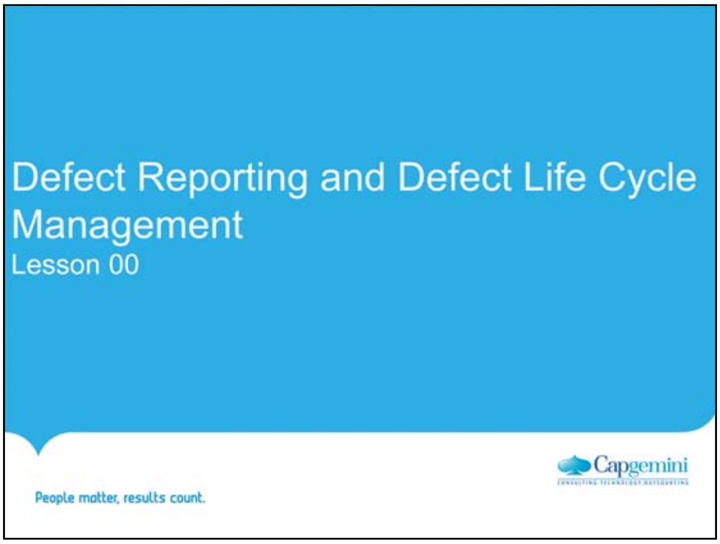
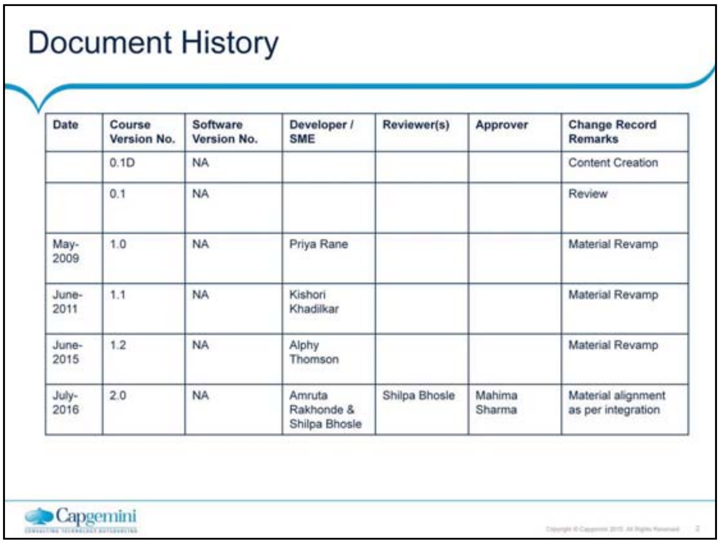


Defect Reporting and Defect Life Cycle Management

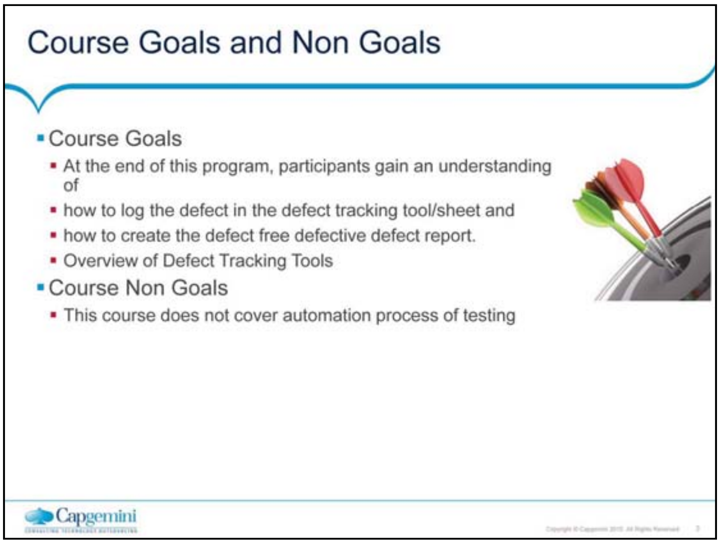
Lesson 00

People matter, results count.



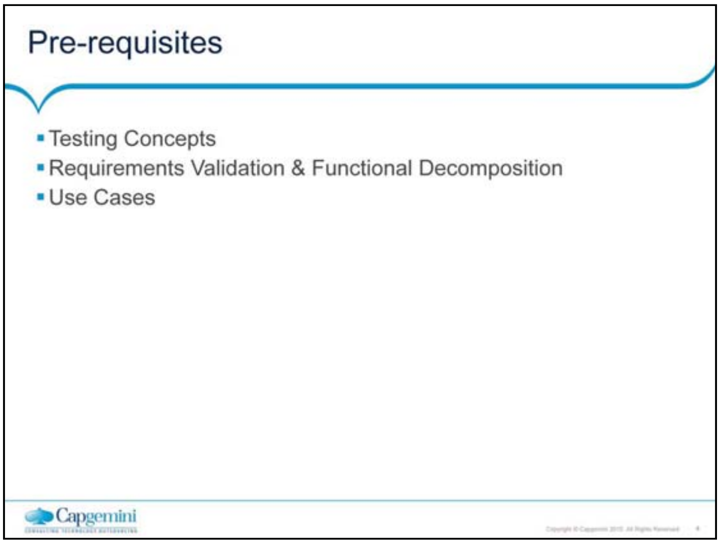
Document History

Date	Course Version No.	Software Version No.	Developer / SME	Reviewer(s)	Approver	Change Record Remarks
	0.1D	NA				Content Creation
	0.1	NA				Review
May-2009	1.0	NA	Priya Rane			Material Revamp
June-2011	1.1	NA	Kishori Khadilkar			Material Revamp
June-2015	1.2	NA	Alphy Thomson			Material Revamp
July-2016	2.0	NA	Amruta Rakhonde & Shilpa Bhosle	Shilpa Bhosle	Mahima Sharma	Material alignment as per integration



Course Goals and Non Goals

- Course Goals
  - At the end of this program, participants gain an understanding of
  - how to log the defect in the defect tracking tool/sheet and
  - how to create the defect free defective defect report.
  - Overview of Defect Tracking Tools
- Course Non Goals
  - This course does not cover automation process of testing



Pre-requisites

- Testing Concepts
- Requirements Validation & Functional Decomposition
- Use Cases

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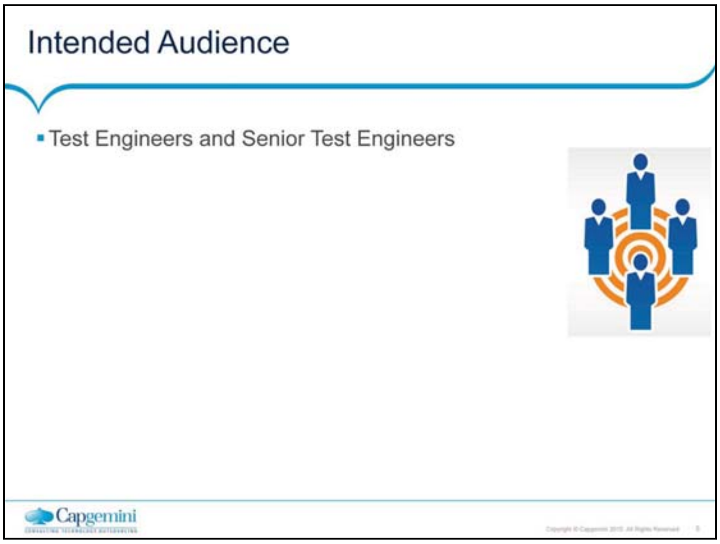
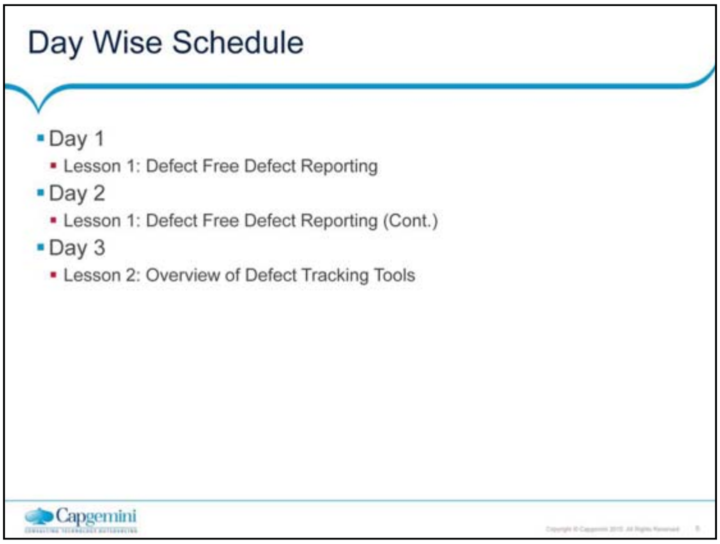


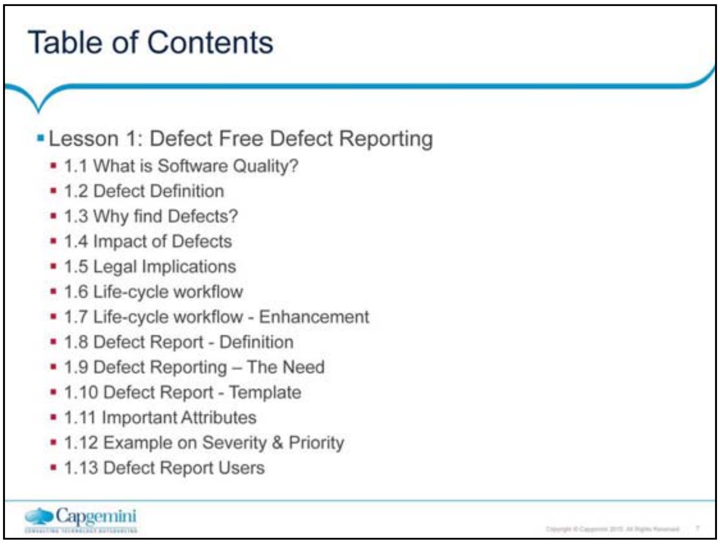
Intended Audience

- Test Engineers and Senior Test Engineers



Day Wise Schedule

- Day 1
  - Lesson 1: Defect Free Defect Reporting
- Day 2
  - Lesson 1: Defect Free Defect Reporting (Cont.)
- Day 3
  - Lesson 2: Overview of Defect Tracking Tools



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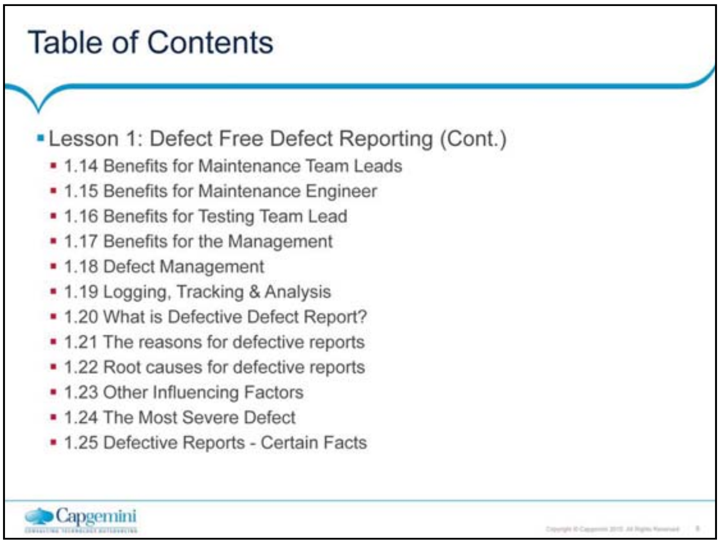

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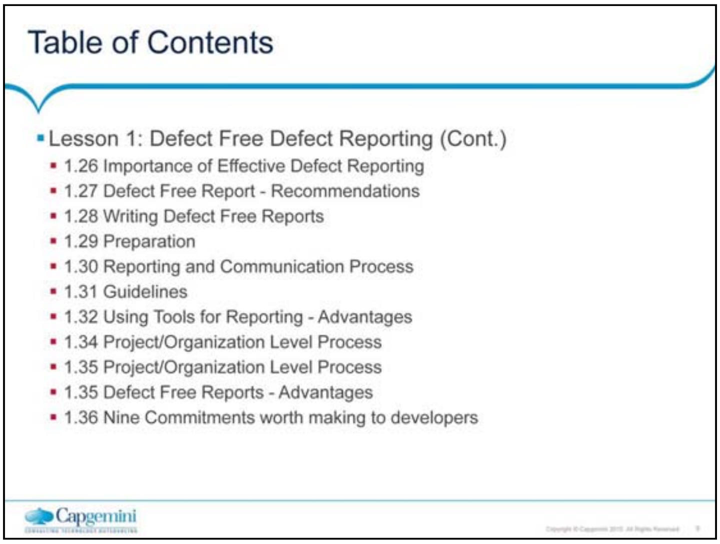

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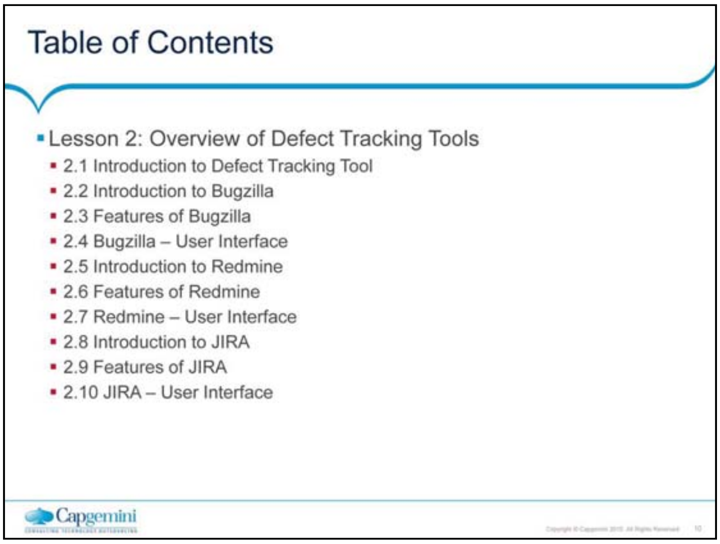

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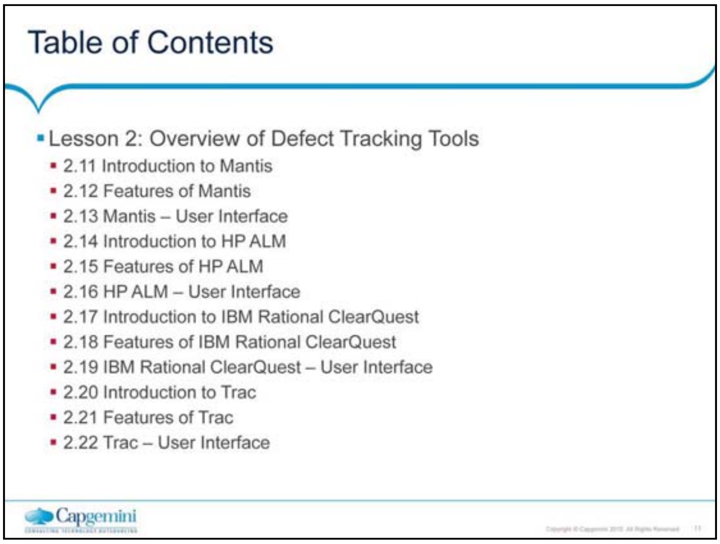

