Embracing AUTOBOTS & CHATBOTS in the Real Business World

Presented by. BI&A Practice

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Introduction

Today's Users expects high quality applications and software in short time frame and using digital technologies. Organizations are under critical pressure to meet their business commitments, while delivering innovative solutions and services. They need to be nimble, quickly respond to competitive threats and create sustainable market advantage. Does the traditional way of testing help Quality Assurance team achieve this objective? A new approach to testing, allows the Quality Assurance team to induct and explore the functionality by simultaneously learning, designing and executing. This new method of testing is called as the "Exploratory Testing" and is considered a value addition to other kinds of testing.

Exploratory Testing- 'Breaking away from the Traditional Testing'

Exploratory Testing is a thoughtful testing approach. It goes beyond the traditional testing concepts. The method helps in detecting uncovered/hidden defects. It's an out-of-the-box testing approach, where we don't go with the usual set of test cases. The tester's intuition, creative thinking, past experience, knowledge of the product is used in testing the product beyond its limits.

Unique Characteristics of Exploratory Testing:

- Simultaneous learning the application in and out; Designing test using heuristic approach; Executing the test cases and Running the test cases
- Performed by "experienced and passionate testers" with divergent thinking capability
- Requires interpretive, logical thinking and knowledge in adjudging the paths that would lead to covering most functionality in a short period of time

Exploratory Testing Myth – It does not require detailed preparation. You just start using the application and randomly look for any issues

Objectives of Exploratory Testing

Exploratory Testing is about gaining an understanding of how the application works, its interfaces, the functionality it implements. All this is done from an end user perspective, without a script and tests for a predetermined outcome. This approach ensures that the application works its best.
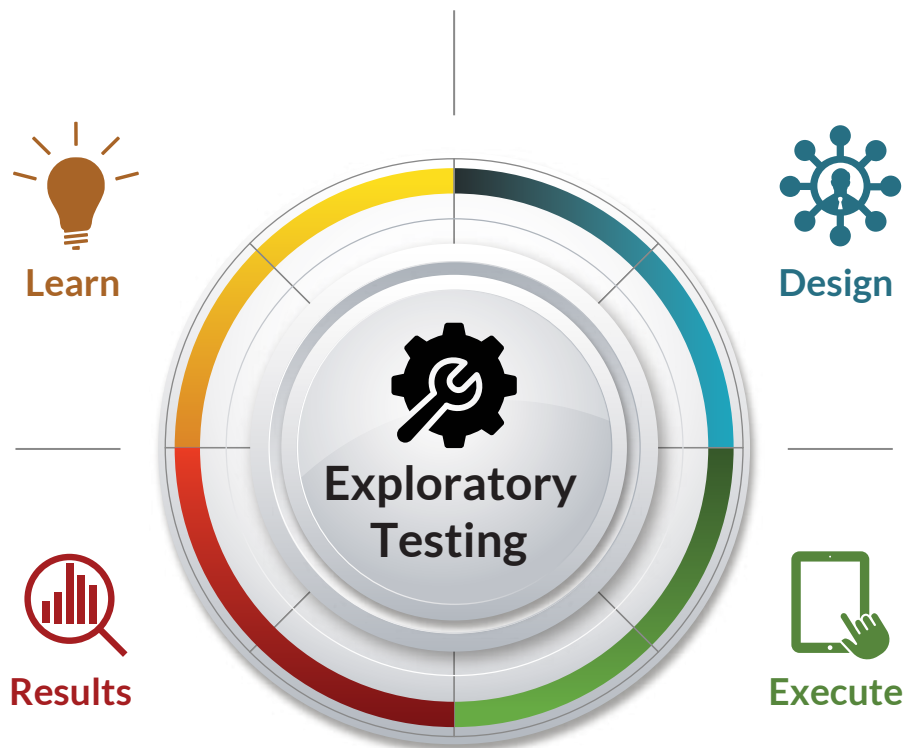
Adapting Test Design Techniques

An Exploratory Tester needs to adorn the hat of a test planner, understand test procedures and methods. He/She should be versatile in calling
different methods and functions, in real time and during the exploration.

Exploratory Testing is usually planned with Agile development process or as a final check before the software is released.

It's ideally suited for the following instances:
- Releasing first minimum viable product in beta or a major new feature release
- There is not enough test documentation available
- Under critical time pressure to script and run tests
- Need for diversification of formal test plan and design techniques
- Lack of time to document all test scenarios, variations and test procedures
- There are risks that needs to be covered throughout the testing lifecycle

More of Experimentation

Exploratory testers have an eye for observation.
As an exploratory tester, you need to quickly spin out ideas, try and experiment them. Look out for unusual or unexpected behaviors and view assumptions for correctness cautiously. Watch out for hidden software aspects or uncover patterns that drive the change to test in real time. Another distinguishing aspect of being an exploratory tester, is that you view the application from a 'user point of view', rather than the 'developer's point of view'.

