/blog/automation-testing-tools
- Setting a Foundation for Successful Test Automation : Chapter 4 – Tooling for Test Automation (Video): https://testautomationu.applitools.com/setting-a-foundation-for-successful-test-automation/chapter4.html
- What Are Automation Testing Tools? 9 Types & Examples: https://theqalead.com/tools/what-are-automation-testing-tools/
- Automation Tools: a handy list of automation tools (Blog): https://www.ministryoftesting.com/articles/879cd066?s

Task Introduction: Selecting the Ideal Tool for Distinct Scenarios

Welcome to your first hands-on task in this chapter! As we've discussed, the landscape of test automation tools is vast and varied. But how do we align specific tools with particular testing scenarios? That's the challenge we'll tackle in this exercise.

Presented to you are three distinct testing scenarios, each with its unique requirements and objectives. Your mission, is to identify the most suitable tool for your Test Automation Goal. Remember, while many tools might seem like a good fit at first glance, the key is to pinpoint the one that aligns best with the specific needs of each scenario.

The scenarios you'll be working with are:

1. **GUI (Functional Testing)**: Testing the graphical user interface of an application to ensure it works as expected.
2. **Regression Testing**: Ensuring that new code changes haven't adversely affected existing functionalities.
3. **Unit Testing**: Testing individual units or components of a software to validate that each unit functions correctly.

After analyzing each scenario, you'll be prompted to select the tools that best fit the requirements. This task is not about diving deep into each tool's intricacies but rather about making informed choices based on your understanding of the tool's primary functions and the scenario's needs.

Ready to put your knowledge to the test? Let's begin!

Scenario 1: Cross-Browser Testing for Web Applications

Requirements:

- You have a web application that needs to be tested on multiple web browsers (Chrome, Firefox, Safari, and Microsoft Edge).
- You want to reduce the test creation effort by utilizing a record-and-playback feature.

Recommended Tool: Katalon Studio

Scenario 2: Large-Scale Regression Testing for Mobile Apps

Requirements:

- You are developing a mobile app for both Android and iOS platforms.
- You need a tool that supports parallel execution on multiple devices to handle large-scale regression testing efficiently.

Recommended Tool: Appium

Scenario 3: Test Automation for RESTful APIs

Requirements:

- You have a RESTful API that requires comprehensive testing.
- You prefer a tool that offers easy API testing capabilities and supports scripting for complex scenarios.

Recommended Tool: Postman

Scenario 4: End-to-End Testing for a Complex Enterprise Application

Requirements:

- You are working on a complex enterprise application with both web and mobile components.
- You need a tool that supports end-to-end testing and integrates well with your CI/CD pipeline.

Recommended Tool: Selenium with a combination of Appium (for mobile testing) and Jenkins (for CI/CD integration)

Scenario 5: Performance Testing for a High-Traffic E-commerce Website

Requirements:

- You have a high-traffic e-commerce website that needs performance testing.
- You need a tool that can simulate a large number of virtual users and provide detailed performance reports.

Recommended Tool: Apache JMeter

Task: Beyond the Tool - Understanding Its Ecosystem and Fit

Having identified the right tools for specific testing scenarios, it's now time to understand them in a broader context. A tool's utility isn't just about its primary function; it's also about how it integrates with other tools, its applicability to real-world use cases, its cost, and how it aligns with your personal or organizational approach to testing.

In this task, you'll be exploring the following aspects of your chosen tools:

1. **Connection to Other Tools**: How seamlessly does the tool integrate with other software or platforms you might be using? This could include connections to CI/CD pipelines, bug tracking systems, or version control repositories.
2. **Use Cases**: Identify real-world scenarios where the tool shines. Does it cater to large-scale enterprise needs, or is it more suited for smaller projects? Understanding this can help in gauging its practicality for your projects.
3. **Pricing**: While some tools might be open-source or offer free tiers, others can come with significant costs. Investigate the pricing structures, if available, and consider factors like scalability, number of users, or additional features.
4. **Additional Features**: Are there any other standout features or capabilities of the tool that weren't covered in the previous task? This could include reporting capabilities, ease of setup, community support, and more.
5. **Alignment with Your Approach**: Reflect on your own testing needs, methodologies, and preferences. Given what you've learned about the tool, does it seem like a good fit for your approach?