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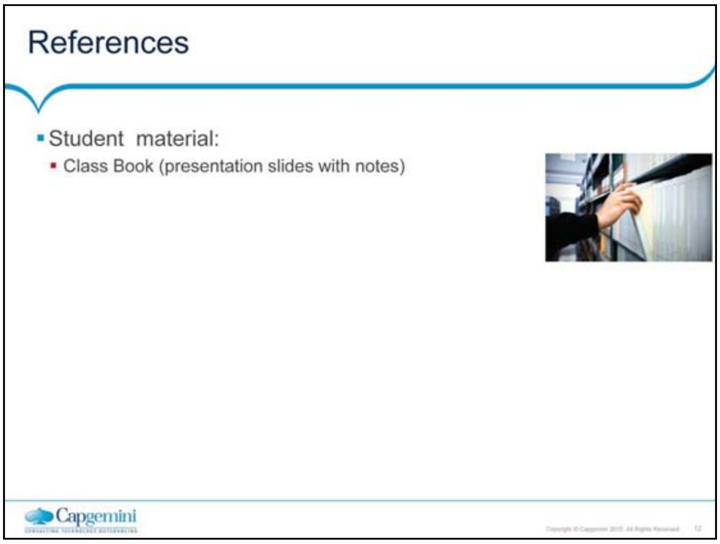
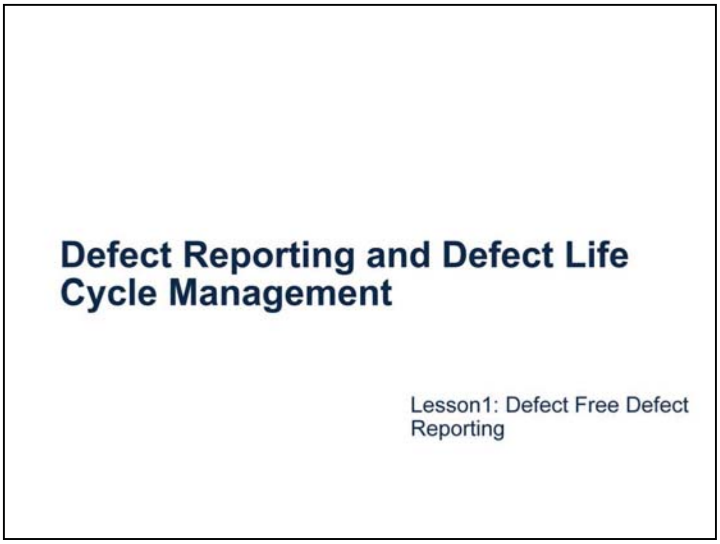


References

- Student material:
  - Class Book (presentation slides with notes)

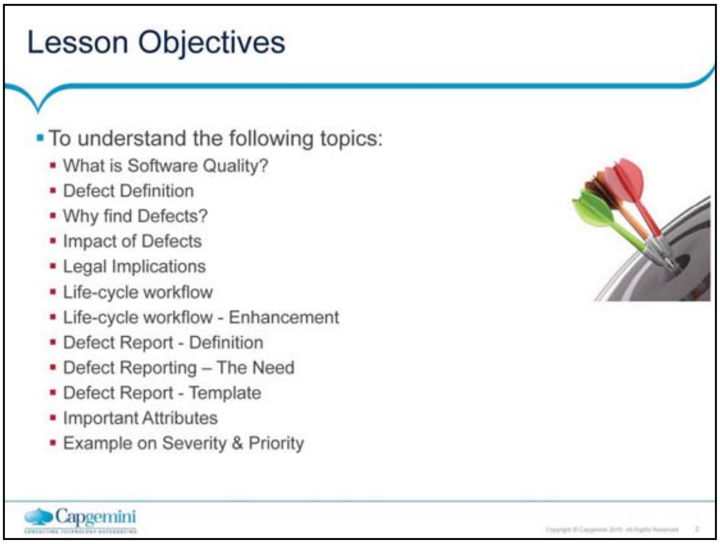
Next Step Courses (if applicable)

- Defect Tracking Tools



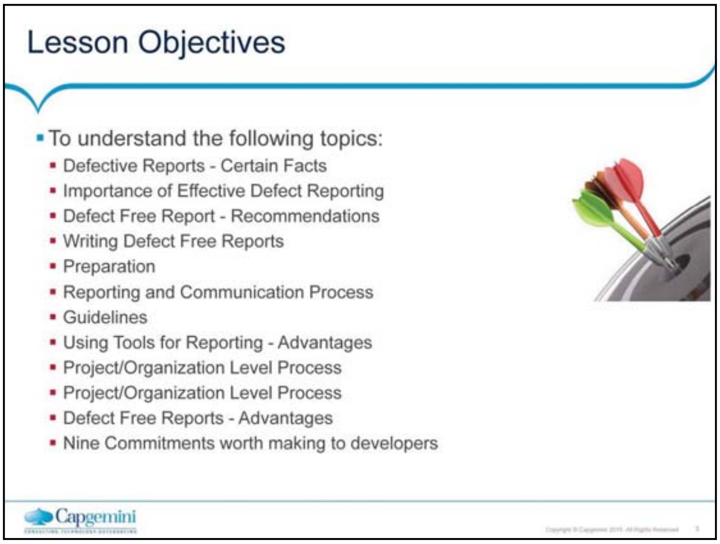
Defect Reporting and Defect Life Cycle Management

Lesson1: Defect Free Defect Reporting



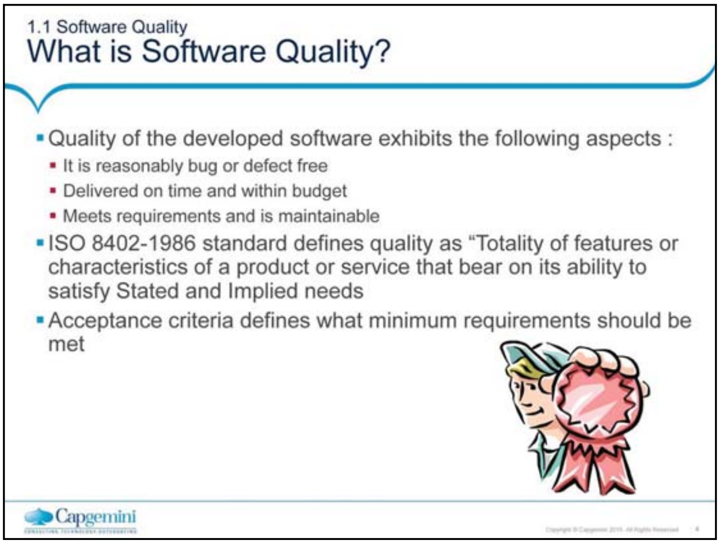
Lesson Objectives

- To understand the following topics:
  - What is Software Quality?
  - Defect Definition
  - Why find Defects?
  - Impact of Defects
  - Legal Implications
  - Life-cycle workflow
  - Life-cycle workflow - Enhancement
  - Defect Report - Definition
  - Defect Reporting – The Need
  - Defect Report - Template
  - Important Attributes
  - Example on Severity & Priority



Lesson Objectives

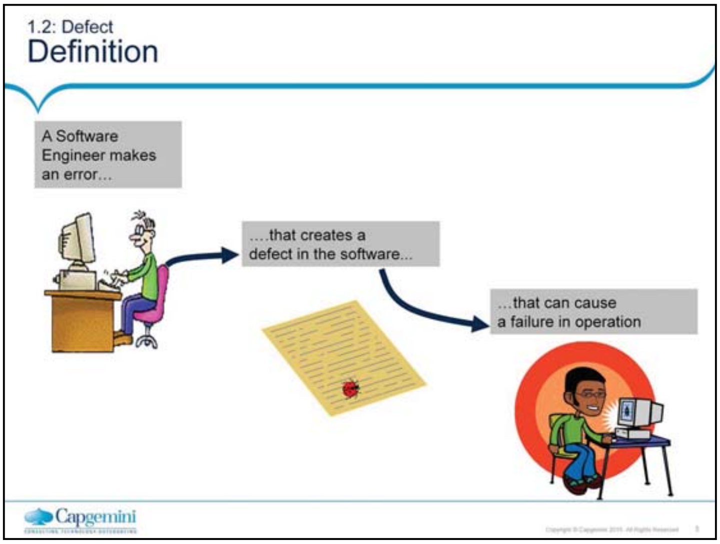
- To understand the following topics:
  - Defective Reports - Certain Facts
  - Importance of Effective Defect Reporting
  - Defect Free Report - Recommendations
  - Writing Defect Free Reports
  - Preparation
  - Reporting and Communication Process
  - Guidelines
  - Using Tools for Reporting - Advantages
  - Project/Organization Level Process
  - Project/Organization Level Process
  - Defect Free Reports - Advantages
  - Nine Commitments worth making to developers



1.1 Software Quality

What is Software Quality?

- Quality of the developed software exhibits the following aspects :
  - It is reasonably bug or defect free
  - Delivered on time and within budget
  - Meets requirements and is maintainable
- ISO 8402-1986 standard defines quality as "Totality of features or characteristics of a product or service that bear on its ability to satisfy Stated and Implied needs
- Acceptance criteria defines what minimum requirements should be met



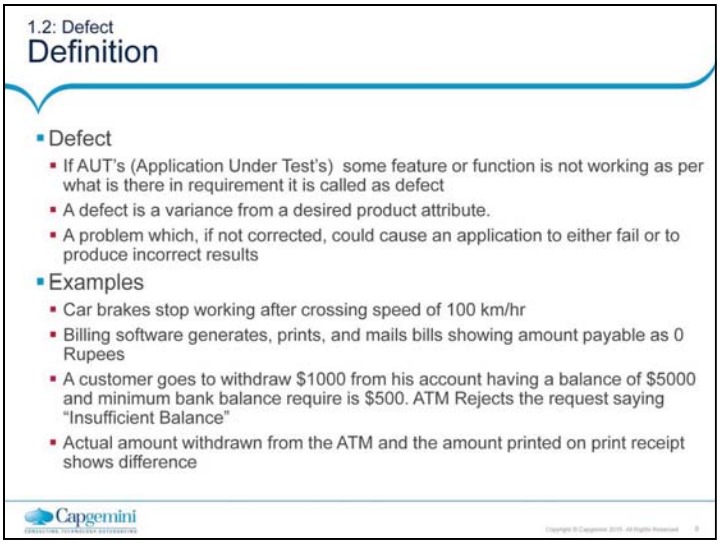
1.2: Defect

Definition

A Software Engineer makes an error…

….that creates a defect in the software...

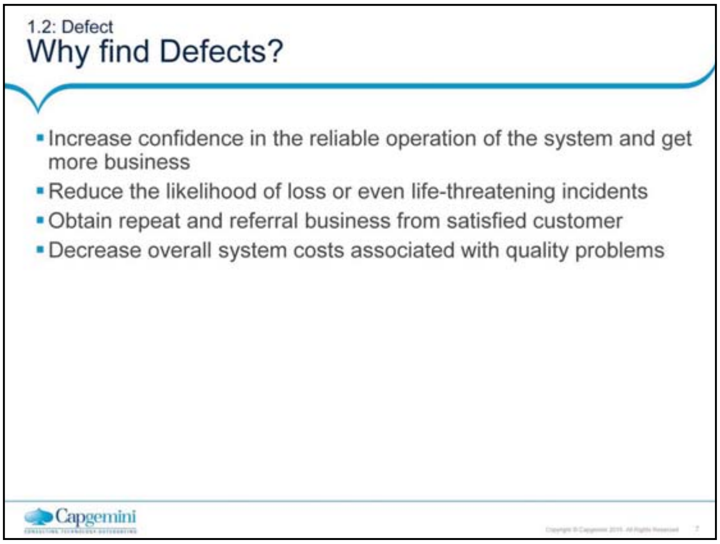
…that can cause a failure in operation



1.2: Defect

Definition

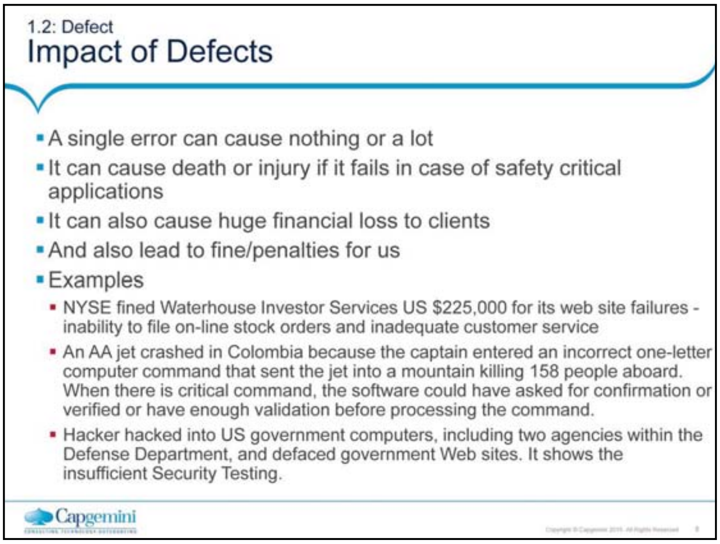
- Defect
  - If AUT's (Application Under Test's) some feature or function is not working as per what is there in requirement it is called as defect
  - A defect is a variance from a desired product attribute.
  - A problem which, if not corrected, could cause an application to either fail or to produce incorrect results
- Examples
  - Car brakes stop working after crossing speed of 100 km/hr
  - Billing software generates, prints, and mails bills showing amount payable as 0 Rupees
  - A customer goes to withdraw $1000 from his account having a balance of $5000 and minimum bank balance require is $500. ATM Rejects the request saying "Insufficient Balance"
  - Actual amount withdrawn from the ATM and the amount printed on print receipt shows difference



1.2: Defect

Why find Defects?

