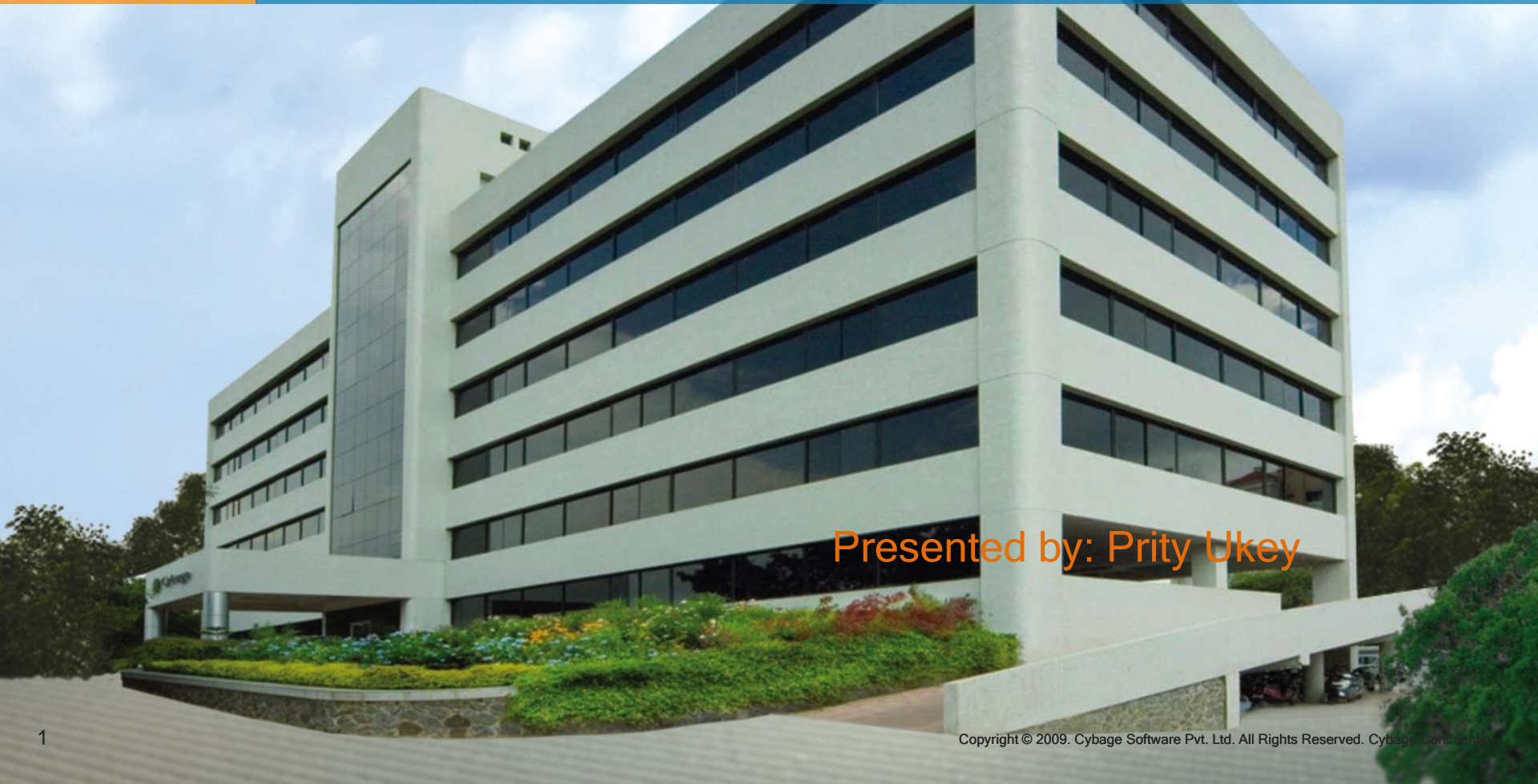


Defect Management/Tracking Process



Presented by: Prity Ukey

Agenda

- Introduction
- What is a Defect?
- Defect Life Cycle Process
- Need of Defect Tracking Tool
- Why Good Defect Logging?
- The Basics...
- Guidelines To Follow
- Things To Check While Logging Defect
- Things To Check After Logging Defect / Programmer's Viewpoint
- Defect Verification
- Root Cause Analysis
- Case Study
- Tools

Defect Tracking in V-Model ?