By the end of this task, you'll have a broader understanding of your chosen tools, allowing you to make decisions that are not just technically sound but also strategically aligned with your broader testing goals.

Let's get started and uncover the broader narratives behind each tool!

Task: Discussing Test Automation Tools with Your Learning Coach

Engage in a constructive discussion with your learning coach to validate your choices and findings of these tools.

Adapt to Your Scenario: Consider which of the tools you have learned about, might be a good choice for your booking.com scenario. Which tools align best with the specific requirements and challenges of your scenario? Discuss your thoughts with your Learning Coach.

This exercise will help bridge the gap between theoretical knowledge and practical application, ensuring a better understanding of test automation.

1.2 Quizzes "How would I make it better"

Persona Based Testing

Multiple Choice Questions:

1. Why is Persona Based Testing used?
    - a) To find more defects.
    - b) To think from the perspective of the end users.
    - c) To replace testers.
    - d) To reduce the number of test cases.

    Answer: b) To think from the perspective of the end users.
2. Which superhero persona is used as an example for an HR user in the article?
    - a) Flash
    - b) Hulk
    - c) Black Widow
    - d) Nick Fury

    Answer: c) Black Widow.
3. What is a major reason why test automation frameworks fail?
    - a) Lack of proper documentation.
    - b) Poorly designed architecture.
    - c) Inadequate testing tools.
    - d) Insufficient test data.

    Answer: b) Poorly designed architecture.
4. Which design pattern provides a general reusable solution for common problems in software design?
    - a) SOLID principles
    - b) Design patterns
    - c) Automation techniques
    - d) Testing methodologies

    Answer: b) Design patterns.
5. Which SOLID principle states that a class should have only one reason to change?
    - a) Single Responsibility Principle
    - b) Open Closed Principle
    - c) Liskov Substitution Principle
    - d) Dependency Inversion Principle

    Answer: a) Single Responsibility Principle.

Fill in the Blanks:

1. Persona Based Testing helps testers to be in the _____ shoe.
    - A. developer's
    - B. customer's
    - C. manager's **Answer:** B. customer's
2. A persona is a _____ character representing a type of user.
    - A. historical
    - B. fictional
    - C. real-life **Answer:** B. fictional
3. The article uses _____ as a persona for an old employee.
    - A. Thunder
    - B. Flash
    - C. Lightning **Answer:** B. Flash

True/False:

1. All personas are based on real individuals.
   Answer: False
2. Nick Fury is used as a persona for a manager.
   Answer: True
3. Persona Based Testing is only about creating fictional characters.
   Answer: False

Matching Statements:
Match the persona with its characteristics:

1. Nick Fury - a) Impatient users, uses quickest workflow.
2. Black Widow - b) Focuses on mostly used features, patient with slow responses.
3. Flash - c) Uses the application slowly, uses older browser versions.
   Answers: 1-a, 2-b, 3-c
4. Match the design pattern with its description:
    1. Page Object Models (POM) - a) Abstracts any page information away from the actual tests.
    2. Composite patterns - b) Composes objects into tree structures to represent part-whole hierarchies.
    3. Facade patterns - c) Provides a unified interface to a set of interfaces in a subsystem.
       Answers: 1-a, 2-b, 3-c

Drag and Drop:
Arrange the following SOLID principles based on their order in the article:

- The Single Responsibility Principle
- The Open Closed Principle
- The Liskov Substitution Principle
- The Interface Segregation Principle

- The Dependency Inversion Principle
  Answer: The Single Responsibility Principle, The Open Closed Principle, The Liskov Substitution Principle, The Interface Segregation Principle, The Dependency Inversion Principle.

Additional Questions:

Fill in the Blanks:

1. Tests that are more _____ are better suited for automation.
   Answer: repetitive
2. Tests that require a user to respond about the app's usability are called _____ tests.
   Answer: user experience
3. Tests that produce unpredictable results are termed as _____ tests.
   Answer: Intermittent
4. A test case should be automated if it is subject to _____ error.
   Answer: human
5. Unit testing is the _____ method of testing.
   Answer: fastest

True/False:

1. All tests are suitable candidates for automation.
   Answer: False
2. Tests that take a long time to perform and may need to be run overnight should be automated.
   Answer: True
3. Tests that require ad hoc/random testing based on domain knowledge are ideal for automation.
   Answer: False
4. All test cases should be automated.
   Answer: False
5. Automation is only about saving time.
   Answer: False
6. Unit testing should be the top priority for automation.
   Answer: True

Multiple Choice Questions:

1. What is the primary role of test automation?
   - a) To replace testers.

- b) To find more defects.
- c) To enhance testing.
- d) To reduce the number of test cases.