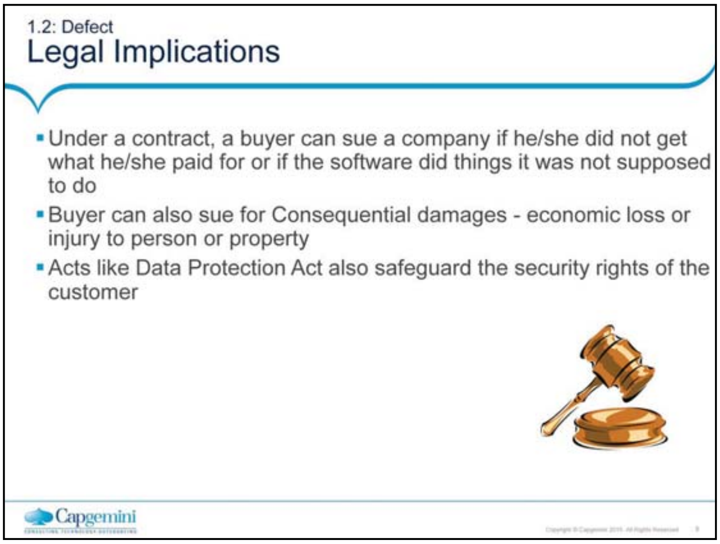
- Increase confidence in the reliable operation of the system and get more business
- Reduce the likelihood of loss or even life-threatening incidents
- Obtain repeat and referral business from satisfied customer
- Decrease overall system costs associated with quality problems



1.2: Defect

Impact of Defects

- A single error can cause nothing or a lot
- It can cause death or injury if it fails in case of safety critical applications
- It can also cause huge financial loss to clients
- And also lead to fine/penalties for us
- Examples
  - NYSE fined Waterhouse Investor Services US $225,000 for its web site failures - inability to file on-line stock orders and inadequate customer service
  - An AA jet crashed in Colombia because the captain entered an incorrect one-letter computer command that sent the jet into a mountain killing 158 people aboard. When there is critical command, the software could have asked for confirmation or verified or have enough validation before processing the command.
  - Hacker hacked into US government computers, including two agencies within the Defense Department, and defaced government Web sites. It shows the insufficient Security Testing.



1.2: Defect

Legal Implications

- Under a contract, a buyer can sue a company if he/she did not get what he/she paid for or if the software did things it was not supposed to do
- Buyer can also sue for Consequential damages - economic loss or injury to person or property
- Acts like Data Protection Act also safeguard the security rights of the customer

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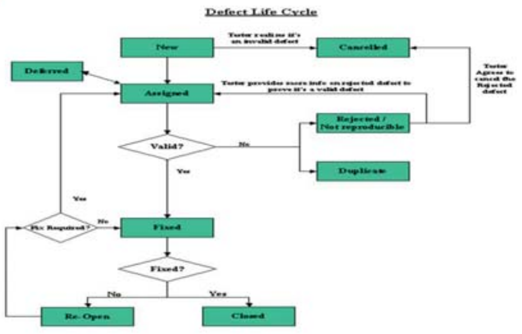
1.2 Defect

Life-cycle workflow


Defect Life Cycle
New
Tester realizes it's an invalid defect
Cancelled
Deferred
Assigned
Tester provides more info on rejected defect to prove it's a valid defect
Tester Agrees to cancel the Rejected defect
Rejected / Not reproducible
Valid?
No
Duplicate
Yes
Yes
Fix Required?
No
Fixed
Fixed?
No
Yes
Re-Open
Closed

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1. **New** – When a Defect is logged and yet to be assigned to a developer. Usually Project Manager or Dev Lead will decide on which defects to be assigned to which developer.

2. **Assigned** – indicates that the developer who would fix the defect has been identified and has started analyzing and working on the defect fix.

3. **Duplicate** – Manager or Developer will update the status of a defect as "Duplicate" if this defect was already reported.

4. **Rejected / Not Reproducible** – This status indicates that the developer is not considering the defect as valid due to following reasons
   a) Not able to reproduce
   b) Not a valid defect and it is as per requirement
   c) Test Data used was invalid
   d) Defect referring to the Requirement has been de-scoped from the current release, tester was not aware of this late changes.

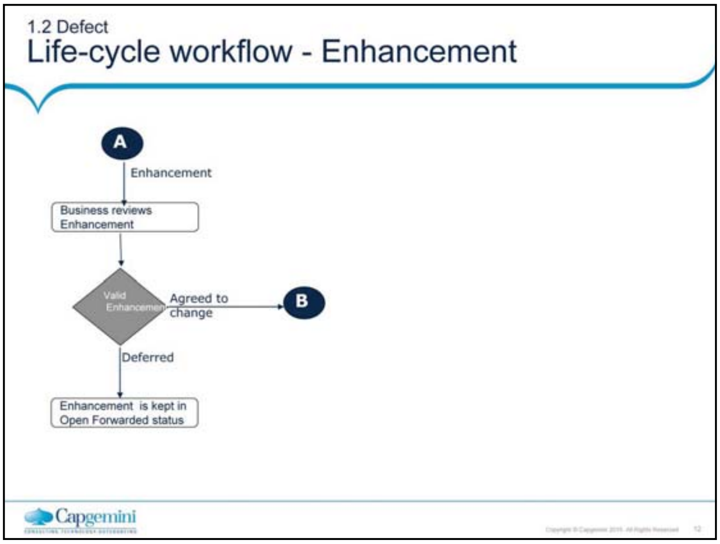
5. **Deferred** – Defect fix has been held back because of time or budget constraints and project team has got approval from customer to defer the defect till next or future release.

6. **Fixed** – Developer has fixed the defect and has unit tested the fix. The code changes are deployed in test environment for verifying the defect fix.

7. **Reopen** – Status is changed to “Reopen” by a tester, when a tester finds the defect is Not fixed or partially fixed. Developer who fixed the defect looks into the comment that was provided by the tester at the time of reopening the defect. Developer will change the status to “Assigned” and starts working on the fix again. Incase the developer wants the tester to re-verify the defect then he/she will add a comment and will change the defect status to “Fixed”.

8. **Closed** – Tester verifies the defects that are in “Fixed” status and once they find the defect is fixed, they change the status to “Closed”. This is the last status of Defect Life Cycle.

9. **Cancelled** – This status indicates that the tester realized that the defect logged by him was invalid and agreed to cancel it.



1.2 Defect
Life-cycle workflow - Enhancement

A
Enhancement
Business reviews Enhancement
Valid Enhancement
Agreed to change
B
Deferred
Enhancement is kept in Open Forwarded status
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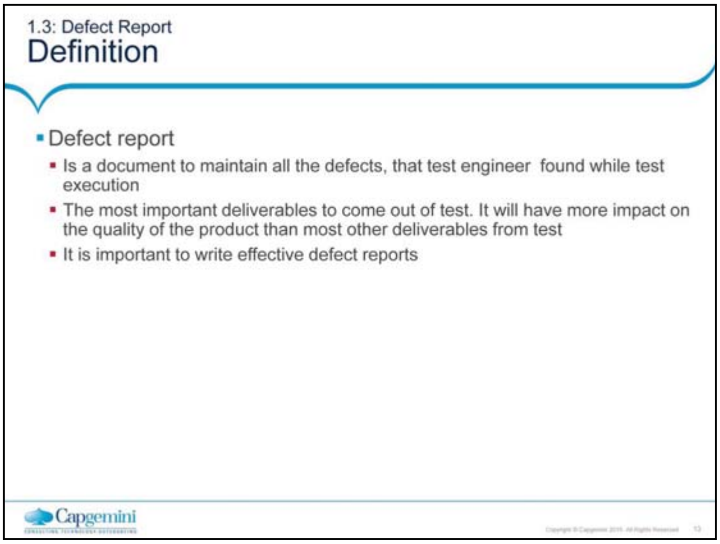
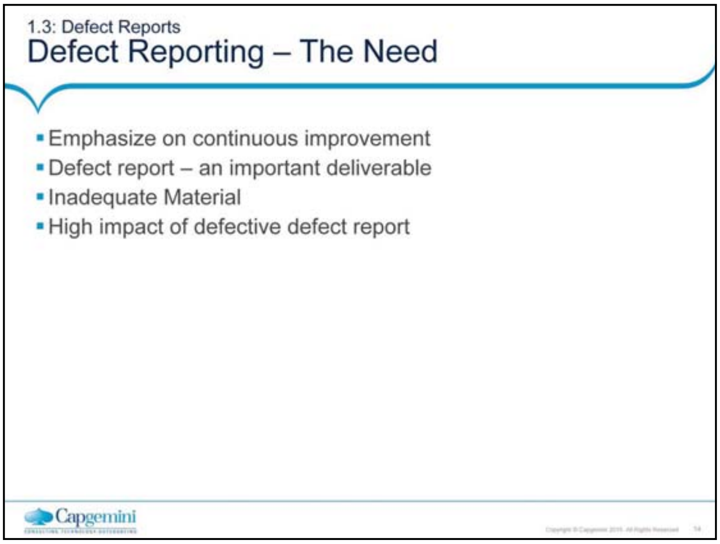


1.3: Defect Report

Definition

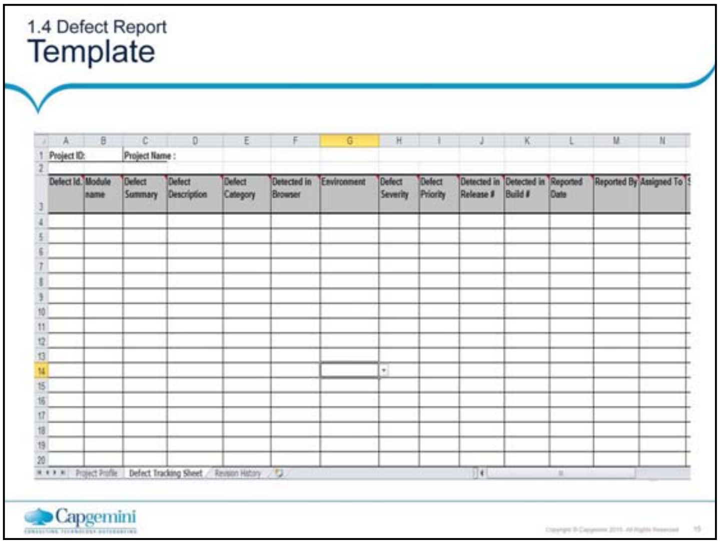
- Defect report
  - Is a document to maintain all the defects, that test engineer found while test execution
  - The most important deliverables to come out of test. It will have more impact on the quality of the product than most other deliverables from test
  - It is important to write effective defect reports



1.3: Defect Reports

Defect Reporting – The Need

- Emphasize on continuous improvement
- Defect report – an important deliverable
- Inadequate Material
- High impact of defective defect report



1.4 Defect Report Template

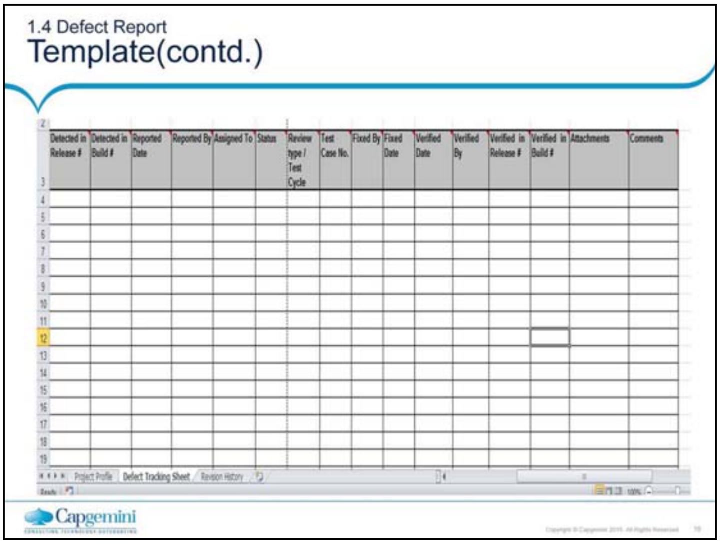
Project ID: Project Name :

Defect Id.	Module name	Defect Summary	Defect Description	Defect Category	Detected in Browser	Environment	Defect Severity	Defect Priority	Detected in Release #	Detected in Build #	Reported Date	Reported By	Assigned To

Project Profile | Defect Tracking Sheet | Revision History

- **Defect ID** - A unique number to each defect. This will help to identify the bug record. If you are using any automated bug-reporting tool then this unique number will be generated automatically each time you report the bug.
- **Module Name-** It will contain the name of the module being tested.
- **Defect Summary-** A short summary of the defect. It can be in 1 or 2 lines.
- **Defect Description**- A detailed description of bug. It includes
    1. Clearly mention the steps to reproduce the bug.
    2. How application should behave on above mentioned steps.
    3. What is the actual result on running above steps i.e. the bug behavior.

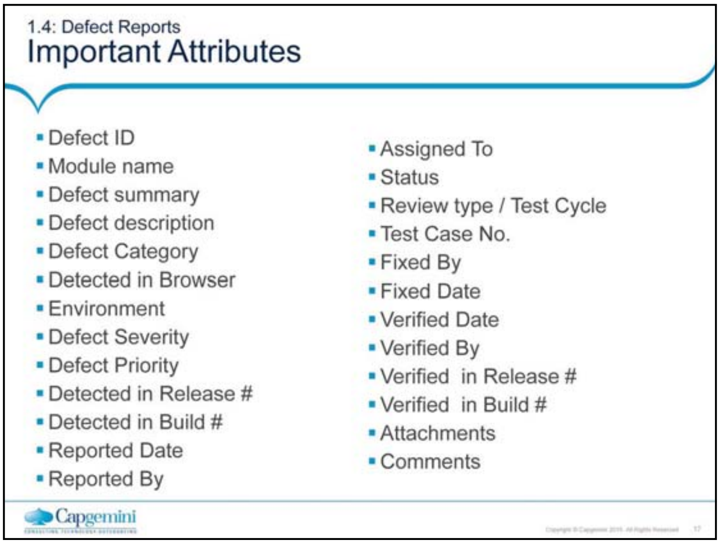
- **Defect Category-** Categorizing the defect into the appropriate category. The categories considered are:
    - Coding: When the defect is found in the code.
    - Design :When the defect is found in the design
    - Enhancement: If the defect stated is actually an enhancement to the present requirement
    - New Requirement :If the defect stated is actually a new requirement
    - Query : is any question or doubt which might be raised by the tester, it need not be an actual defect.
    - Documentation: is any error found in the documents of the application like the help document etc.
    - Master Data: Is any error found in the master data received
    - Test Review: is while doing the testing any review comments which might be suggested by the tester ,again it may not be a defect itself.
    - DO – Documentation related defects
    - This includes all defects related to missing or misstated requirement in Functional specification
    - BD/PK/LD - Build / Package / Load
    - Change management, library, version control.
    - FN/LO (Coding)
    - Function/ Program Logic (Logic, pointers, loops, recursion, computation); Not functioning as per the design / requirement.
    - EN - Environment
    - Environment (Design, compile, test, or other support system problems)
    - OP
    - If the optimal usage is lacking or performance is not up to the mark. Design will adversely affect the product's performance
    - SG – Suggestion
    - If the defect reported is a suggestion.



1.4 Defect Report
Template(contd.)

Detected in Release #	Detected in Build #	Reported Date	Reported By	Assigned To	Status	Review type / Test Cycle	Test Case No.	Fixed By	Fixed Date	Verified Date	Verified By	Verified in Release #	Verified in Build #	Attachments	Comments

- **Detected in Browser :**The name of the browser the defect was found in (IE, Firefox ,etc.)
- **Environment:** Mention the environment where the defect was found. It can be internal Dev,internal QA,External Dev or External QA.
- **Defect Severity :** Impact of the defect on functionality of application. The values it can contain :
  - P0 defect is a defect wherein the main function of the software does not work. e.g. crash, hang, data corruption
  - P1 defect is a defect wherein a function does not work and a tedious work around exists. e.g. One of menu options does not work.
  - P2 defect is a defect wherein the software does useful work but a degree of inconvenience is caused. Correction is not deferrable and easy work around exists.
  - P3 defect is a tolerable defect as corrections are deferrable. E.g. cosmetic problems in user interface like spelling.
  - “High” severity defect is a defect wherein the main function of the software does not work. e.g. crash, hang, data corruption, some of the menu functions do not work
  - “Medium” severity defect is a defect wherein the software does useful work but a degree of inconvenience is caused. Correction is not deferrable and easy work around exists.
  - “Low” severity defect is a tolerable defect as corrections are deferrable. E.g. cosmetic problems in user interface like spelling.

