7. Software Defects. Reporting, status and issue tracking systems. Re-testing

Wow, there are so many!

Astea Solutions QA Team

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Overview

- Introduction
- Bug tracking system
- Bug life-cycle
- Bug attributes
- JIRA demo

Questions

- What is equivalence partitioning?
- What is boundary value analysis?
- What is decision table?

Questions

A program validates a numeric field as follows: Values less than 10 are rejected, values between 10 and 21 are accepted, values greater than or equal to 22 are rejected. Which of the following covers the MOST boundary values?

a) 9,10,11,22
b) 9,10,21,22
c) 10,11,21,22
d) 10,11,20,21

Questions

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Questions

If a candidate is giving an exam of 40 questions, should get 25 marks to pass (61%) and should get 80% for distinction, what is equivalence class.

a) 23, 24, 25
b) 0, 12, 25
c) 30, 36, 39
d) 32,37,40

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   b) 0, 12, 25
   c) 30, 36, 39
   d) 32,37,40

Introduction (1)

- One of testing purposes is to find and address bugs
- How bugs are found
  - by execution of test cases
  - by exploratory testing
  - by other team members
  - by users
  - by clients
- Bug is addressed by
  - Reporting the bug into bug tracking system
  - Re-testing - retest and verify that bug is really fixed
  - Verify that no new bug has been introduced from the fix

Introduction (2)

- From now on bug will mean two things
  - Mismatch between actual and expected results
  - Record in bug tracking system for that mismatch

I Am A Bug!
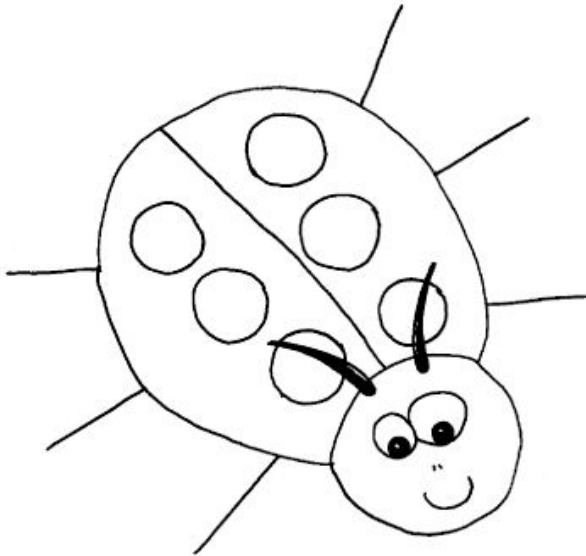
Bug tracking system (1)

- Infrastructure that enables you to create, store, view and modify information about bugs
- Information sharing
- Share bugs inside the company
- All bug information is kept for historical reasons
- Reporting and statistics
- Release overview

Bug tracking system (2)

- Project management system - provides project, task and time management, team collaboration and reporting
- Software project management systems includes bug tracking functionality
- Example systems
  - JIRA - Issue & project tracking for software teams
  - Pivotal Tracker - the awesome, lightweight, agile project management tool for software teams.
  - Bugzilla - an open source, web-based general-purpose bugtracker
  - Trac - an open source, web-based project management and bug tracking system