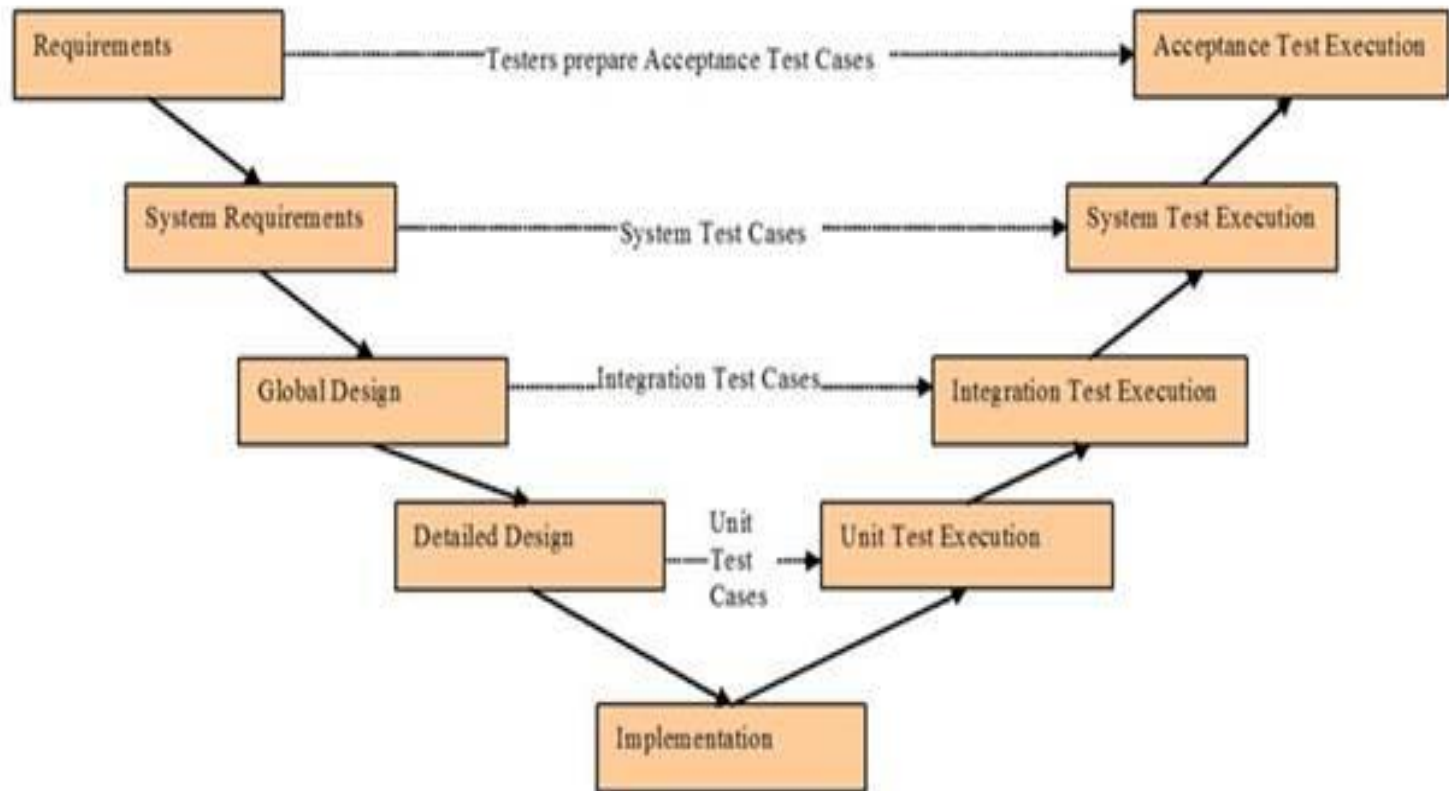


Figure 2: V-Model

What is a Defect?

