# Exploratory Testing

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# Exploratory Testing

- "Exploratory Testing" is the name given to the type of testing that we all inherently already do.
- Unscripted, unautomated, unrepeatable
- Founders make a distinction with "ad hoc" testing

# Principles

- Simultaneous test design with test execution
- "Scientific thinking in real-time"
- Using human intelligence to guide the testing
  - Behaviors that are version-specific that are not best suited to automated testing
  - Nuanced assessment of behavior

# Counterpoint to Scripted Testing

- Scripted testing necessarily leaves many interesting details of the expected behavior as unspecified — targets a specific part that can be easily specified
- *Exploratory allows the tester to observe and evaluate those unspecified behaviors, and encourages the tester to take notes to augment future testing*

# Counterpoint to Scripted Testing

- Scripted testing removes decision-making from the tester
- *Exploratory testing encourages the tester to guide his/her exploration according to the behaviors that they are witnessing*

# Mutual Benefits of Scripted and Exploratory

- Exploratory testing can often reveal test cases and specifications that can be automated
- Scripted and automated testing allows for a more robust testing, with limited expense

# Adapting to Situation: Examples

- Mission of the testing, or particular test session
- Available time, tools, data
- The product, its behavior
- Known previous problems, known situations about its development, ...

*"What's the best test I can perform, right now?"*

# Exploratory Test Sessions

- Often start with a “test charter”
- Test Charter: the mission of the testing, and perhaps also some tactics to be employed
- Can be chosen by the tester, or assigned by a test lead
- Can be explicit or implicit
- Are often vague, which is intended

# Acceptance Testing

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- Assessment of whether agreed-upon requirements are met
- Often employ checking of the business contract between client and contractor

# Acceptance Testing

Encompasses many things (ambiguity of natural language):

- Smoke testing
- User acceptance testing
- End-user testing
  - Alpha and beta testing

# Smoke Testing

- Not unlike exploratory testing
- Exercise the major functionality, ensure that everything still looks OK
- Often performed before even starting the main testing process

# Smoke Testing

Questions such as

- Does the program compile?
- Does it run?
- Does the main window appear?

# Smoke Testing

- Can be system tests or unit tests
- Can be required before checking in any code
- Also sometimes “build verification testing”
- Can also be a simple installation/deployment test
- Microsoft has reported that "smoke testing is the most cost effective method for identifying and fixing defects in software" (just behind code reviews)

# User Acceptance Testing (UAT)

- A form of testing that bridges the gap between verification and validation
- Intended to be performed by ***people***, not automated scripts or computers
- Check to see if the requirements of the system match the behavior, and that the requirements match the need

# Acceptance Testing

- The "user" can be differently defined
  - Final Customer
  - Contractor
  - Another development team
  - ...
- Should be different than the developer who wrote the code (unlike exploratory or smoke testing, which imposes no such rule)

# Alpha and Beta Testing

- Another form of acceptance testing
- *Alpha* and *Beta* testing are ambiguous terms, but generally refer to different levels of maturity of early non-developer actual use of early versions of the software — pre-release to whole customer base

# Alpha, Beta, Acceptance Testing versus Market Research?

- What counts as "testing"? E.g.,
  - Online sellers changing colors and layout of web site to affect purchasing behavior.
  - Facebook choosing which posts you see to influence your online behavior.
  - Ad networks trying differently styled advertisements.

Recommended podcast episode:

Under the Radar, Episode #238: “A/B Testing”