Answer: c) To enhance testing.

2. What should be considered when deciding which test cases to automate?
   - a) The popularity of the test case.
   - b) The complexity of the test case.
   - c) Maintenance costs of the test case.
   - d) The age of the test case.

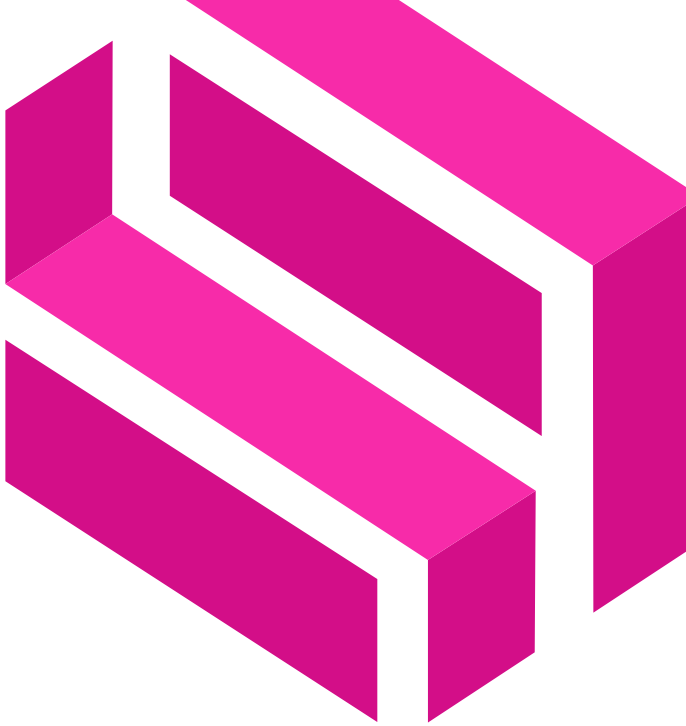
   Answer: c) Maintenance costs of the test case.

Matching Statements:

Match the type of testing with its description:

1. Unit Testing - a) Testing interfaces or modules.
2. Integration Testing - b) Fastest method of testing.
3. Functional Testing - c) Uses various tools and frameworks matching the development code base.

   Answers: 1-b, 2-a, 3-c



SOFTWARE TESTING ACADEMY

Exercises “Let´s make it better” – TA Approach

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1. Exercises – “Let´s make it better”.

1.1. Practical Tasks

Chapter Introduction: Risk Analysis in Testing Domains

Welcome to this important chapter in our exploration of testing. In this part, we will speak about Risk Management and learn how to analyze the risk in Broad Testing Domains. In the vast expanse of software development, certain areas inherently carry more risk than others. Recognizing and understanding these high-risk zones is paramount to ensuring the robustness and reliability of our software products.

In this chapter, we will delve into the overarching concept of risk analysis, focusing on identifying and understanding high-risk areas within software projects rather than individual test cases.

Here's a glimpse of what we'll cover:

1. **The Essence of Risk**: Before diving into specifics, we'll establish a foundational understanding of what risk means in the broader context of software development and testing.
2. **Domains of Risk**: We'll explore various areas within software projects that are traditionally seen as high-risk zones. This could range from data security to user experience, from backend processing to frontend interactions, and more.
3. **Risk Assessment Techniques**: Learn methodologies to evaluate and quantify the risks associated with different domains, helping you understand where to focus your testing efforts.
4. **Strategizing Based on Risk**: With a clear understanding of high-risk domains, we'll discuss strategies to allocate resources, time, and effort to ensure these areas are thoroughly tested.
5. **Hands-on Exploration**: To cement your understanding, you'll be tasked with identifying high-risk domains in given scenarios and, crucially, in your own projects or experiences. This practical exercise will help you internalize the concepts and apply them in real-world contexts.