➤ **Producer's[Tester] view point –**

A defect is a deviation from specifications, whether missing, wrong, or extra.

➤ **Developers Point of view –**

A defect is an error in coding or logic that causes a program to malfunction or to produce incorrect/unexpected results.

➤ **Customer's view point –**

A defect is anything that causes customer dissatisfaction, whether in the requirements or not; this view is known as “fitness for use.”

Defect Management

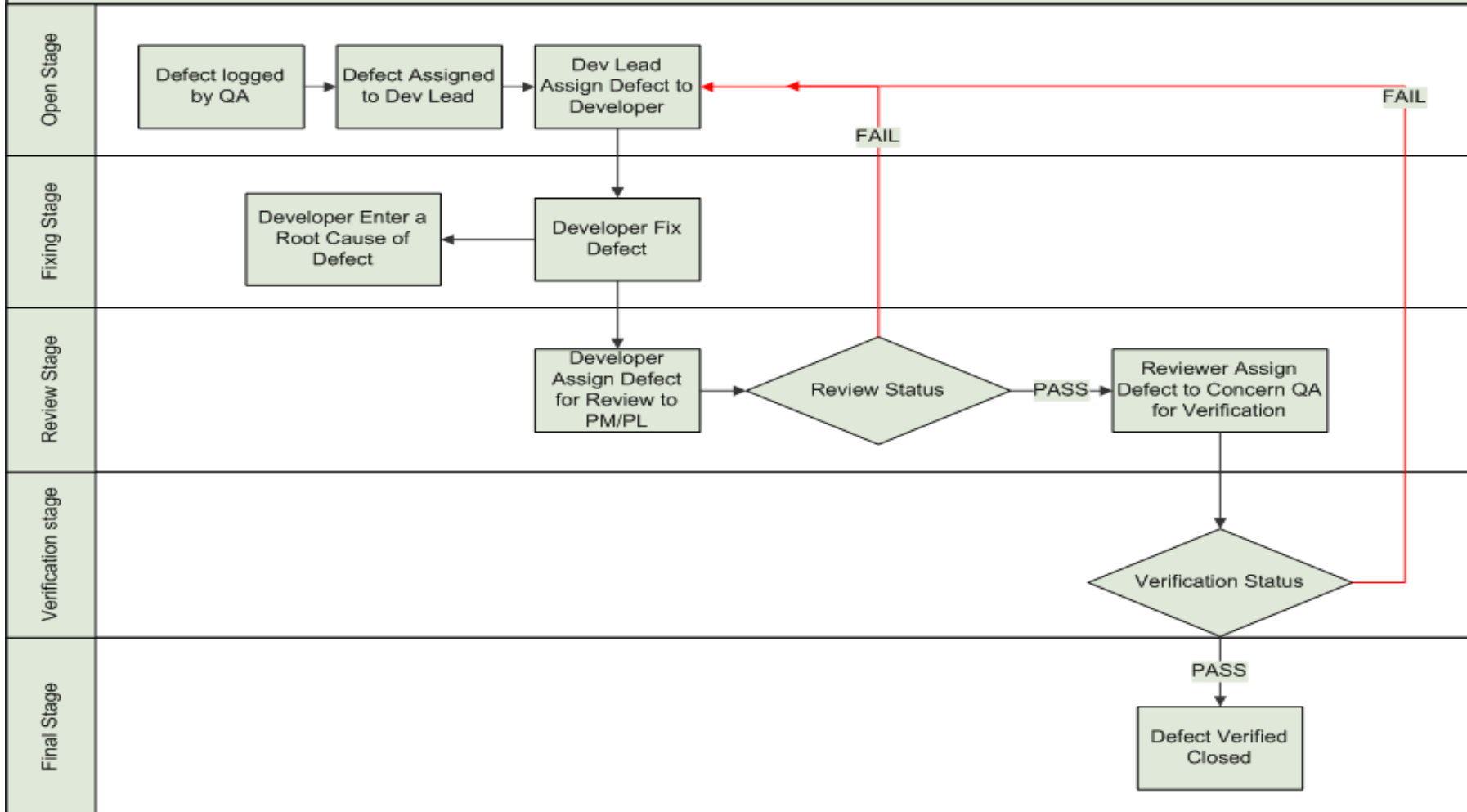
| | |
|-------------------------|---|
| Defect Prevention | Use of Processes and Tools during development and Testing |
| Defect Discovery | Identification of Defects corresponding to failures found in static and dynamic testing |
| Recording and Reporting | Defects are recorded and Reported using proper forms or in tools |
| Defect Classification | Based on Source of Origin, Severity-wise, Type-wise, Cause-wise using defect classification schemes given by Blezer, or ODC |
| Defect Resolution | Defect Resolution |
| Defect Prediction | Defect Prediction |