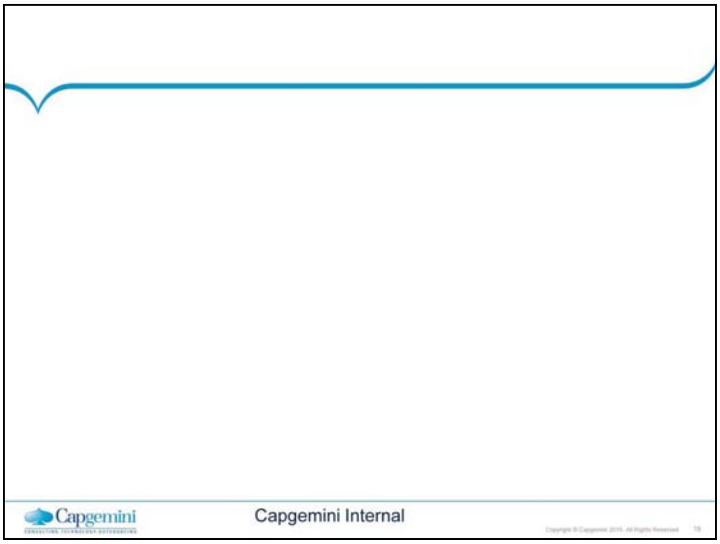


1.4: Defect Reports

Important Attributes

- Defect ID
- Module name
- Defect summary
- Defect description
- Defect Category
- Detected in Browser
- Environment
- Defect Severity
- Defect Priority
- Detected in Release #
- Detected in Build #
- Reported Date
- Reported By
- Assigned To
- Status
- Review type / Test Cycle
- Test Case No.
- Fixed By
- Fixed Date
- Verified Date
- Verified By
- Verified in Release #
- Verified in Build #
- Attachments
- Comments

- **Priority** – It indicates When bug should be fixed? The values are low, medium and high
  - High - This bug should be resolved as soon as possible in the normal course of development activity, before the software is released.
  - Medium - This bug should be repaired after serious Defects have been fixed.
  - Low - It can be resolved in a future major system revision or not be resolved at all.
- **Detected in Release #** : Denotes the Release # in which the defect was detected.
- **Detected in Build #:** Denotes the Build # in which the defect was detected.
- **Reported Date:** The date on which the defect was reported. It need not be same as the date on which it was detected.
- **Reported By:** Name of the person who reported the defect.
- **Assigned To:** Name of the person the defect is assigned to , to fix it.
- **Status:** Gives the status of the defect. It can contain the following values
  - Verified
  - Closed
  - Fixed
  - Active
  - CNR-Could Not be Reproduced
  - NOD: reported bug Not a Defect
  - REP: Repeated bug
- **Review type / Test Cycle:** It can contain following values:
  - PPR-Peer to Peer Review
  - PR-Peer Review
  - SR-Self/Programmer Review
  - QPR-10% Quality Probe(Review)
  - RT-Random Testing
  - UTC-Using Test Cases



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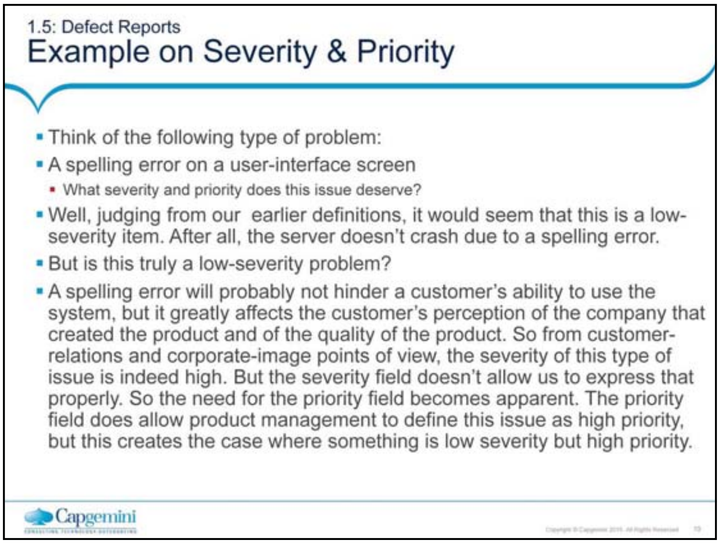
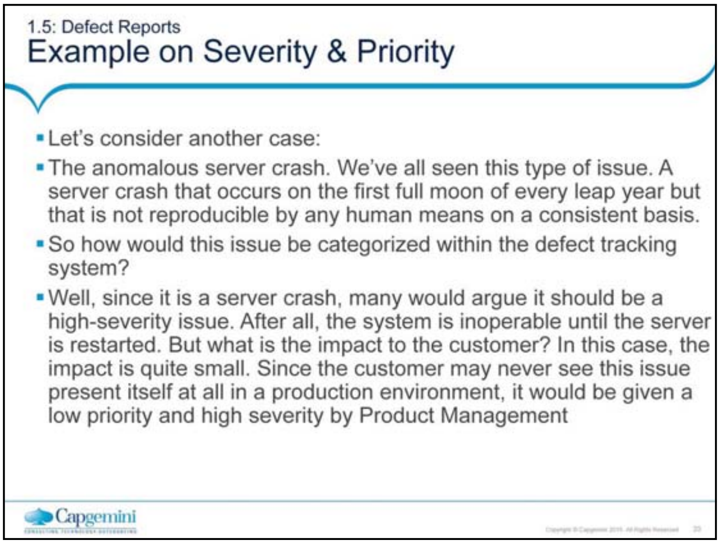
- **Test Case No:** Mention the test case No that the defect was found while testing
- **Fixed By:** Name of the person who fixed the defect
- **Fixed Date:** Date on which the defect was fixed
- **Verified Date:** Date on which the defect was verified
- **Verified By:** Name of the person who will be verifying whether the defect has got fixed after the defect is being worked upon
- **Verified in Release #:** Denotes the Release # in which the defect was verified
- **Verified in Build # :**Denotes the Build # in which the defect was verified
- **Attachments:** Attach the proofs showing the defect- screenshots, temp files, etc.
- **Comments:** Should include all the comments made by all touching the defect on the defects till date .It should be captured date wise.



1.5: Defect Reports

Example on Severity & Priority

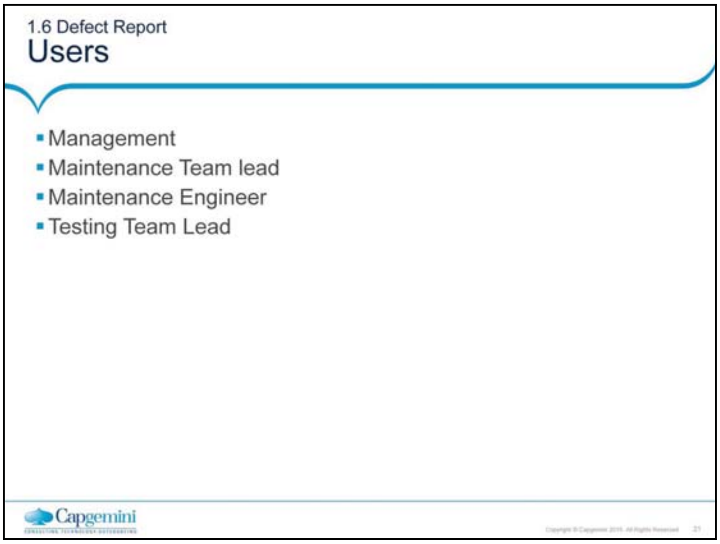
- Think of the following type of problem:
- A spelling error on a user-interface screen
  - What severity and priority does this issue deserve?
- Well, judging from our earlier definitions, it would seem that this is a low-severity item. After all, the server doesn't crash due to a spelling error.
- But is this truly a low-severity problem?
- A spelling error will probably not hinder a customer's ability to use the system, but it greatly affects the customer's perception of the company that created the product and of the quality of the product. So from customer-relations and corporate-image points of view, the severity of this type of issue is indeed high. But the severity field doesn't allow us to express that properly. So the need for the priority field becomes apparent. The priority field does allow product management to define this issue as high priority, but this creates the case where something is low severity but high priority.



1.5: Defect Reports

Example on Severity & Priority

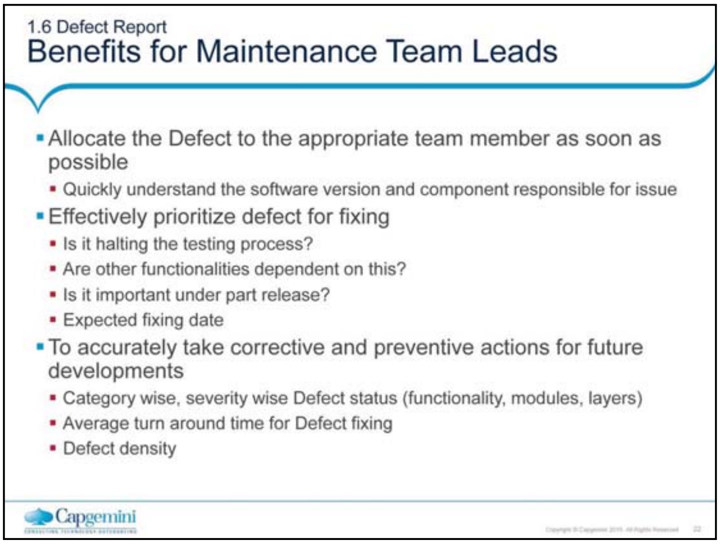
- Let's consider another case:
- The anomalous server crash. We've all seen this type of issue. A server crash that occurs on the first full moon of every leap year but that is not reproducible by any human means on a consistent basis.
- So how would this issue be categorized within the defect tracking system?
- Well, since it is a server crash, many would argue it should be a high-severity issue. After all, the system is inoperable until the server is restarted. But what is the impact to the customer? In this case, the impact is quite small. Since the customer may never see this issue present itself at all in a production environment, it would be given a low priority and high severity by Product Management



1.6 Defect Report

Users

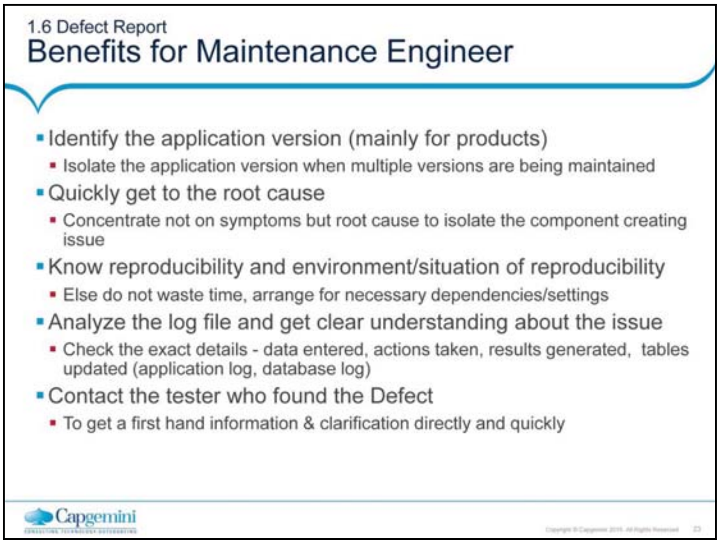
- Management
- Maintenance Team lead
- Maintenance Engineer
- Testing Team Lead



1.6 Defect Report

Benefits for Maintenance Team Leads

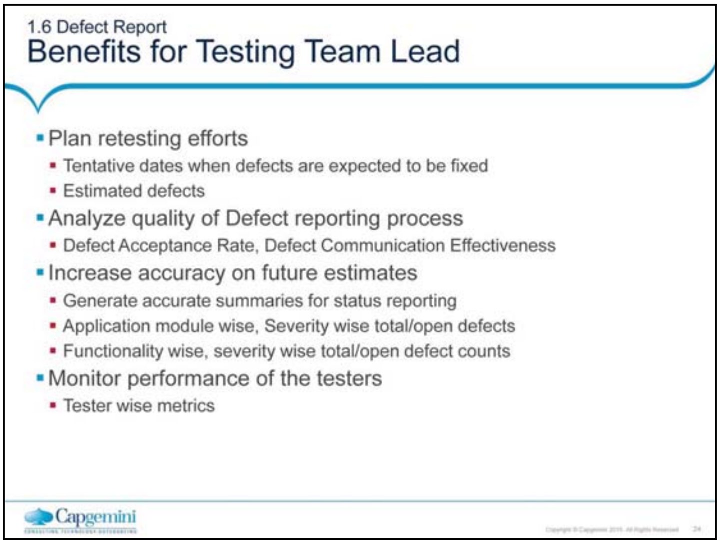
- Allocate the Defect to the appropriate team member as soon as possible
  - Quickly understand the software version and component responsible for issue
- Effectively prioritize defect for fixing
  - Is it halting the testing process?
  - Are other functionalities dependent on this?
  - Is it important under part release?
  - Expected fixing date
- To accurately take corrective and preventive actions for future developments
  - Category wise, severity wise Defect status (functionality, modules, layers)
  - Average turn around time for Defect fixing
  - Defect density



1.6 Defect Report

Benefits for Maintenance Engineer

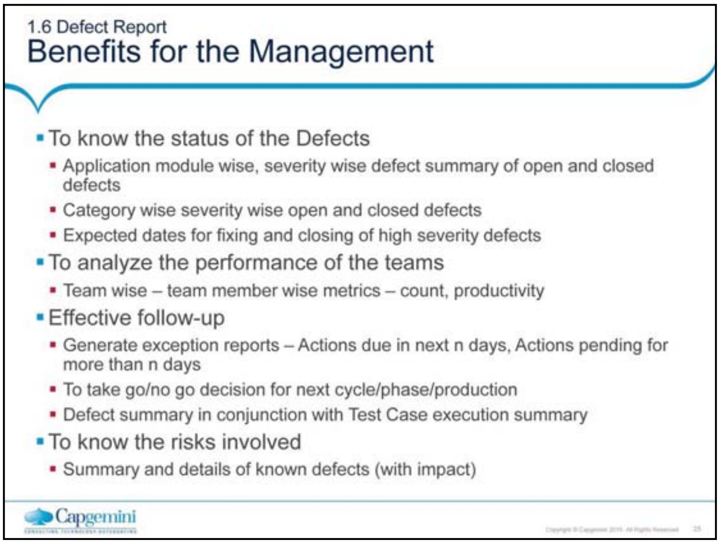
- Identify the application version (mainly for products)
  - Isolate the application version when multiple versions are being maintained
- Quickly get to the root cause
  - Concentrate not on symptoms but root cause to isolate the component creating issue
- Know reproducibility and environment/situation of reproducibility
  - Else do not waste time, arrange for necessary dependencies/settings
- Analyze the log file and get clear understanding about the issue
  - Check the exact details - data entered, actions taken, results generated, tables updated (application log, database log)
- Contact the tester who found the Defect
  - To get a first hand information & clarification directly and quickly