By the end of this chapter, you'll be equipped with the knowledge and skills to pinpoint high-risk areas in software projects, ensuring that your testing efforts are channeled effectively to safeguard against potential vulnerabilities.

Let's embark on this journey of understanding risk at a macro level and fortifying our software projects against unforeseen challenges!

Topics

- Risks of test automation
- Requirements of Test Automation
- Creating Automation Scenarios
- Who is involved in test automation?

Goal:

When you finish this unit, you will be able to answer the following questions, explore the concepts and explain it to others:

- How to identify relevant requirements?
- How to define risks in test automation?
- How to select a good scenario?

Outcomes

When you finish this unit, you will be able to:

- find possible risks regarding the Use Case or the Requirements
- formulate a TA scenario. At Example: I know what to do to formulate a good TA scenario.

Material

- The Risks Associated With Automation Testing: https://www.sciencetimes.com/articles/41636/20221230/the-risks-associated-with-automation-testing.htm
- What is Risk Analysis in Software Testing and how to perform it: https://www.edureka.co/blog/risk-analysis-in-software-testing/
- Make a Score Card to Prioritize Which Tests to Automate: https://www.perfecto.io/blog/types-of-test-cases-to-automate
- Automation Testing Example: Use Case Scenario:(Click: "Automation Testing Example: Use Case Scenario"): https://www.browserstack.com/guide/automation-testing-tutorial

Task Introduction: Analyzing Risk in Your Formulated Scenario

Having explored Booking.com: The largest selection of hotels, homes, and vacation rentals and crafted your unique scenario, it's time to delve into the heart of risk analysis. Every scenario, no matter how well-thought-out, carries inherent risks. Your challenge now is to identify and articulate these risks, ensuring that when it comes to testing, you're prepared to address the most critical areas first.

Objective:
Your goal is to dissect the scenario you've developed for Booking.com: The largest selection of hotels, homes, and vacation rentals , pinpointing areas that present the highest risk. These could be areas with significant data flow, user interactions, financial transactions, or any other elements that, if malfunctioning, could have a substantial impact.

Instructions:

Feel free to use the provided whiteboard.

1. **Revisit Your Scenario**: Begin by revisiting the scenario you've formulated. Familiarize yourself with its intricacies, ensuring you have a clear understanding of its flow and functionalities.

2. **Highlight High-Risk Areas**: On your visual representation, mark or highlight sections you believe carry the highest risk. Think about where things could go wrong and the potential implications of such issues.
3. **Capture Visual Evidence**: Take screenshots or make notes on the whiteboard that detail the high-risk areas. This visual documentation will serve as a reference point for your analysis.
4. **Articulate the Risks**: For each high-risk area you've pinpointed, provide a detailed explanation. Why do you see it as a risk? What are the potential consequences if this part of the scenario fails or malfunctions?
5. **Link Back to Your Scenario**: Ensure that each risk you identify is clearly linked back to a specific part of your scenario. This will help in contextualizing the risk and understanding its origin.

By the end of this task, you'll have transformed your scenario into a detailed risk map, highlighting areas that demand special attention during testing. This exercise is crucial in ensuring that when it's time to test, your efforts are laser-focused on areas that matter most.

Are you ready to scrutinize your scenario and uncover its potential vulnerabilities? Let's get started!

Task Introduction: Crafting a Comprehensive Test for a High-Risk Area

Building on your previous work, it's time to transition from identifying risks to actively addressing them. In this task, you'll be focusing on one of the high-risk areas you've identified. With this in mind you are going to create your first detialed step-by-step test

Objective:
Your mission is to select one high-risk area from your scenario and create a comprehensive, step-by-step test guide for it. This guide should be so detailed that anyone, even without prior knowledge of the scenario, could execute the test seamlessly.

Instructions:

1. **Select a High-Risk Area**: Revisit the high-risk areas you've identified in the previous task. Choose one that you believe is particularly critical or intriguing.
2. **Define the Test's Objective**: Before diving into the steps, clearly state what you aim to achieve with this test. What specific aspect of the high-risk area are you testing? What potential issues are you looking to uncover?
3. **Detail Each Step**: Ensure that each step in your test guide is clear, concise, and actionable. Include any prerequisites, expected outcomes, and potential variations.