Defect Discovery

| Cost to fix a defect | | Time detected | | | | |
|----------------------|--------------|---------------|--------------|--------------|-------------|--------------|
| | | Requirements | Architecture | Construction | System test | Post-release |
| Time introduced | Requirements | 1× | 3× | 5–10× | 10× | 10–100× |
| | Architecture | - | 1× | 10× | 15× | 25–100× |
| | Construction | - | - | 1× | 10× | 10–25× |

Defect Life Cycle Process

TTPro Defect Life Cycle



Need of Bug Tracking Tools

- To Easily Track Defects and Issues in all stages.
- Better Co-ordination between Developers and QAs
- Requirements Traceability
- Defect reports gives the clear picture of the current state of the software being developed – Project Health
- Quantitative Measurements
- Management Visibility

Defect Priority:

What is a Priority?

Who decides Priority?

How to Define a Priority?

The order in which the defect should be fixed

e.g.

- If Company Name is misspelled at the homepage of the website.

Priority - **High**

Severity - **Low**

High Severity & Low / High Priority

For example an application which generates some banking related reports weekly, monthly, quarterly & yearly by doing some calculations.

- If there is a fault while calculating yearly report..

High Severity & Low Priority

- In the above example if there is a fault while calculating weekly report.

High Severity & High Priority

- Weekly Report is been wrongly named may be as TimeTracking Report and when tried to open for the details its not opening

Low Severity & High / Low Priority

- If there is a spelling mistake or content issue on the homepage of a website which has daily hits of lakhs.

Low Severity & High Priority

- If there is a spelling mistake on the pages which has very less hits throughout the month on any website.

Low Severity & Low Priority

- Very small cosmetic defect which even may be not noticeable. Like period missing in the bulleted line.

Defect Severity:

What is Severity ?

Who Decides Severity?

How to Define Severity?

| Low | Medium | High | Critical |
|------------------------------------|--------------------------|---------------------|-------------|
| Cosmetic Defects | Boundary Related Defects | Calculation Defects | H/W Failure |
| Script Errors | Error Handling Defects | Functional Defects | Page Crash |
| | Compatibility Issues | Data Corruption | |
| | Any Validations | | |
| | | | |
| Enhancements / Feature Requests | | | |

Defect Status

1. New
2. Open
3. Assign
4. Deferred
5. Duplicate
6. Rejected/Invalid
7. Fixed
8. Verified Re-opened
9. Verified Closed



The Basics...

- What you did?
- What you wanted to happen? , and
- What actually happened?