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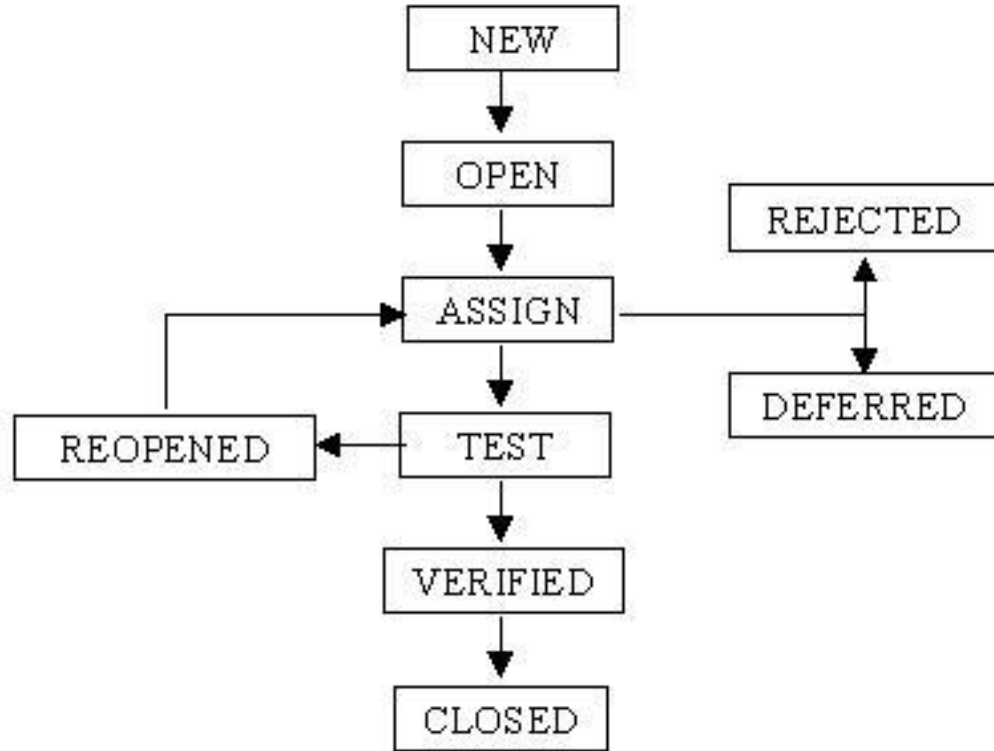
Bug life-cycle (1)

Bug life-cycle (2)

- New - when the bug is posted for the first time
- Open - after a tester has posted a bug, the lead of the tester approves that the bug is genuine
- Assign - once the lead changes the state as "OPEN", he assigns the bug to corresponding developer or developer team
- Test - once the developer fixes the bug, he has to assign the bug to the testing team for next round of testing
- Deferred - the bug, changed to deferred state means the bug is expected to be fixed in next releases
- Rejected - if the developer feels that the bug is not genuine, he rejects the bug

Bug life-cycle (3)

- Duplicate - if the bug is repeated twice or the two bugs mention the same concept of the bug
- Verified - once the bug is fixed and the status is changed to "TEST", the tester tests the bug. If the bug is not present in the software, he approves that the bug is fixed
- Reopened - if the bug still exists even after the bug is fixed by the developer. The bug passes through the life cycle once again.
- Closed - once the bug is fixed, it is tested by the tester. If the tester feels that the bug no longer exists in the software, he changes the status of the bug to "CLOSED". This state means that the bug is fixed, tested and approved.

Bug attributes (1)

- ID
  - Unique inside the company
  - Good to include project name or project ID
- In project management systems there is type attribute
  - Bug
- Summary
  - Gives quick powerful description
  - Good summary is very important
  - Good to include requirement ID or feature/component name

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Bug attributes (2)

- Description
  - Describe bug in a way that everyone is able to understand it
  - Steps to reproduce
  - Actual and expected results
- Severity
  - Technical characteristics
  - Bug's impact on the software
  - Can have definitions of severity levels in Test strategy/Test plan
  - Levels
    - S1 - crash, data loss
    - S2 - site hangs, blocking issue
    - S3 – functional issue
    - S4 - other

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Bug attributes (3)

- Priority
  - Business aspect of the bug
  - Bug's impact on business of the company
  - Priority can be different for different people
  - Used for decision when to fix the bug
  - Should have definitions of priority levels in Test strategy/Test plan
  - Levels
    - P1 (Blocker) – site is dead
    - P2 (Critical) – integration is broken, not working page
    - P3 (Major) – page loads too long; functionality not working correctly
    - P4 (Minor) – design issue; unimportant functionality issue