By the end of this task, you'll have crafted a meticulous test guide that not only addresses a high-risk area but also serves as a testament to your analytical and strategic testing skills. This exercise will further solidify your understanding of the importance of detailed testing, especially in areas with heightened vulnerabilities.

Ready to craft a test that leaves no stone unturned? Let's dive in and create a guide that stands as a beacon of thoroughness and precision!

Task Introduction: Sharing Your Test Guide with Fresh Eyes

You've identified high-risk areas on Booking.com: The largest selection of hotels, homes, and vacation rentals and created a detailed test guide. Now, it's time to see how clear and user-friendly your guide is by sharing it with someone who's new to testing. This task will help you understand if your guide is easy to follow and if you can explain your testing process effectively to someone unfamiliar with the topic.

Objective:
Your mission is to introduce your identified high-risk area on Booking.com: The largest selection of hotels, homes, and vacation rentals to someone unfamiliar with testing and guide them through the associated test steps. This exercise will gauge both the clarity of your guide and your communication prowess.

Instructions:

1. **Choose Your Reviewer**: Find a person (or several individuals) with little to no background in testing. This could be a colleague, a friend, or even a family member. If you're struggling to find a suitable candidate, your learning coach is available, though they come with a testing background.
2. **Navigate to the High-Risk Area on** Booking.com: The largest selection of hotels, homes, and vacation rentals : Together with your reviewer, visit Booking.com: The largest selection of hotels, homes, and vacation rentals and navigate to the specific high-risk area you've identified. Here, visually showcase and explain the steps in the booking process, emphasizing why you've deemed this area as high-risk.
3. **Guide Them Through the Test Steps**: Once they have a grasp of the high-risk area, present your step-by-step test guide. Ask them to manually follow the guide on Booking.com: The largest selection of hotels, homes, and vacation rentals , observing their interactions and noting any areas of confusion or uncertainty.
4. **Gather Feedback**: After they've walked through the guide, seek their feedback. Were there steps that seemed ambiguous? Did they grasp the reasoning behind each testing action? Were they able to navigate the test without significant issues?
5. **Iterate Based on Feedback**: Use the insights gathered to refine your test guide. The objective is to ensure that even someone unfamiliar with testing can navigate it effortlessly.

This task is a blend of validation and communication. It's about ensuring your test guide's quality and refining your ability to articulate testing decisions to a broader audience. This skill is invaluable, ensuring that the significance of your testing endeavors is recognized and valued universally.

1.2 Quizzes "Let´s make it better “.

Multiple Choice Questions:

1. What does test coverage refer to in the context of automation testing?
   - a) The number of tests automated.
   - b) The degree to which the source code has been tested.
   - c) The efficiency of the automation tool.
   - d) The speed of test execution.

   Answer: b) The degree to which the source code has been tested.
2. Why might automation testing miss certain issues?
   - a) Because of too much human involvement.
   - b) Due to the rigidity of the test environment.
   - c) Because some issues can only be spotted by humans.
   - d) Because of over-reliance on clear requirements.

   Answer: c) Because some issues can only be spotted by humans.
3. What does risk in software testing refer to?
   - a) The complexity of the software.
   - b) The probability of an unwanted incident.
   - c) The number of defects in the software.
   - d) The time taken for testing.

   Answer: b) The probability of an unwanted incident.
4. Which of the following is NOT a perspective of Risk Assessment?
   - a) Effect
   - b) Cause
   - c) Likelihood
   - d) Duration

   Answer: d) Duration.
5. What is the primary purpose of risk analysis in software testing?
   - a) To find defects in the software.
   - b) To prioritize tests based on complexity.
   - c) To identify potential problem areas early in a project.
   - d) To reduce the testing time.

   Answer: c) To identify potential problem areas early in a project.
6. What is the primary purpose of the scorecard mentioned in the article?
   - a) To track test execution times.
   - b) To prioritize which tests to automate based on value.
   - c) To document test results.
   - d) To assign tasks to team members.

   Answer: b) To prioritize which tests to automate based on value.
7. What is one of the considerations before automating a test case?
   - a) The popularity of the test case.
   - b) The complexity of the software.

- c) Test maintenance costs.
- d) The number of users for the application.
  Answer: c) Test maintenance costs.