Successful Tester

“A successful Tester is not the one who finds the most number of defects, but the one, **whose most number of defects are fixed.**” -
C Kaner, “Testing Computer Software”



Why Good Defect Logging?

Pros of good defect logging:

- Nicely reported defects helps developer to fix the problem quickly
- Adds up to the quality of product being developed thereby gaining client's delight.
- Quick Data retrieval

Cons of bad defect logging:

- Unproductive time spent by development and QA
- Leads to client's dissatisfaction



Guidelines To Follow

- Avoid Duplicates
- Be Specific & Clear in writing
- Reproducibility is Paramount
- Try to reproduce Issue using different user account
(Multiuser supported application)
- Be Detailed



Things to Check While Logging Defects:

- Summary or Brief description
- Steps to Reproduce
- Test Data if Required
- Defect Type
- Test Case Number
- Product/Component
- Entered/Found / Detected by
- Entered/ Found / Created Date
- Priority
- Severity
- Build Version
- Test Configuration
- Attachment/Snapshot
- Other Information

Types of Defect

Types of Defect: [Functional / Non-Functional]

- **Defect:** Functionality/Non-Functional not matched/satisfied as per expectation.
- **Enhancement:** A new feature or functionality in the s/w , Suggestions to modify the current
- **Change Request:** As per Change request or Impact analysis.

Poor Summary

Add Defect - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media

Address <http://tpro.cybage.com/scripts/ttcgi.exe>


Search the Web Go Visual Bookmarks Pop-up Bin Search Results

Logout Help

Workflow:

- [Assign](#)
- [Force Close](#)
- [Release Notes](#)
- [Comment](#)


Add Defect Save Cancel

Summary: 

Status: Open, not assigned Disposition:

Type: Priority:

Product: Component:

Reference:  Severity:

Entered By: Date Entered:

Good Summary

Add Defect - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print View Source

Address <http://tpro.cybage.com/scripts/ttcgi.exe>

Search the Web Go Visual Bookmarks Pop-up Bin Search Results

Logout Help

Workflow:

- [Assign](#)
- [Force Close](#)
- [Release Notes](#)
- [Comment](#)

Add Defect Save Cancel

Summary: ASPx/JSP: Web gives JScript error upon login as LDAP u abc

Status: Open, not assigned Disposition: <not set>

Type: Functionality Priority: Medium

Product: Web Component: <not set>

Reference: abc Severity: Major

Entered By: Patni, Swapnil Date Entered: 9/2/2005

Detail Workflow Workaround Source Code Notify Links History

Reported 1 time(s): Patni, Swapnil on 9/2/2005 Show

Found By: Patni, Swapnil Search Date Found: 9/2/2005 Version Found: 8.1.000.1

Other Info

Add Defect - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print View Source

Address <http://tpro.cybage.com/scripts/ttcgi.exe>

Search the Web Go Visual Bookmarks Pop-up Bin Search Results

Logout Help

Workflow:

- [Assign](#)
- [Force Close](#)
- [Release Notes](#)
- [Comment](#)

Add Defect [Save] [Cancel]

Summary: ASPx/JSP: Web gives JScript error upon login as LDAP u [abc]

Status: Open, not assigned Disposition: <not set>

Type: Functionality Priority: Medium

Product: Web Component: <not set>

Reference: [abc] Severity: Major

Entered By: Patni, Swapnil Date Entered: 9/2/2005

Detail Workflow Workaround Source Code Notify Links History

Reported 1 time(s): Patni, Swapnil on 9/2/2005 [Show]

Found By: Patni, Swapnil [Search] Date Found: 9/2/2005 Version Found: 8.1.000.1

Configuration Information

Add Defect - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Copy Paste Address <http://tpro.cybage.com/scripts/ttcgi.exe>

Search the Web Go Visual Bookmarks + Pop-up Bin Search Results

Found By: Patni, Swapnil Search Date Found: 9/2/2005 Version Found: 8.1.000.1

Description:

