Agile Acceptance Test-Driven Development

Software Testing

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Software Testing

- Course outline
  - Basic principles of software testing
  - Test levels and types
  - Test case design
  - **Supporting tools**
  - **Testing process.**
  - Test planning.
  - Writing test report

ATDD

- What is Agile Acceptance Test Driven Development ?

- "A test-first approach in which acceptance criteria is well understood by the development team and test cases are created based on the bullet points stated in the acceptance criteria; any modification to the acceptance criteria may done in prior planning meeting in a negotiation with the Product Owner."

Acceptance Test

- "A set of tests that must pass before an application can be considered finished."
- Process:
  - The team work together to create test cases
  - A business representative validates the test cases.
- Test cases (aka examples):
  - The characteristics of a user story.

Examples

- Positive tests + Scenarios
  - assures the correct behavior of the user story, exception handlers and sequence of activities.
- Negative tests
  - includes negative flows and non-functional requirements (i.e., usability and performance).
- Tests written in simple language to include inputs, throughputs and expected outputs.

Example acceptance test case

- Scenario:
  - "System approves an card swipe for an amount less than the preset maximum limit"

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given "the System has selected an open card swipe",

and "the System has chosen to approve the swipe",

and "the card swipe amount is less than the agreed maximum limit",

when "the System completes the action",

then "the card swipe should be successfully approved",

}

Testing Techniques

- Various testing traditional techniques can be used to design test cases. Examples are:

  - **Equivalence partitioning**
  - **Boundary value analysis**
  - **Decision tables**

Example User Story & Acceptance Criteria

- "As a recurring customer, I want to re-order items from my previous orders so I don't have to search for them each time.

    - AC1. Order history option is displayed on accounts page.

    - AC2. Previously purchased items are displayed when clicking on order history.

    - AC3. User may add previously ordered items to the cart."

Workflow Visualization

- Start with visualizing the workflow.
  - What do you see when the user clicks "Order history"?
- Observe program behavior for help in visualization.

Positive test: Happy Path

- Cover the workflow.
- What is the happy path of the previously mentioned user story?
  1. Purchase items from general search
  2. …..
  3. …..
  4. ….
  5. …..

Standard items

- Create quick and easy test cases by verifying standard objects
  - i.e., headers, footers and standard menu options.

Negative test: Error cases

- Examples could be:

    – Item is out of stock. They ordered it previously, but now it's out of stock. Does this information display on the order history page?

- What else?

Think of Boundaries

- Think of the tests created using BA.
- What are they?

Scenarios & Acceptance Criteria

- An example of the system's behavior from various perspectives.

- A set of rules that cover system's behavior which is used to drive scenarios.

Pick your Scenarios

- What are the specific observable results to let you know that the activity has been successfully completed?

- 3 minutes per group

- Present your findings

To be Continued

- Next lecture.

References

- What is Acceptance Test-Driven Development in Agile Methodology, retrieved from http://istqbexamcertification.com/what-is-acceptance-test-driven-development-in-agile-methodology/ on March 20, 2017.
- Writing Test Cases from User Stories & Acceptance Criteria, retrieved from https://blog.testlodge.com/writing-test-cases-from-user-stories-acceptance-criteria/ on March 20, 2017.
- Agile Acceptance Test Driven Development, retrieved from https://www.slideshare.net/nashjain/acceptance-test-driven-development-350264 on March 20, 2017.