Fill in the Blanks:

1. Automation testing is more effective when used in combination with _____ testing.
   Answer: manual
2. Without clear and consistent requirements, automation testing can lead to _____ results.
   Answer: unreliable
3. Automation tests are designed to test specific aspects, so if something _____ happens, it might go unnoticed.
   Answer: unexpected
4. Risk analysis helps in identifying potential _____ areas early in a project.
   Answer: problem
5. After risk identification, the next step is _____ assessment.
   Answer: risk
6. One of the perspectives of Risk Assessment is assessing risk by its _____.
   Answer: effect
7. A test case should be automated if it has significant _____ between steps.
   Answer: downtime
8. Unit testing is the _____ method of testing and should be the highest priority for automation.
   Answer: fastest

Matching Statements:
Match the risk with its description:

1. Lack of Test Coverage - a) Automation testing might not cover all possible scenarios.
2. Unclear Requirements - b) Without accurate requirements, test results may not reflect the system's actual state.
3. Lack of Human Involvement - c) Automation might miss issues that only a human can spot.
   Answers: 1-a, 2-b, 3-c (rearange)
4. Business Risks - a) Risks that may come from the company or customer, not the project.
5. Testing Risks - b) Risks associated with the platform and testing tools used.
6. Software Risks - c) Risks associated with the software development process.
   Answers: 1-a, 2-b, 3-c (rearange)
7. Match the type of test with its description:

1. Unit Testing - a) Fastest method of testing, focuses on individual units of software.
2. Integration Testing - b) Tests interfaces or modules to ensure everything works as expected.
3. Functional Testing - c) Uses various tools and frameworks to match the development code base.
   Answers: 1-a, 2-b, 3-c (Rearange)

Type of Testing	Description
Regression Testing	**Answer:** D. Tests to ensure that new features do not tamper with older functions.
Smoke Testing	**Answer:** B. Tests run to verify the quality of major functionalities.
Data-driven Testing	**Answer:** C. Tests to validate functionalities that must be tested repeatedly with numerous data sets.
Performance Testing	**Answer:** A. Tests that monitor software performance under different circumstances.

True/False:

1. Risk analysis is only about identifying risks.
   Answer: False
2. Risk assessment is a simple process and doesn't require careful consideration.
   Answer: False
3. One of the risks in software testing is the use of new automation tools.
   Answer: True
4. Automation testing is only about saving time.
   Answer: False
5. All test cases should be automated without any considerations.
   Answer: False
6. Using personas in automation can help focus on the most valuable tests.
   Answer: True

SOFTWARE TESTING ACADEMY

Exercises “Did I make it better” – TA Approach

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1. Exercises – “Did I make it better”

1.1. Practical Tasks

Topics

- Measuring ROI
- Value Reporting
- How to Create, Execute and Maintain automation Tests?

Goal

When you finish this unit, you will be able **to know the definition of following statement, explore the concepts and explain it** to others:

- value measurements
- time saved
- "Feeling" impact

Outcomes

When you finish this unit, you will be able to:

- know how to write a high-quality report.
- know which data I can use to show the value of an suitable Test Automation Approach

Material

- Infos über ROI, Reporting, Test management: 3 Ways To Measure ROI For Test Automation: https://www.kiwiqa.com/3-ways-to-measure-roi-for-test-automation/
- How to Calculate ROI on Test Automation?: https://www.testgrid.io/blog/roi-on-test-automation/
- Understanding Test Automation Report in Depth: https://www.browserstack.com/guide/understanding-test-automation-report
- Chapter 4: Test Automation Reporting and Metrics: https://www.youtube.com/watch?v=cKTuumXuvnE

Additional Material

- 19 Websites to Practice Automation Testing (UI, API, Mobile): https://ultimateqa.com/dummy-automation-websites/
- 30 test automation leaders you should follow on Twitter: https://techbeacon.com/app-dev-testing/30-test-automation-leaders-you-should-follow-twitter
- The Testing Show: Women In Testing: https://qualitestgroup.com/insights/podcasts/the-testing-show-women-in-testing-part-1/
- Understanding the Return-on-Investment (ROI) of Test Automation: https://blog.kms-solutions.asia/how-to-calculate-return-on-investment-roi-of-automation-testing
- Calculating Test Automation ROI: A Guide: https://www.browserstack.com/guide/calculate-test-automation-roi

Introduction to Bug Reporting:

Bug reporting is a critical skill for anyone involved in the software testing process. A well-documented bug report ensures that developers understand the issue and can reproduce it, leading to more efficient fixes. In this section, we'll guide you through the process of writing an effective bug report.