1.6 Defect Report

Benefits for Testing Team Lead

- Plan retesting efforts
  - Tentative dates when defects are expected to be fixed
  - Estimated defects
- Analyze quality of Defect reporting process
  - Defect Acceptance Rate, Defect Communication Effectiveness
- Increase accuracy on future estimates
  - Generate accurate summaries for status reporting
  - Application module wise, Severity wise total/open defects
  - Functionality wise, severity wise total/open defect counts
- Monitor performance of the testers
  - Tester wise metrics



1.6 Defect Report

Benefits for the Management

- To know the status of the Defects
  - Application module wise, severity wise defect summary of open and closed defects
  - Category wise severity wise open and closed defects
  - Expected dates for fixing and closing of high severity defects
- To analyze the performance of the teams
  - Team wise – team member wise metrics – count, productivity
- Effective follow-up
  - Generate exception reports – Actions due in next n days, Actions pending for more than n days
  - To take go/no go decision for next cycle/phase/production
  - Defect summary in conjunction with Test Case execution summary
- To know the risks involved
  - Summary and details of known defects (with impact)

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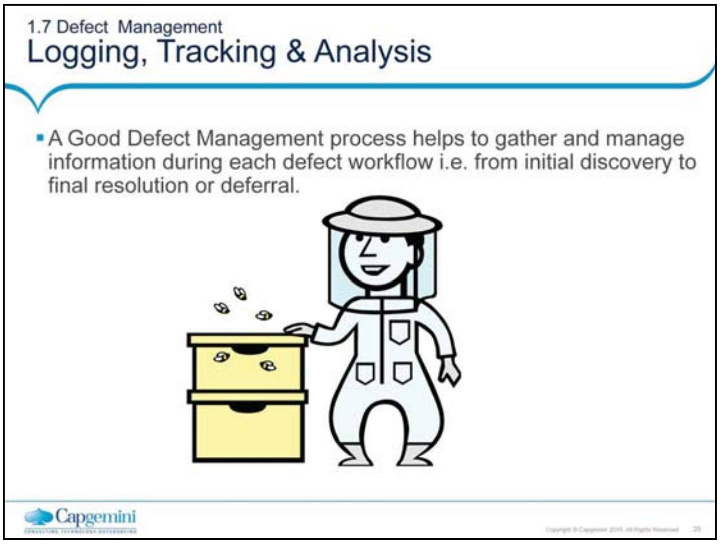
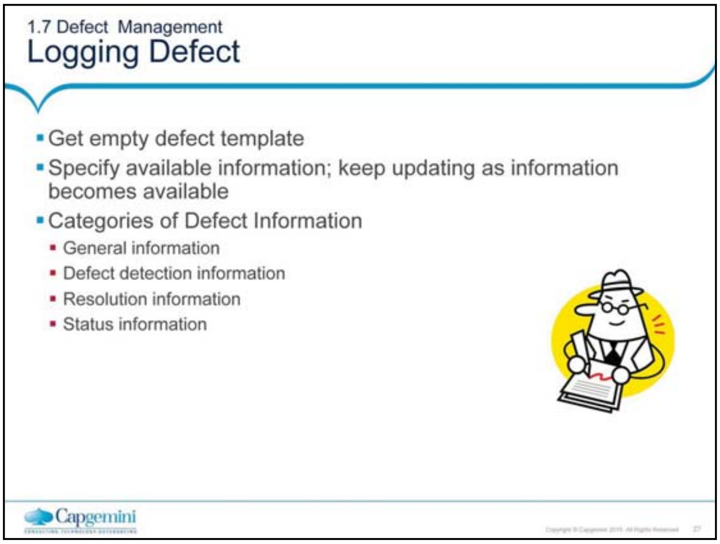


1.7 Defect Management

Logging, Tracking & Analysis

- A Good Defect Management process helps to gather and manage information during each defect workflow i.e. from initial discovery to final resolution or deferral.



1.7 Defect Management

Logging Defect

- Get empty defect template
- Specify available information; keep updating as information becomes available
- Categories of Defect Information
  - General information
  - Defect detection information
  - Resolution information
  - Status information

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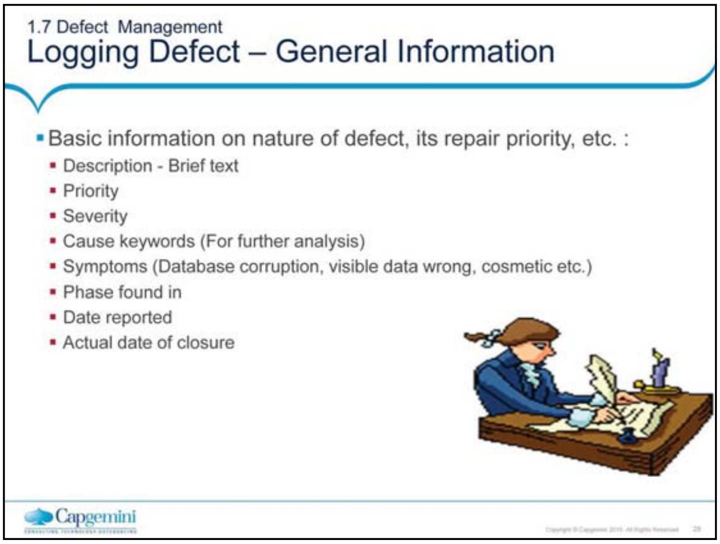
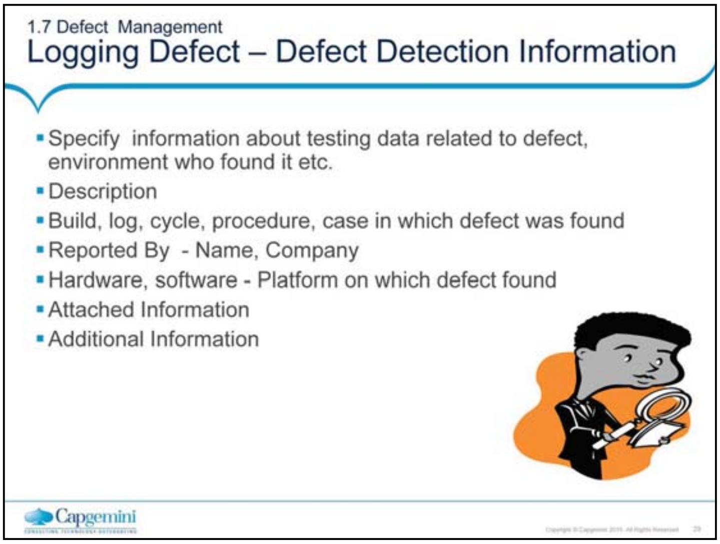


1.7 Defect Management

Logging Defect – General Information

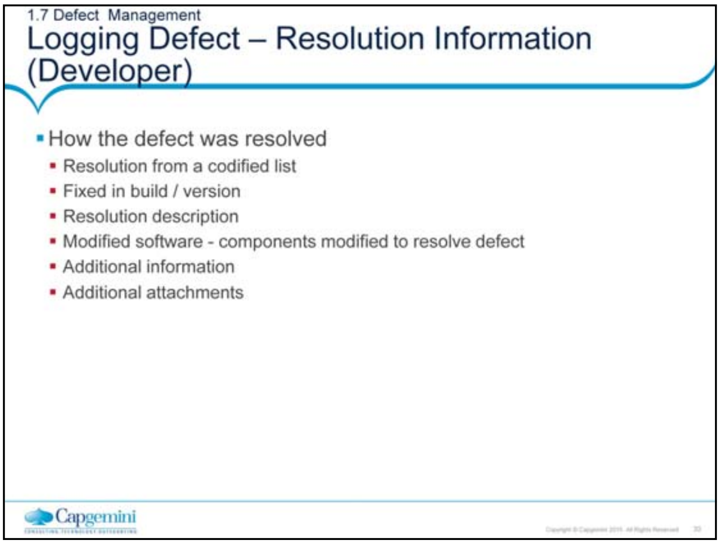
- Basic information on nature of defect, its repair priority, etc. :
  - Description - Brief text
  - Priority
  - Severity
  - Cause keywords (For further analysis)
  - Symptoms (Database corruption, visible data wrong, cosmetic etc.)
  - Phase found in
  - Date reported
  - Actual date of closure



1.7 Defect Management

Logging Defect – Defect Detection Information

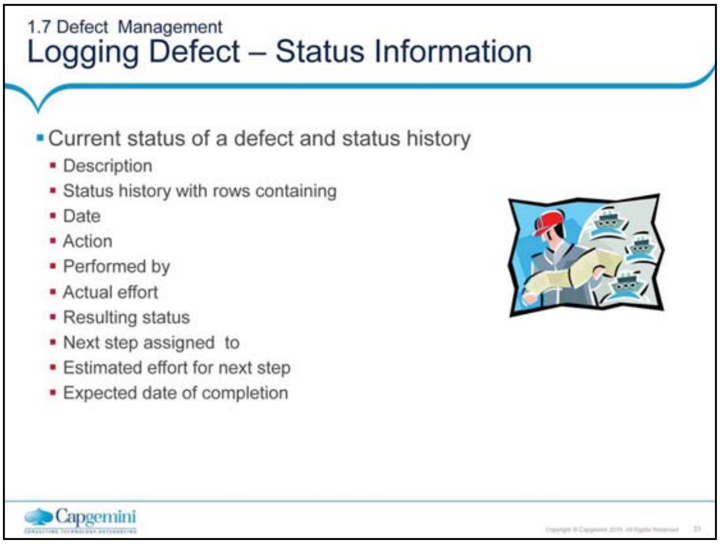
- Specify information about testing data related to defect, environment who found it etc.
- Description
- Build, log, cycle, procedure, case in which defect was found
- Reported By - Name, Company
- Hardware, software - Platform on which defect found
- Attached Information
- Additional Information



1.7 Defect Management

Logging Defect – Resolution Information (Developer)

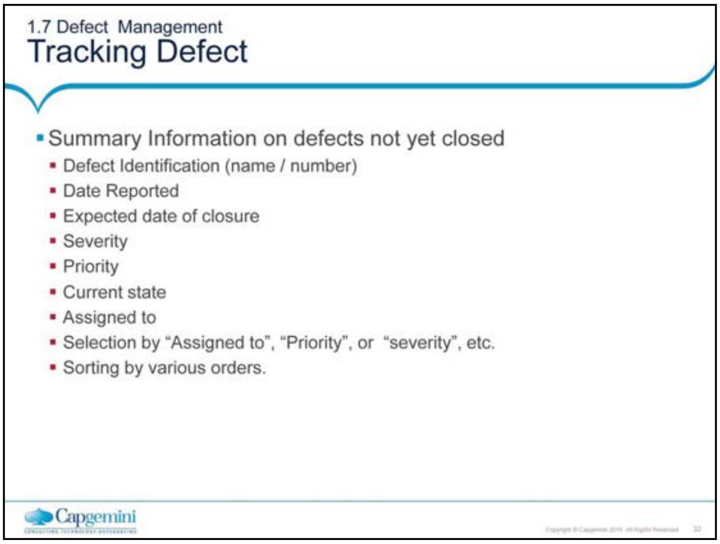
- How the defect was resolved
  - Resolution from a codified list
  - Fixed in build / version
  - Resolution description
  - Modified software - components modified to resolve defect
  - Additional information
  - Additional attachments



1.7 Defect Management

Logging Defect – Status Information

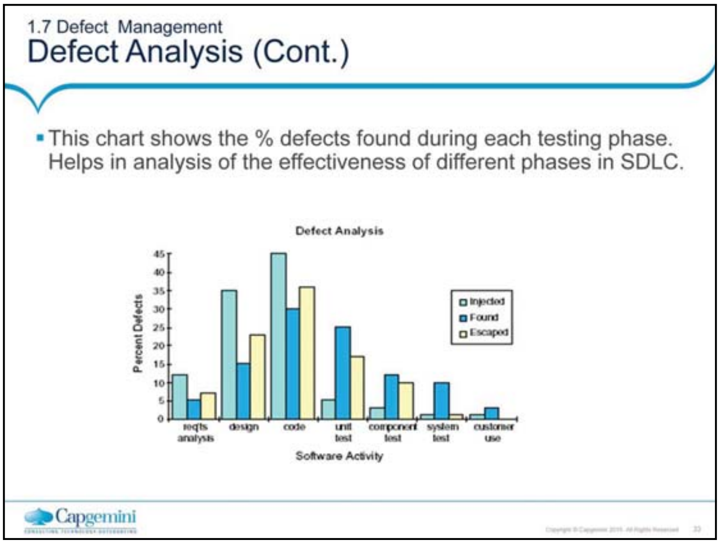
- Current status of a defect and status history
  - Description
  - Status history with rows containing
  - Date
  - Action
  - Performed by
  - Actual effort
  - Resulting status
  - Next step assigned to
  - Estimated effort for next step
  - Expected date of completion



1.7 Defect Management

Tracking Defect

- Summary Information on defects not yet closed
  - Defect Identification (name / number)
  - Date Reported
  - Expected date of closure
  - Severity
  - Priority
  - Current state
  - Assigned to
  - Selection by “Assigned to”, “Priority”, or “severity”, etc.
  - Sorting by various orders.



1.7 Defect Management

Defect Analysis (Cont.)

- This chart shows the % defects found during each testing phase. Helps in analysis of the effectiveness of different phases in SDLC.