Reproducible: <not set>

Steps to Reproduce:

Test Config: User's Test Config

Other Hardware and Software:

Client OS: Win 2K Professional with SP4
Server OS: RH Linux AS 3
Browser: IE 6.0 SP1

Poor Steps to Reproduce

Add Defect - Microsoft Internet Explorer


File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail

Address <http://tpro.cybage.com/scripts/ttcgi.exe>

Search the Web Go Visual Bookmarks Pop-up Bin Search Results


[Force Close](#)
[Release Notes](#)
[Comment](#)

Summary: 

Status: Open, not assigned Disposition:

Type: Priority:

Product: Component:

Reference:  Severity:

Entered By: Date Entered:

Detail Workflow Workaround Source Code Notify Links History

Reported 1 time(s):

Found By: Date Found: Version Found:

Description:

Reproducible:

Steps to Reproduce:

Open the Web (ASPx Version) by giving URL <http://localhost/MicroStrategy/asp/Admin.aspx>. Add a server name by giving IP address as: 192.168.x.x Click on [Add Server] button. As a result of this, server with above IP address will be added. Click on [Home] hyper link. Takes you to the home page of the web application. Click on any project listed out there for e.g. MicroStrategy Tutorial. Web asks for a valid login. Login to Web as user named [tester]. Click on [Login] button to see the Javascript error.

Good Steps to Reproduce

Add Defect - Microsoft Internet Explorer


File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail News RSS Feeds

Address <http://tpro.cybage.com/scripts/ttcgi.exe>

Search the Web Go Visual Bookmarks + Pop-up Bin Search Results


[Force Close](#)
[Release Notes](#)
[Comment](#)

Summary: 

Status: Open, not assigned Disposition:

Type: Priority:

Product: Component:

Reference:  Severity:

Entered By: Date Entered:

Detail Workflow Workaround Source Code Notify Links History

Reported 1 time(s):

Found By: Date Found: Version Found:

Description:

Reproducible:

Steps to Reproduce:

1. Open the Web (ASPx Version) by giving URL <http://localhost/MicroStrategy/asp/Admin.aspx>
2. Add a server name by giving IP address as: 192.168.x.x
3. Click on [Add Server] button. As a result of this, server with above IP address will be added.
4. Click on [Home] hyper link. Takes you to the home page of the web application
5. Click on any project listed out there for e.g. MicroStrategy Tutorial. Web asks for a valid login
6. Login to Web as user named [tester]. Click on [Login] button to see the Javascript error.

Snapshot / Attachments:

Add Defect - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print View Source Add Favorite

Address <http://tpro.cybage.com/scripts/ttcgi.exe>

Search the Web Go Visual Bookmarks + Pop-up Bin Search Results

Found By: Search Date Found: Version Found:

Description:

Reproducible:

Steps to Reproduce:

1. Open the Web (ASPx Version) by giving URL <http://localhost/MicroStrategy/asp/Admin.aspx>
2. Add a server name by giving IP address as: 192.168.x.x
3. Click on [Add Server] button. As a result of this, server with above IP address will be added.
4. Click on [Home] hyper link. Takes you to the home page of the web application
5. Click on any project listed out there for e.g. MicroStrategy Tutorial. Web asks for a valid login
6. Login to Web as user named [tester]. Click on [Login] button to see the Javascript error.