Objectives:

1. Understand the importance and purpose of a bug report.
2. Learn the components of a comprehensive bug report.
3. Practice writing a bug report using provided bug scenarios.

Guide to Writing a Bug Report:

A good bug report typically contains the following components:

1. **Title**: A concise description that summarizes the bug.
2. **Description**: A detailed account of the issue, providing context.
3. **Steps to Reproduce**: A step-by-step guide that allows anyone to recreate the bug.
4. **Expected Result**: Describe what should have happened.
5. **Actual Result**: Describe what actually happened.
6. **Severity**: Rate the impact of the bug (e.g., Low, Medium, High, Critical).
7. **Attachments**: Screenshots, logs, or any other relevant files.

Task Introduction: Bug Reporting

Objective:
Your challenge is to conceptualize one potential bug that could arise from your test or other high-risk areas or find a real bug at a website of your choice.

Instructions:

Option A)

1. Brainstorm Potential Bugs: Reflect on your "step by step" test and other high-risk areas you've identified. Think about where things might go wrong. Is there a data entry point that could malfunction? Could there be a backend process that might not execute as expected?

2. Document Each Bug: For each bug you envision, provide a brief description. Ensure it's clear enough that someone unfamiliar with your test or the system can understand it.

Option B)

1. Choose a website: Pick any website you're familiar with or are curious about. It could be an e-commerce site, a blog, a news portal, or even a personal portfolio. Navigate through the website, trying out different functionalities.
2. Document Your Findings: Whenever you spot a potential bug, make a note of it. Document the steps to reproduce the issue, what you expected to happen, and what happened. Screenshots can be invaluable here. Please use the given template.

Ready to dive deep into the world of bugs and their consequences? Let's get started.

Task Introduction: Reflecting and Reporting on Your Learning Journey

As we approach to the end of your Test Automation (TA) learning experience, we invite you to take a moment to reflect. Instead of the traditional reporting you might expect, we're seeking your insights, feedback, and reflections on the whole learning journey. Your perspective is invaluable to us, helping shape and refine the course for future learners.

Objective:
Your task is to provide feedback on your overall experience with the TA learning process. Think about the highs, the lows, the moments of clarity, and the challenges. Your honest feedback will not only help us enhance the course but also serve as a testament to your commitment and engagement throughout this journey.

Instructions:

1. **Reflect on Your Experience**: Before diving into specific questions, take a moment to think about your journey from start to finish. What stood out? What could have been better?

2. **Answer Guiding Questions**: To help structure your feedback, consider the following questions:
    - **Content Quality**: How would you rate the quality and relevance of the content provided?
    - **Pacing and Structure**: Did you find the course progression logical and at the right pace?
    - **Hands-on Tasks**: Were the practical tasks and exercises helpful in reinforcing your understanding?
    - **Support and Resources**: How did you find the support provided, be it through learning coaches, resources, or tools?
    - **Overall Satisfaction**: On a scale of 1 to 10, how satisfied are you with the TA learning journey, and why?
3. **Provide Additional Insights**: Beyond the guiding questions, feel free to share any other thoughts, suggestions, or areas of improvement. Your unique perspective might highlight something we haven't considered.
4. **Claim Your Certificate**: Upon providing your feedback, you'll be awarded a certificate, recognizing your dedication and completion of all chapters in the TA course. This certificate is a testament to your hard work and the knowledge you've gained.

Your feedback is more than just answers to questions; it's a beacon guiding us towards creating a better, more impactful learning experience for all. We deeply appreciate your time, effort, and commitment to this journey, and we're eager to hear your insights.

Ready to reflect, report, and receive your well-earned certificate? Let's begin!