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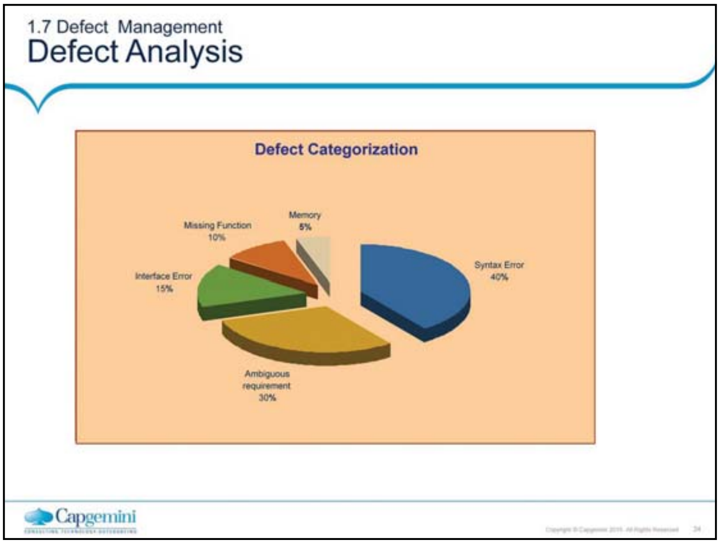
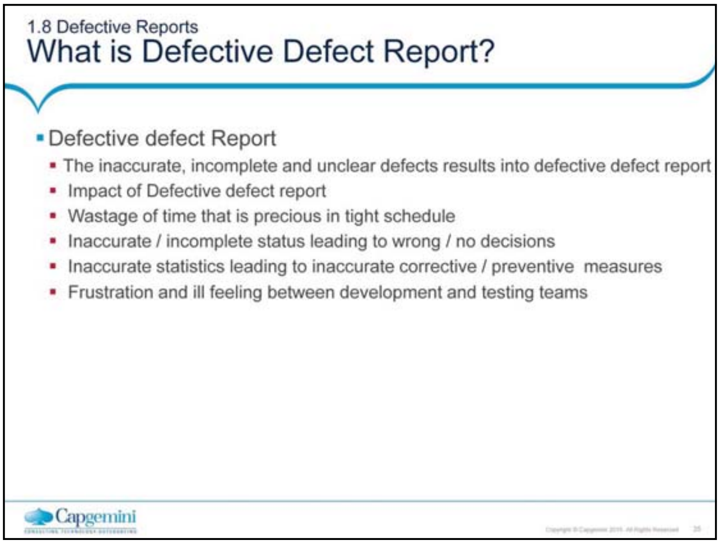


1.7 Defect Management

Defect Analysis



1.8 Defective Reports

What is Defective Defect Report?

- Defective defect Report
  - The inaccurate, incomplete and unclear defects results into defective defect report
  - Impact of Defective defect report
  - Wastage of time that is precious in tight schedule
  - Inaccurate / incomplete status leading to wrong / no decisions
  - Inaccurate statistics leading to inaccurate corrective / preventive measures
  - Frustration and ill feeling between development and testing teams

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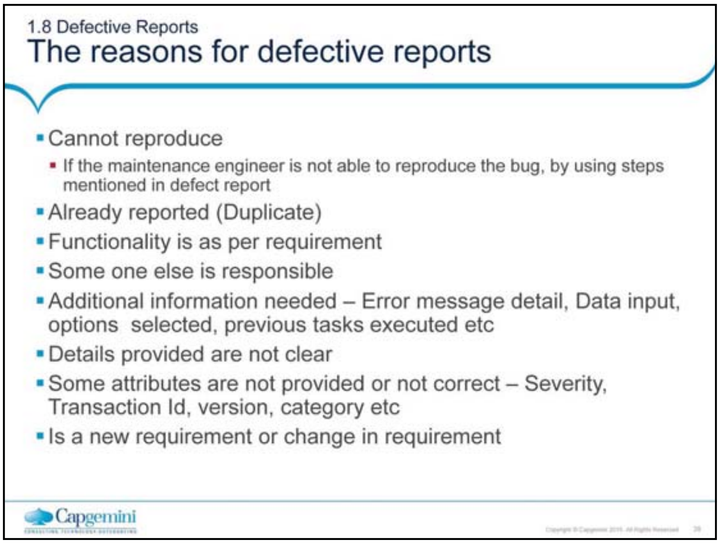
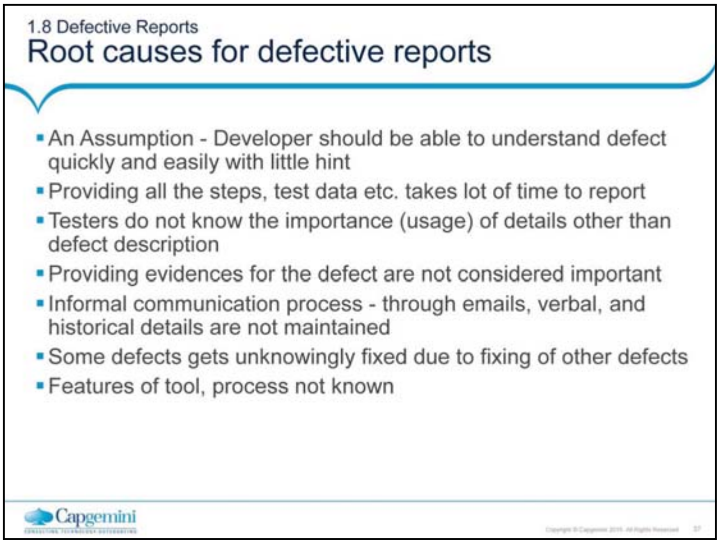


1.8 Defective Reports

The reasons for defective reports

- Cannot reproduce
  - If the maintenance engineer is not able to reproduce the bug, by using steps mentioned in defect report
- Already reported (Duplicate)
- Functionality is as per requirement
- Some one else is responsible
- Additional information needed – Error message detail, Data input, options selected, previous tasks executed etc
- Details provided are not clear
- Some attributes are not provided or not correct – Severity, Transaction Id, version, category etc
- Is a new requirement or change in requirement

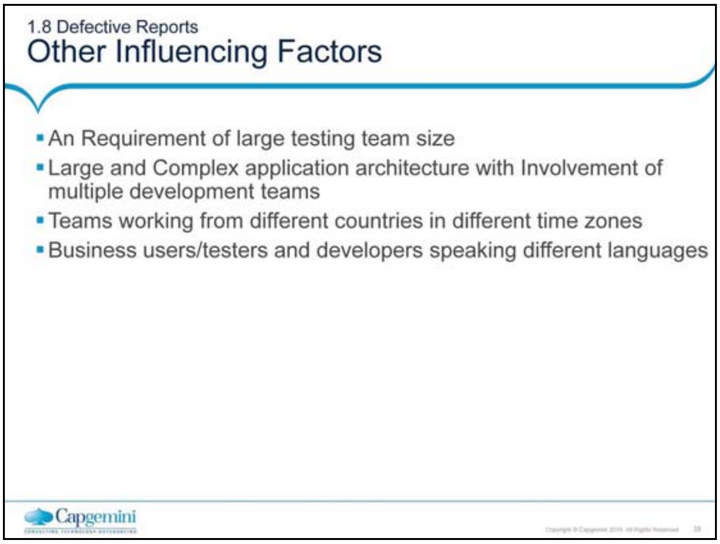
For all above reasons the developer will change the status of the bug as rejected.



1.8 Defective Reports

Root causes for defective reports

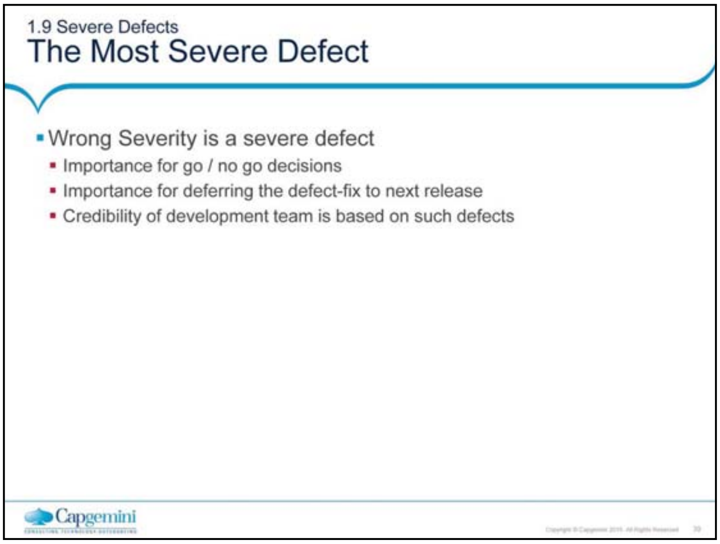
- An Assumption - Developer should be able to understand defect quickly and easily with little hint
- Providing all the steps, test data etc. takes lot of time to report
- Testers do not know the importance (usage) of details other than defect description
- Providing evidences for the defect are not considered important
- Informal communication process - through emails, verbal, and historical details are not maintained
- Some defects gets unknowingly fixed due to fixing of other defects
- Features of tool, process not known



1.8 Defective Reports

Other Influencing Factors

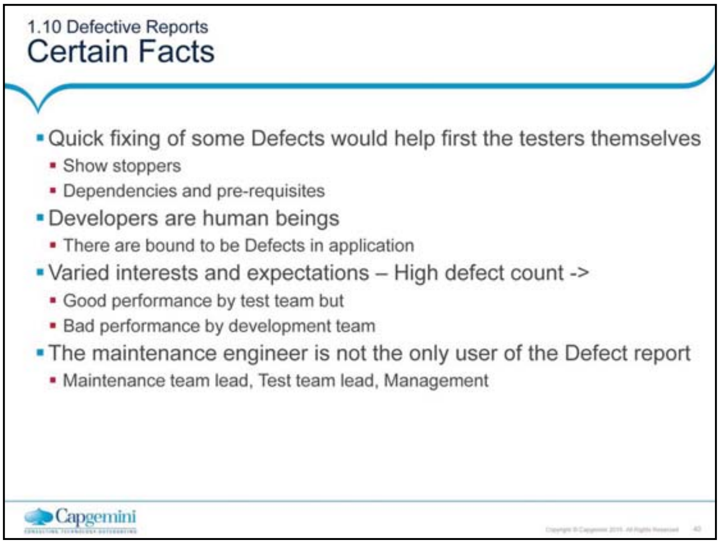
- An Requirement of large testing team size
- Large and Complex application architecture with Involvement of multiple development teams
- Teams working from different countries in different time zones
- Business users/testers and developers speaking different languages



1.9 Severe Defects

The Most Severe Defect

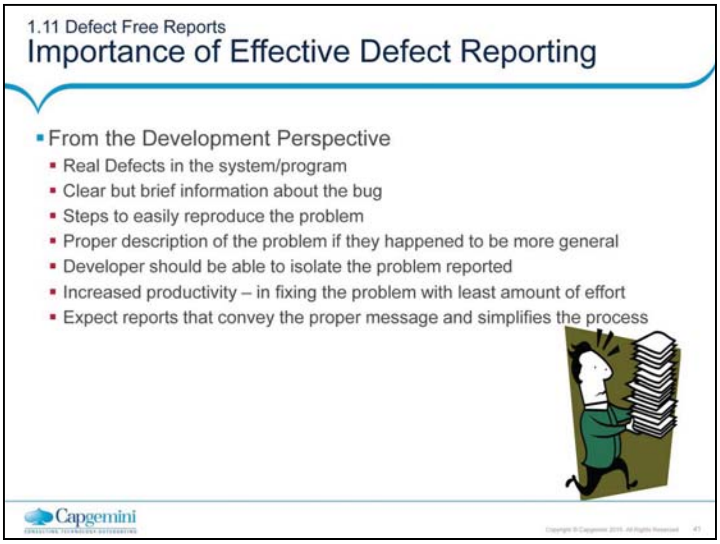
- Wrong Severity is a severe defect
  - Importance for go / no go decisions
  - Importance for deferring the defect-fix to next release
  - Credibility of development team is based on such defects



1.10 Defective Reports

Certain Facts

- Quick fixing of some Defects would help first the testers themselves
  - Show stoppers
  - Dependencies and pre-requisites
- Developers are human beings
  - There are bound to be Defects in application
- Varied interests and expectations – High defect count ->
  - Good performance by test team but
  - Bad performance by development team
- The maintenance engineer is not the only user of the Defect report
  - Maintenance team lead, Test team lead, Management



1.11 Defect Free Reports

Importance of Effective Defect Reporting

- From the Development Perspective
  - Real Defects in the system/program
  - Clear but brief information about the bug
  - Steps to easily reproduce the problem
  - Proper description of the problem if they happened to be more general
  - Developer should be able to isolate the problem reported
  - Increased productivity – in fixing the problem with least amount of effort
  - Expect reports that convey the proper message and simplifies the process

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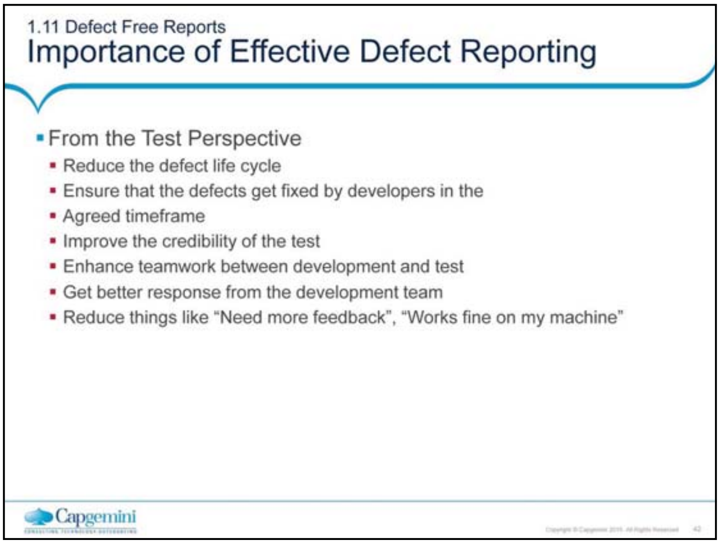
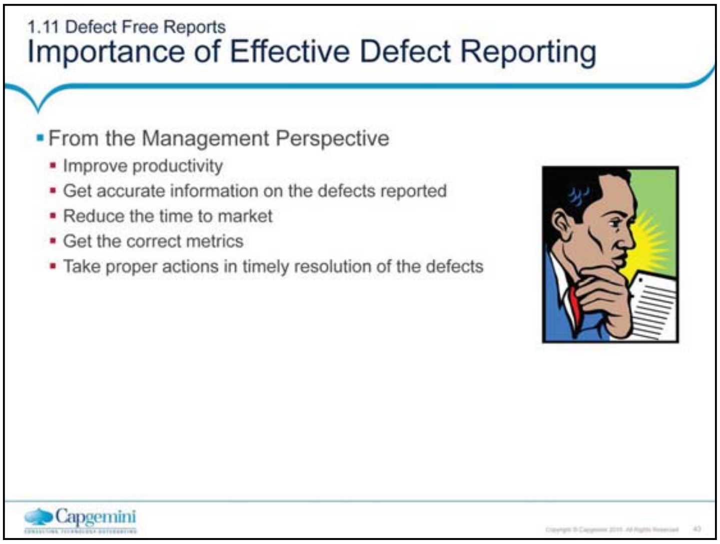


1.11 Defect Free Reports

Importance of Effective Defect Reporting

- From the Test Perspective
  - Reduce the defect life cycle
  - Ensure that the defects get fixed by developers in the
  - Agreed timeframe
  - Improve the credibility of the test
  - Enhance teamwork between development and test
  - Get better response from the development team
  - Reduce things like "Need more feedback", "Works fine on my machine"



1.11 Defect Free Reports

Importance of Effective Defect Reporting

- From the Management Perspective
  - Improve productivity
  - Get accurate information on the defects reported
  - Reduce the time to market
  - Get the correct metrics
  - Take proper actions in timely resolution of the defects