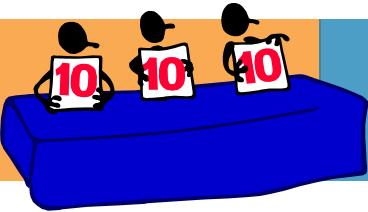
Test Config:

Other Hardware and Software:

Attachments:

Add Attachment: Browse... Upload

Save Cancel



After Logging Defect / Developer's Viewpoint

- **Developers can come across some scenarios such as:**
 - It does work for me (Unable to reproduce/replicate)
 - Not a bug (Working as designed/Invalid defect)
 - Not Our bug
 - Duplicate bug
 - Deferred (Postponed)
 - Need client clarification

- **Good Rapport with the Developer**

- **White Box / Grey Box Tester attitude**

Defect Verification

- Last step in Defect life cycle process
- Fixed defects should be tested as early as possible
- Mark defect as Failed in case of re-occurrence or partial fix and re-open it
- Ask developers to add appropriate comments if the defect is fixed as deferred, rejected, Wont Fix, not a Bug etc.
- Close the defect with appropriate comments, once verified passed.

Root Cause Analysis: Found a Bug, Now What?

A bug is identified, now what? Report it. (That's it ???)

❑ Assessing the root cause of the issue is the key here

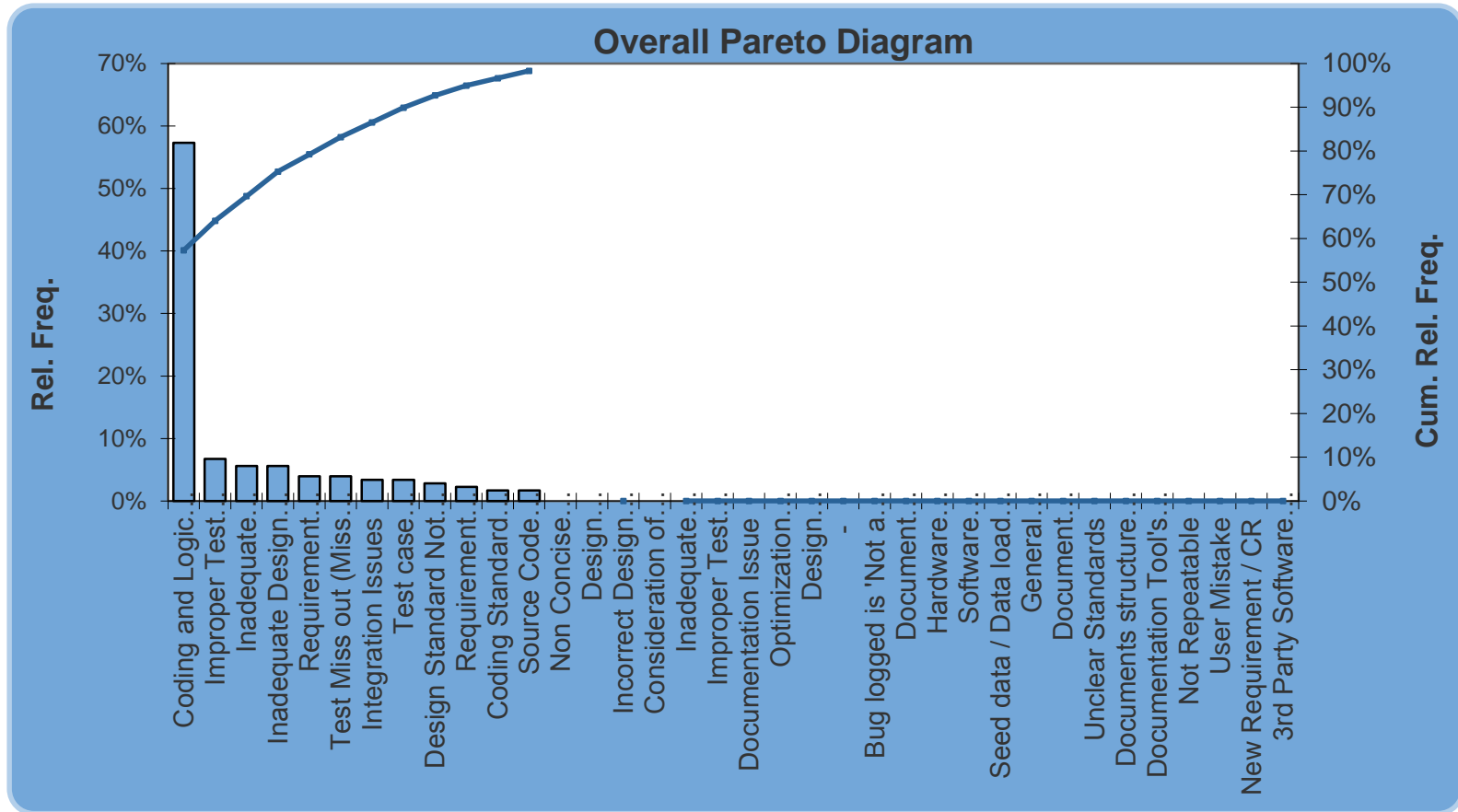
Analyze—This is the part where we dive in and try to understand what caused the defect.