1.2 Quizzes "Did I make it better"

Matching Quizz:

Multiple Choice Questions:

1. What is the formula provided in one article for calculating ROI in test automation?
   - a) ROI = Cost / Savings
   - b) ROI = Investment / Savings
   - c) ROI = Savings / Investment
   - d) ROI = Quality / Speed

   Answer: c) ROI = Savings / Investment.
2. Which of the following is NOT a parameter considered when measuring ROI in test automation ?
   - a) Cost
   - b) Quality
   - c) Speed
   - d) Duration

   Answer: d) Duration.
3. What is one of the intangible benefits of automation testing mentioned in one article?
   - a) Direct monetary returns
   - b) Savings of critical man hours
   - c) Immediate positive ROI
   - d) Reduction in test infrastructure costs

   Answer: b) Savings of critical man hours.
4. What is the basic formula for calculating ROI on test automation?
   - a) ROI = Costs / Benefits
   - b) ROI = Benefits – Costs / Costs x 100
   - c) ROI = Investment / Savings
   - d) ROI = Savings / Investment

   Answer: b) ROI = Benefits – Costs / Costs x 100.
5. Which ROI calculation method focuses mainly on time investment gains?
   - a) Basic calculation method
   - b) Efficiency ROI calculation method
   - c) Risk Reduction Calculation method
   - d) Monetary gains method

   Answer: b) Efficiency ROI calculation method.
6. In the risk reduction calculation method, what is the primary assumption?
   - a) Automation testing is always better than manual testing.
   - b) Manual testers are more prone to making mistakes.

- c) Automation testing requires no maintenance.
- d) ROI is always positive for automation testing.

Answer: b) Manual testers are more prone to making mistakes.

7. Which of the following is NOT a key feature of a good Test Automation Report as mentioned in the article?
   - a) Accessibility
   - b) Readability
   - c) Trend Information
   - d) Color Coding

   Answer: d) Color Coding.
8. What does the Test Automation Report primarily showcase?
   - a) The tools used for testing.
   - b) The number of developers in the team.
   - c) The overall results of test execution.
   - d) The programming languages used.

   Answer: c) The overall results of test execution.
9. Which reporting tool is known for its integration with screenshot features at the failed step?
   - a) TestNG
   - b) JUnit
   - c) Allure
   - d) Extent Reports

   Answer: c) Allure.

Fill in the Blanks:

1. Automation testing can lead to faster product _____.
   Answer: delivery
2. ROI in test automation is calculated as the amount of man hours saved after transitioning from manual to _____ testing.
   Answer: automation
3. Test _____ is a significant indicator of the quality of test automation scripts.
   Answer: Coverage
4. Automation testing can help businesses reduce their testing _____.
   Answer: costs
5. One of the benefits of automation testing is greater test _____.
   Answer: coverage
6. The risk reduction calculation method assumes that manual testers are more prone to making _____.
   Answer: mistakes

7. Test Automation Reporting plays a vital role in effectively analyzing _____ results.
   Answer: test
8. A Test Automation Report can show the trend of the results for the last _____ runs.
   Answer: n
9. Extent Reports can be easily integrated with JUnit, NUnit, and _____ frameworks.
   Answer: TestNG

True/False:

1. All test scenarios can be automated.
   Answer: False
2. Test flakiness and false positives can delay the goal of achieving positive ROI in automation testing.
   Answer: True
3. Automated tests are always less accurate than manual tests.
   Answer: False
4. TestNG is one of the most widely used unit testing frameworks inspired by JUnit and NUnit.
   Answer: True
5. Allure can only work best when integrated with Jenkins or some other CI/CD solution.
   Answer: True
6. JUnit provides reports that can be accessed globally.
   Answer: False

Matching Statements:

Match the method with its description:

1. Basic Calculation - a) Determines ROI by subtracting estimated costs from benefits and dividing by costs.
2. Efficiency ROI - b) Focuses on time investment gains.
3. Risk Reduction - c) Calculates ROI based on the reduction in monetary risk minus the cost of risk control.
   Answers: 1-a, 2-b, 3-c

4. TestNG - a) Comes with its own library with a default reporting feature.
5. Allure - b) An open-source framework that lets you customize the report by adding attachments.
6. JUnit - c) One of the most used reporting tools for Java and Selenium.

7. Extent Reports - d) Provides advanced filters and screenshot features that help in analyzing the tests effectively.

Answers:

1. TestNG - a) Comes with its own library with a default reporting feature.
2. Allure - b) An open-source framework that lets you customize the report by adding attachments.
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