It's more of learner tester driven style rather than a test case driven style. Exploratory Tester experiments with the system and identifies the vulnerabilities. It discovers the patterns in which it works fine and where it fails.

Exploratory testing's experimental analysis goes way beyond functional specification, thereby providing comprehensive coverage. Some of the key analyses are illustrated below:

- Identify the scope and vision of the product
- Identify the non-functional areas and its coverage
- Identify the intended end users who will be using the product.
- Identify the potential uncertainty functions.
- Test each functions and report defects.
- Relationship of a defect linked to other areas of the application is explored and researched

Exploratory Testers Are Creative and Critical Thinkers

It is important for exploratory testers to have good analytical skills and thinking power. It requires a unique genre of qualities like meticulously question ideas, bring up assumptions, approaches, all while solving problems in a consistent and systematic manner. They need to explain their logic of looking into defects and provide clear status of thinking. Exploratory Testers need to be 'Critical Thinkers'.

Exploratory Testers need to have these unique traits:

- Knowledge of different test design technique, usage of different tools
- Good Observation skills, uncovering any hidden defect
- Critical Thinkers who work with guidelines, checklists, rules of thumb

Exploratory testing helps in identifying defects early in testing lifecycle, when an application interacts with different networks, other component of same system, with other software via APIs, with file systems, memory system, with multiple operating system and physical devices.Critical thinking is required to analyze and identify the defects in areas that would help the product to be more robust and reliable upon delivery

Innovative Solutions and Value Adds

Exploratory Testing has a set of unique value-ads like:

Record, Playback & Review: Exploratory testers often use tool like screen capture, video tools to record their exploratory findings and results for later playback and review. Microsoft Team Foundation Server supports these features.

Findings Report and Charter Details: Report an exploratory finding, by sharing the test results to the customer in document. This document might contain the features that you have tested including Charter details, short notes on how you performed testing, identified defects and details

Re-testing made simple: We can save time on future regressions, by saving all actions as script of steps in test cases. These steps can be followed by someone, instead of reproducing them.

Mechanics to structure your Exploration Testing

Exploratory Testing is most suited for modern web or mobile application development, where there will be a need for multi-platform support, security and better user experience etc. It perfectly fits for projects developed using Agile methodologies, because of constantly changing business requirements. Indeed, it supports other testing methodologies too. Exploratory Testing is more of an unplanned activity. Identify the items to be included based on test scope and test charters.

To achieve maximum result, exploratory testing applies three techniques:

- Charters
- Timeboxing
- Mind Maps

Charters that guide scope of Testing

While carrying our Exploratory Testing, there is a high chance to get lost and move out of focus from what is important. It's important that you focus on one area at a time, write it down on a charter. It is good to know the below points about Test Charter before planning your Exploratory testing:

- Helps to determine the goal or agenda, resource and workflow of a test session
- Guides the QA team in their exploration
- Test charter contains the detail description including:
  - what to test?
  - what approach to use?
  - what are the documents available and refer to test?
  - who would be testing the system?
  - what data, test environment and configuration do we want to use?
  - what are the defects identified?
  - what are the potential risks involved in?

Testing can be concurrent with product development and test execution. Such testing is based on implicit and explicit specification as well as the "as-built" product.

Timeboxing

Timeboxing helps to stay on track, focus on specific goals and avoid unexpected expeditions.

The next test that would be carried out will be based on the previous test results. This follows Inspect and Adapt Model.

Mind Maps

Mind Maps were earlier used by students to take notes using a visual approach, of noting down key words and images. Mind mapping is being used as logging tool for exploratory testing.

A Mind Map is a graphical way of representing ideas and concepts. It's a visual thinking tool that organizes information, structures thoughts in a diagram instead of writing it in sentences.

Benefits and drawbacks

Exploratory Testing has its own share of benefits and challenges. Its unique capability brings out certain risks and vulnerabilities that were never before discovered. Exploratory Testing is suited for Agile testing environments. The ability to attach user actions and videos of recent activities has been invaluable. Exploring the application in-depth helps QA teams to reduce risk and gain confidence.

But the flipside is, Testers risk a great amount of time on an application looking for things to test and trying to find bugs. At times, lack of preparation, unplanned guidance can lead to many hours wasted in retesting the same functionality over and over again.

Conclusion –Let's Explore

Although manual testing continues to be a popular method of validating application's functionalities, exploratory testing can be introduced to accelerate manual testing process, increase speed, coverage, and accuracy. Its incremental delivery will be definite value add to your testing activities. Adopting all these techniques and processes might take some time during the initial stage. Once the team understands and effectively implementing the above approach help them to deliver best quality product in the market, thus maximizing the ROI.

Author's Bio

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