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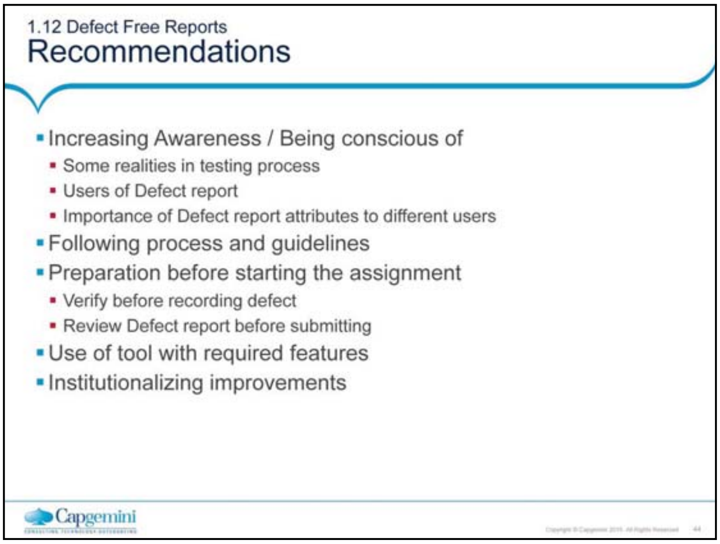
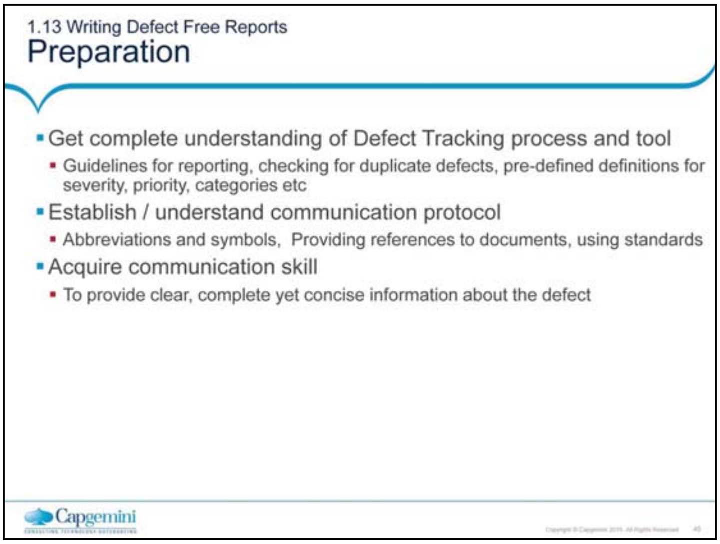


1.12 Defect Free Reports

Recommendations

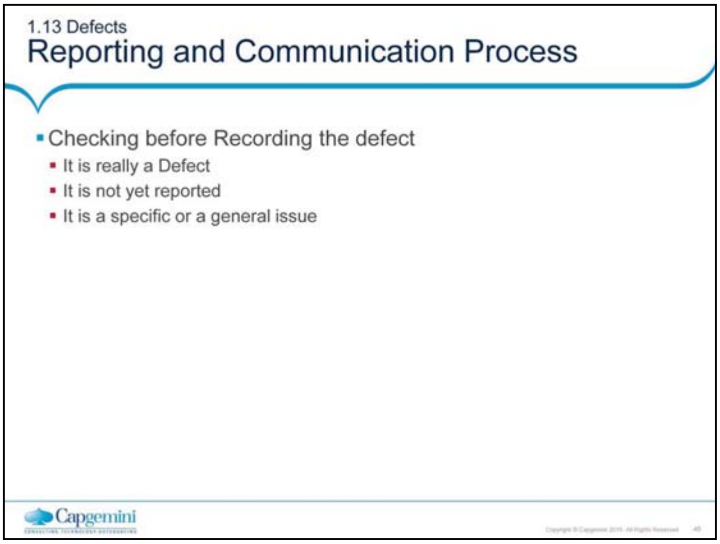
- Increasing Awareness / Being conscious of
  - Some realities in testing process
  - Users of Defect report
  - Importance of Defect report attributes to different users
- Following process and guidelines
- Preparation before starting the assignment
  - Verify before recording defect
  - Review Defect report before submitting
- Use of tool with required features
- Institutionalizing improvements



1.13 Writing Defect Free Reports

Preparation

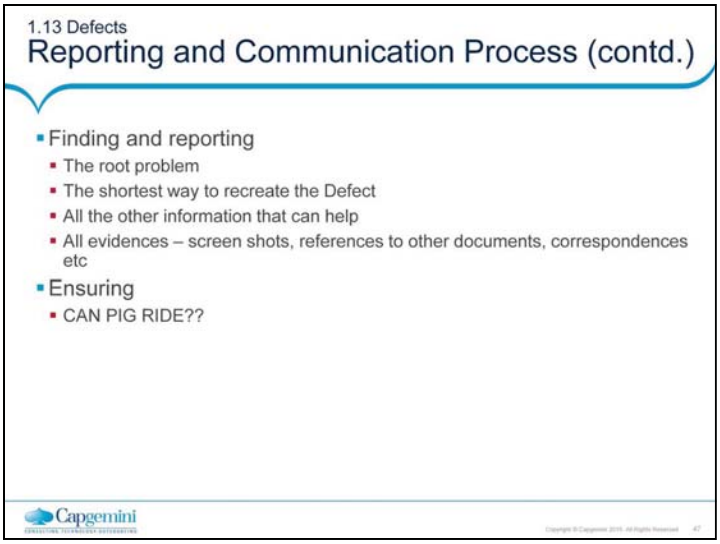
- Get complete understanding of Defect Tracking process and tool
  - Guidelines for reporting, checking for duplicate defects, pre-defined definitions for severity, priority, categories etc
- Establish / understand communication protocol
  - Abbreviations and symbols, Providing references to documents, using standards
- Acquire communication skill
  - To provide clear, complete yet concise information about the defect



1.13 Defects

Reporting and Communication Process

- Checking before Recording the defect
  - It is really a Defect
  - It is not yet reported
  - It is a specific or a general issue

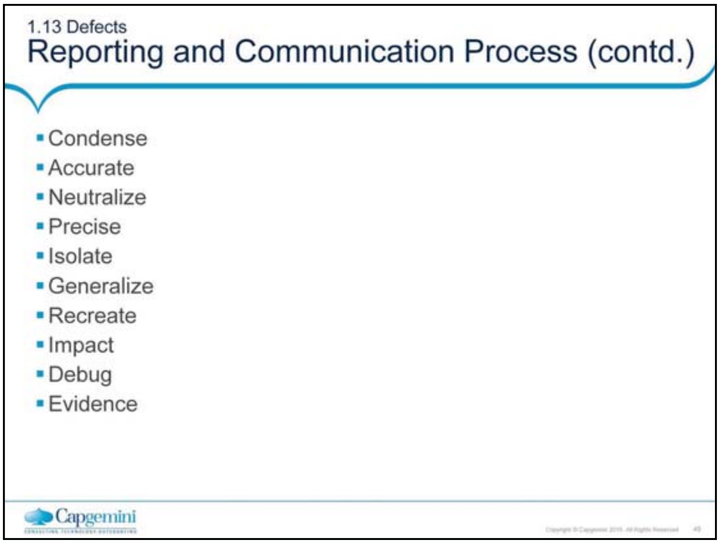


1.13 Defects

Reporting and Communication Process (contd.)

- Finding and reporting
  - The root problem
  - The shortest way to recreate the Defect
  - All the other information that can help
  - All evidences – screen shots, references to other documents, correspondences etc
- Ensuring
  - CAN PIG RIDE??

When in doubt report the defect - Primary objective is to get as less defects (if possible no defects) in production and not high Defect Acceptance Rate



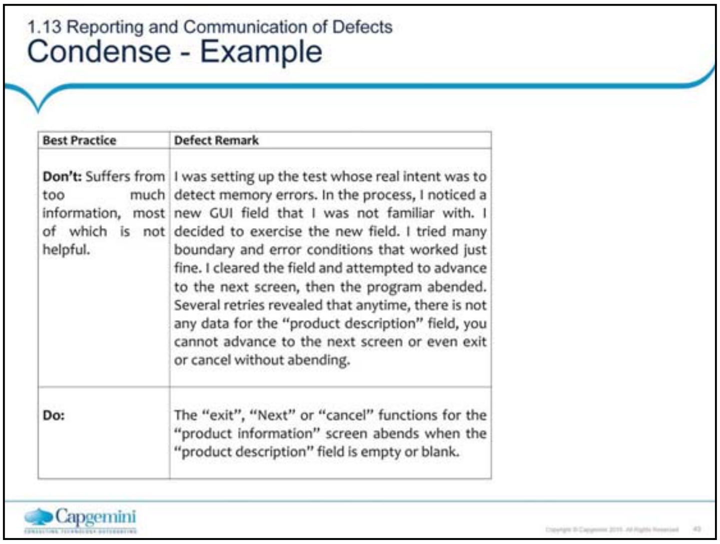
1.13 Defects

Reporting and Communication Process (contd.)

- Condense
- Accurate
- Neutralize
- Precise
- Isolate
- Generalize
- Recreate
- Impact
- Debug
- Evidence

Key points to make sure the next defect report you write is an effective one.
1. **Condense** - Say it clearly but briefly
2. **Accurate** - Is it a defect or could it be user error, misunderstanding, etc.?
3. **Neutralize** - Just the facts. No zingers. No humor. No emotion.
4. **Precise** - Explicitly, what is the problem?
5. **Isolate** - What has been done to isolate the problem?
6. **Generalize** - What has been done to understand how general the problem is?
7. **Re-create** - What are the essentials in triggering/re-creating this problem? (environment, steps, conditions)
8. **Impact** - What is the impact to the customer? What is the impact to test?
9. **Debug** - What does development need to make it easier to debug? (traces, dumps, logs, immediate access, etc.)
10. **Evidence** - What documentation will prove the existence of the error?

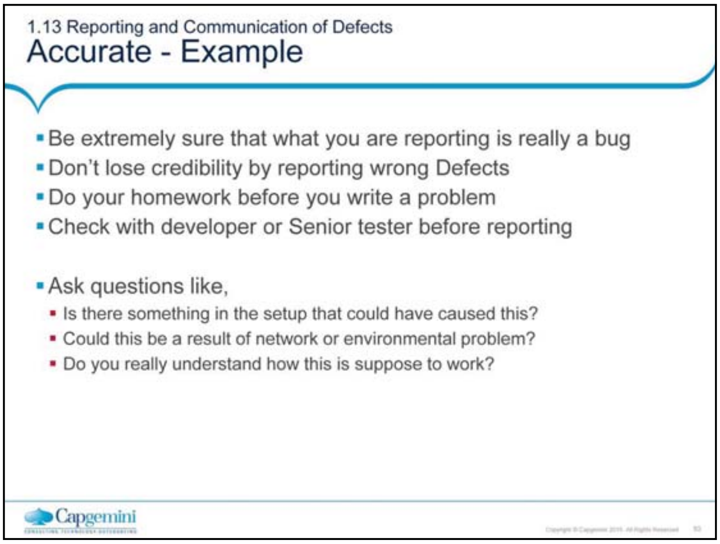
It is key to make sure that you have covered the essential items that will be of most benefit to the users of the defect report.



1.13 Reporting and Communication of Defects

Condense - Example

Best Practice	Defect Remark
Don't: Suffers from too much information, most of which is not helpful.	I was setting up the test whose real intent was to detect memory errors. In the process, I noticed a new GUI field that I was not familiar with. I decided to exercise the new field. I tried many boundary and error conditions that worked just fine. I cleared the field and attempted to advance to the next screen, then the program abended. Several retries revealed that anytime, there is not any data for the "product description" field, you cannot advance to the next screen or even exit or cancel without abending.
Do:	The "exit", "Next" or "cancel" functions for the "product information" screen abends when the "product description" field is empty or blank.



1.13 Reporting and Communication of Defects

Accurate - Example

- Be extremely sure that what you are reporting is really a bug
- Don’t lose credibility by reporting wrong Defects
- Do your homework before you write a problem
- Check with developer or Senior tester before reporting

- Ask questions like,
  - Is there something in the setup that could have caused this?
  - Could this be a result of network or environmental problem?
  - Do you really understand how this is suppose to work?

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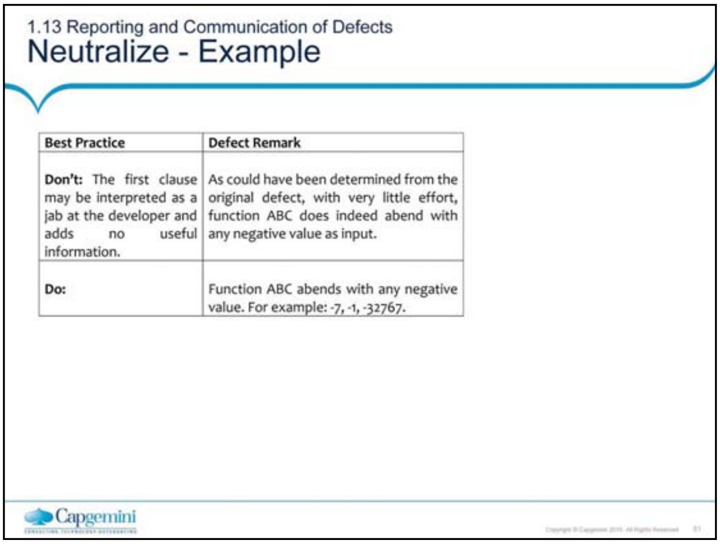
Check with developer or senior tester before reporting.

Don't be afraid to report problems. Do your best to ensure they are valid problems.

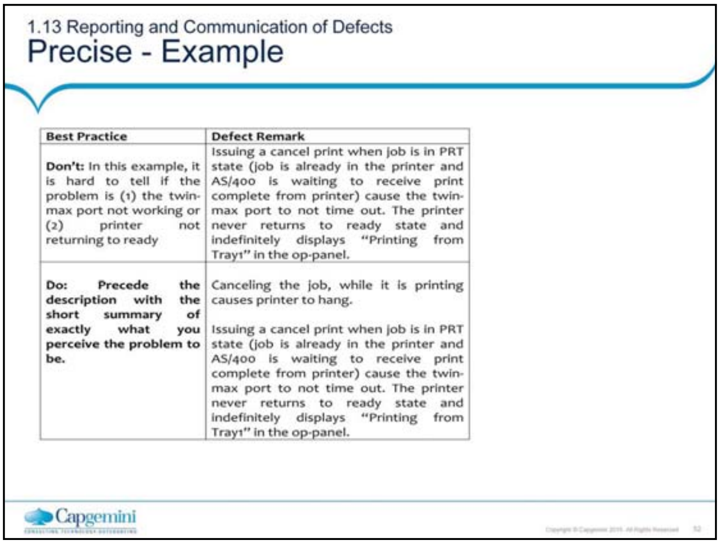


1.13 Reporting and Communication of Defects

Neutralize - Example

Best Practice	Defect Remark
Don't: The first clause may be interpreted as a jab at the developer and adds no useful information.	As could have been determined from the original defect, with very little effort, function ABC does indeed abend with any negative value as input.
Do:	Function ABC abends with any negative value. For example: -7, -1, -32767.