Bug attributes (4)
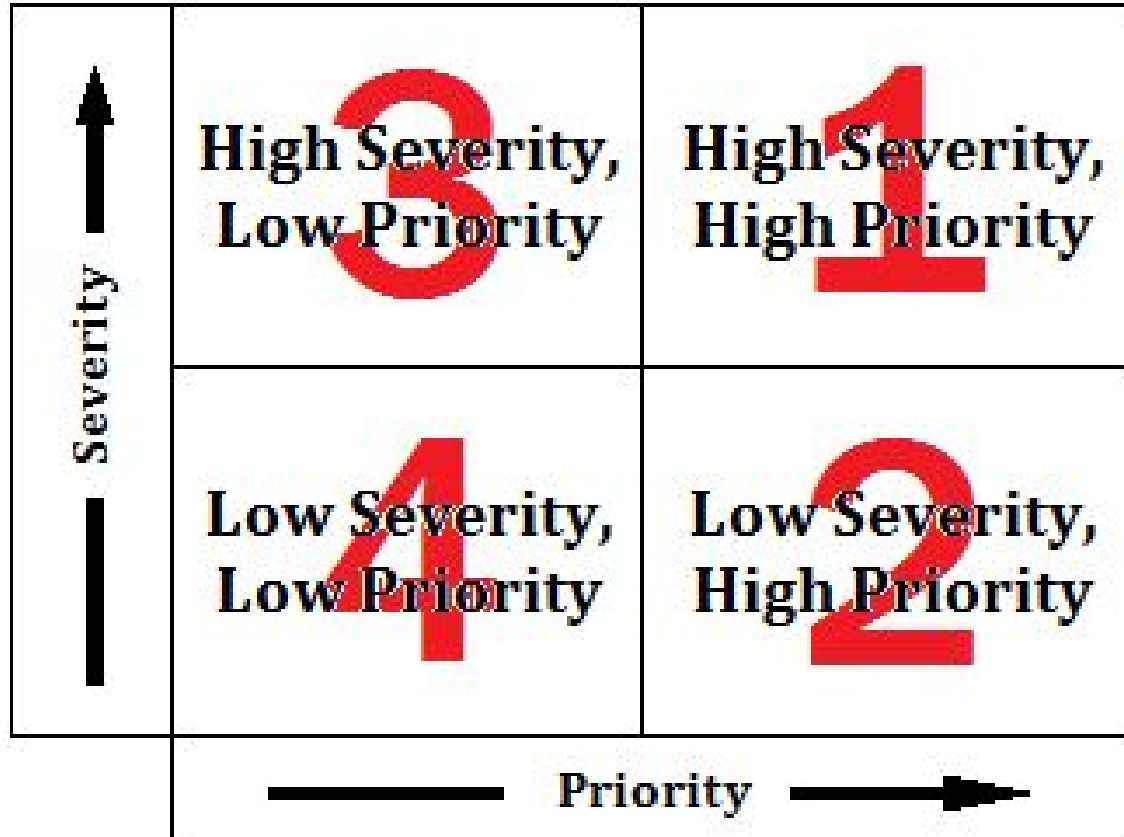
Bug attributes (5)

- Attachment
    - "A picture is worth a thousand words"
    - Problematic areas are highlighted
    - Good to include attachment
- Reporter and date
    - Automatic fields
- Assigned to
    - Person responsible for bug processing
    - Might be developer, Dev lead, project manager or system account
    - Can be defined in Test plan/Test strategy

Bug attributes (6)

- Component
  - Functional areas of the software
- Version/Build
  - Build/Release number on which bug was found
- Environment
  - Production/Staging, DB version, environmental specifics
- Comments
  - Everyone can add information related to bug

Bug attributes (7)

- Status
- Reproducibility
  - Always, from time to time
- Resolution
  - Shows why bug is in certain status
  - Fixed, cannot reproduce, duplicate, won't fix, not a bug
- History
  - All bug changes are automatically kept by system

QUESTIONS

Summary

- What do we mean by bug after today lecture?
- What is JIRA?
- What is Bugzilla?
- What are severity and priority?

Resources

- http://www.amibug.com/iamabug/p01.html

DEMO

Homework

Go to http://oblacheto.com:8080 and register. There is project named "Bugs homework". In this project report 2 software bugs with ID in format - "FirstName_LastName_FacultyNumber_BugNumber".

QUESTIONS