- What caused the defect? (e.g. Stack trace, Error log, script disabling etc.)
- Inputs / Environment ?(e.g. data type, user access/ role etc.)
- Is this a new issue or a known issue?
- If known issue, what is the exact reason for the same?

Case Study

We will see the data generated through the effective defect logging for one of the live project.

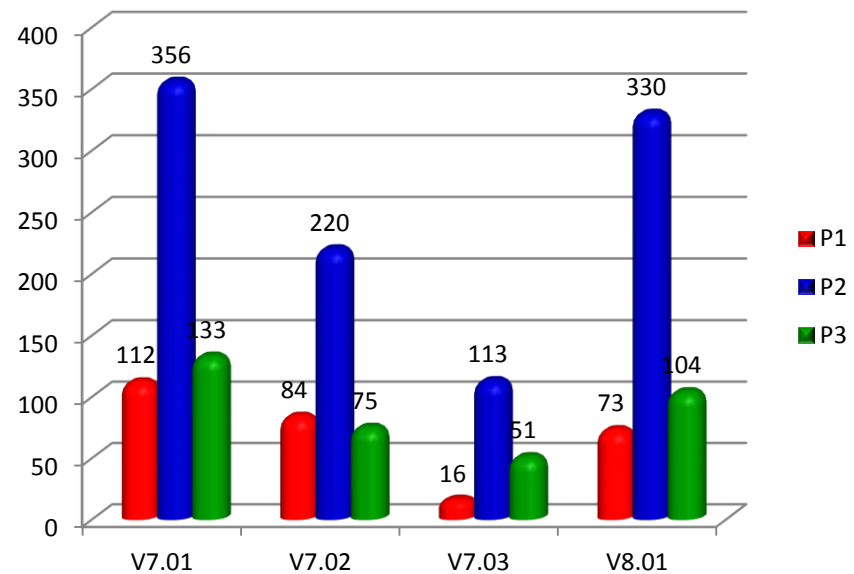
Pareto Analysis - Review Defects:



Defect Comparison V7.01, 7.02, 7.03, 8.01

Project Name: XXXXXXXXXXXX (Confidential)

| Version\Priority | P1 | P2 | P3 | Total |
|------------------|-----|-----|-----|-------|
| V7.01 | 112 | 356 | 133 | 601 |
| V7.02 | 84 | 220 | 75 | 379 |
| V7.03 | 16 | 113 | 51 | 180 |
| V8.01 | 73 | 330 | 104 | 507 |



Defect Tracking Tools:

Some of the majorly known Defect Tracking tools:

Test Track Pro: Robust Commercial tool by Seapine software

BugZilla: Open source bug tracking system

Mantis: Open source bug tracking system

JIRA: Open Source

Microsoft Test Manager – VSTS 2010 Licensed

Questions??



A close-up photograph of two people in white business attire shaking hands. The person on the right is wearing a silver metal-link wristwatch. The background is blurred, showing an office environment with orange and grey tones.

Thank you.