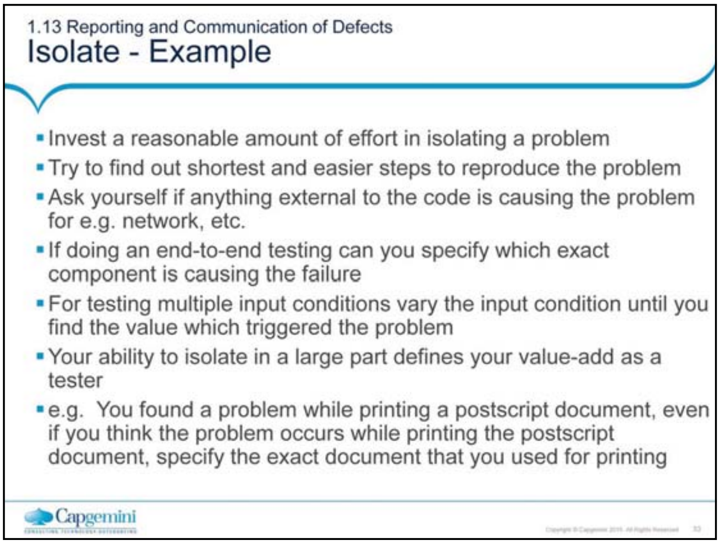
1. State the problem Objectively
2. Don't use humor or emotionally charged zingers.
3. Even if defects are rejected provide more information which will be helpful to the developer. This will help in credibility in the long run. Even if defects are returned back provide more information that will be helpful to the developer. This added bit of professionalism will give you respect and credibility in the long run
4. What you think funny may not be interpreted funny by the developer who is working overtime and is stressed with deadlines. They just create barriers to communication and teamwork.



1.13 Reporting and Communication of Defects

Precise - Example

Best Practice	Defect Remark
Don't: In this example, it is hard to tell if the problem is (1) the twin-max port not working or (2) printer not returning to ready	Issuing a cancel print when job is in PRT state (job is already in the printer and AS/400 is waiting to receive print complete from printer) cause the twin-max port to not time out. The printer never returns to ready state and indefinitely displays "Printing from Tray1" in the op-panel.
Do: Precede the description with the short summary of exactly what you perceive the problem to be.	Canceling the job, while it is printing causes printer to hang. Issuing a cancel print when job is in PRT state (job is already in the printer and AS/400 is waiting to receive print complete from printer) cause the twin-max port to not time out. The printer never returns to ready state and indefinitely displays "Printing from Tray1" in the op-panel.



1.13 Reporting and Communication of Defects

Isolate - Example

- Invest a reasonable amount of effort in isolating a problem
- Try to find out shortest and easier steps to reproduce the problem
- Ask yourself if anything external to the code is causing the problem for e.g. network, etc.
- If doing an end-to-end testing can you specify which exact component is causing the failure
- For testing multiple input conditions vary the input condition until you find the value which triggered the problem
- Your ability to isolate in a large part defines your value-add as a tester
- e.g. You found a problem while printing a postscript document, even if you think the problem occurs while printing the postscript document, specify the exact document that you used for printing

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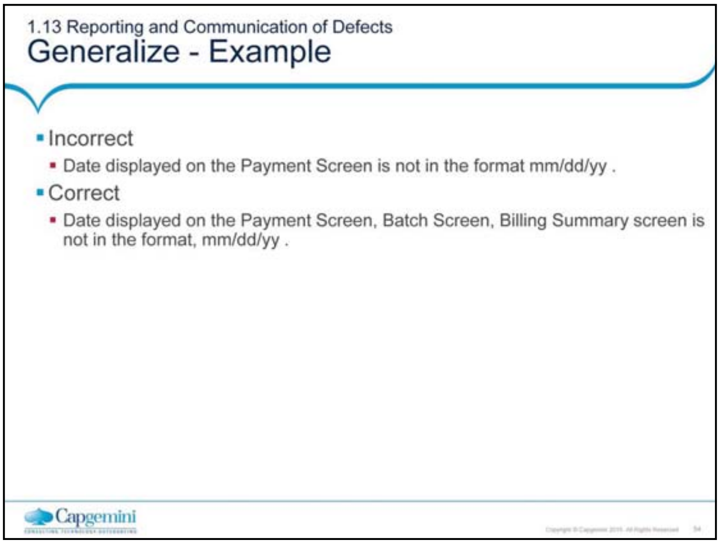
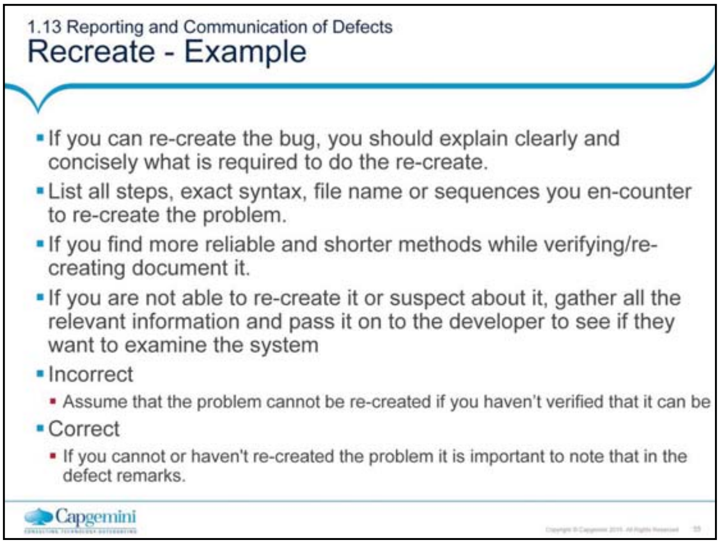


1.13 Reporting and Communication of Defects

Generalize - Example

- Incorrect
  - Date displayed on the Payment Screen is not in the format mm/dd/yy .
- Correct
  - Date displayed on the Payment Screen, Batch Screen, Billing Summary screen is not in the format, mm/dd/yy .

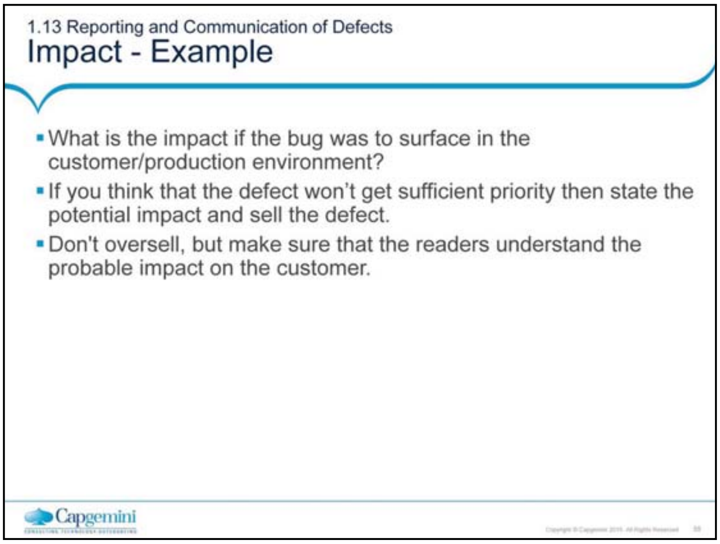
Fixes are made often as per the problem is reported.
Identify if its a more general problem and needs a generic fix.



1.13 Reporting and Communication of Defects

Recreate - Example

- If you can re-create the bug, you should explain clearly and concisely what is required to do the re-create.
- List all steps, exact syntax, file name or sequences you en-counter to re-create the problem.
- If you find more reliable and shorter methods while verifying/re-creating document it.
- If you are not able to re-create it or suspect about it, gather all the relevant information and pass it on to the developer to see if they want to examine the system
- Incorrect
  - Assume that the problem cannot be re-created if you haven't verified that it can be
- Correct
  - If you cannot or haven't re-created the problem it is important to note that in the defect remarks.



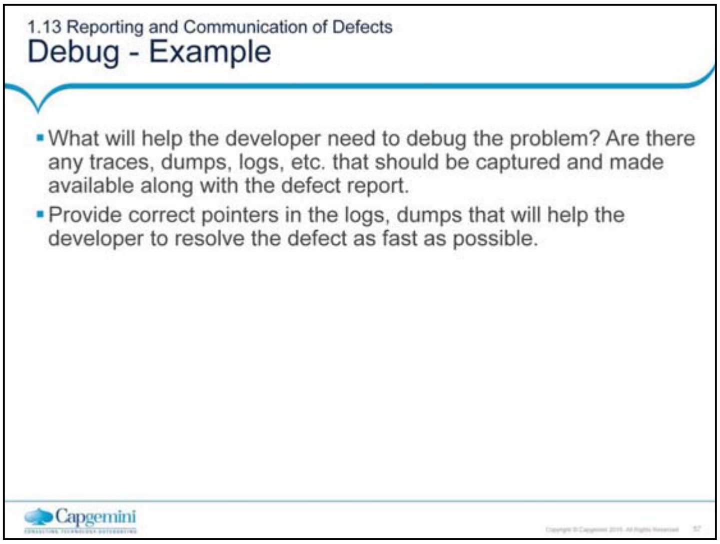
1.13 Reporting and Communication of Defects

Impact - Example

- What is the impact if the bug was to surface in the customer/production environment?
- If you think that the defect won't get sufficient priority then state the potential impact and sell the defect.
- Don't oversell, but make sure that the readers understand the probable impact on the customer.

Example :

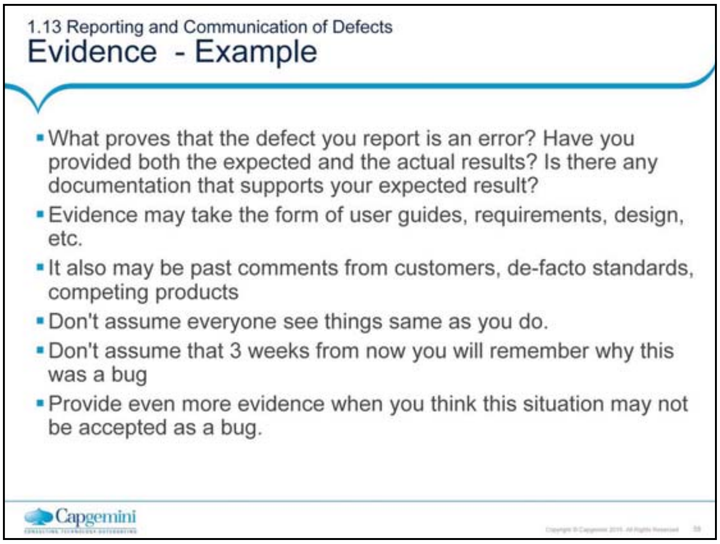
1. System crashes when I hit the enter key.
2. You may notice a typo error on a window. It may be a very minor, but if that results to be a offensive word, then such typo errors need to be fixed.



1.13 Reporting and Communication of Defects

Debug - Example

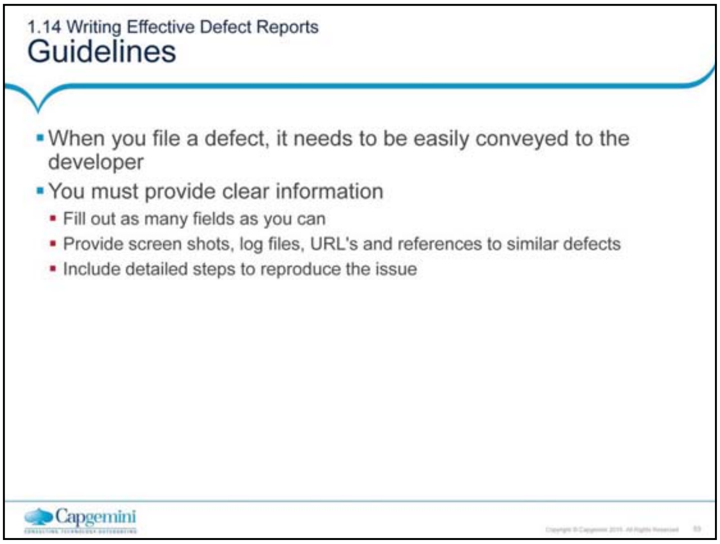
- What will help the developer need to debug the problem? Are there any traces, dumps, logs, etc. that should be captured and made available along with the defect report.
- Provide correct pointers in the logs, dumps that will help the developer to resolve the defect as fast as possible.



1.13 Reporting and Communication of Defects

Evidence - Example

- What proves that the defect you report is an error? Have you provided both the expected and the actual results? Is there any documentation that supports your expected result?
- Evidence may take the form of user guides, requirements, design, etc.
- It also may be past comments from customers, de-facto standards, competing products
- Don't assume everyone see things same as you do.
- Don't assume that 3 weeks from now you will remember why this was a bug
- Provide even more evidence when you think this situation may not be accepted as a bug.



1.14 Writing Effective Defect Reports

Guidelines

- When you file a defect, it needs to be easily conveyed to the developer
- You must provide clear information
  - Fill out as many fields as you can
  - Provide screen shots, log files, URL's and references to similar defects
  - Include detailed steps to reproduce the issue

Some more points to remember
• Refer to requirements or design documents where appropriate.
• When possible, check to see if the problem occurred in an earlier build.
• Include data like username, date, time, and details that make the problem easier to find
• If you checked a log file and find nothing, include a comment like "Nothing in [log name].log."
• You may want to try other scenarios and include the results.

Example of good Description:
On the bills page, some amounts have no decimal after the amount, others have two. Since this is currency, we should be consistent and always display two decimals (or whatever is standard) after the amount-- even if the last digit is a zero.

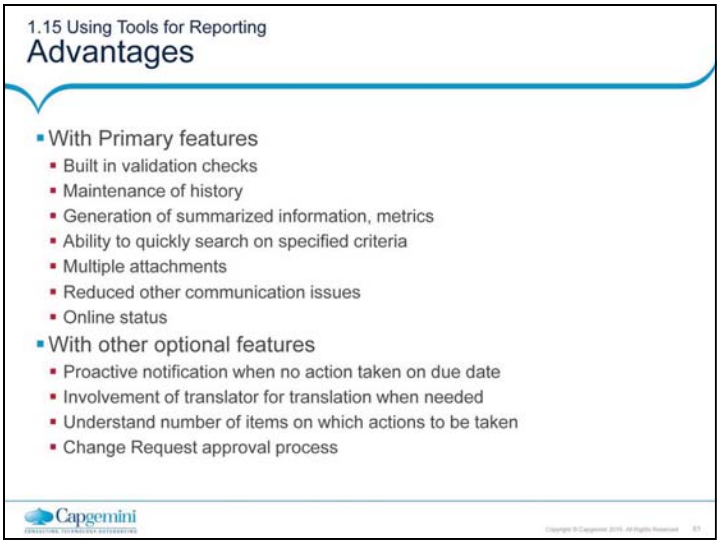
Example of a bad description:
went to page. decimals aren't right

STEPS TO REPRODUCE THE PROBLEM

Provide **easy-to-follow steps** that will reproduce the bug. Include any special setup steps, login information, account information, and any other information that will make it easy to see the problem.

Good example:
Login with username : “user1” and Passwd : “user1”
Click on “Bill details“
Select any order no, It will show you list of items in the order
Click on generate bill.

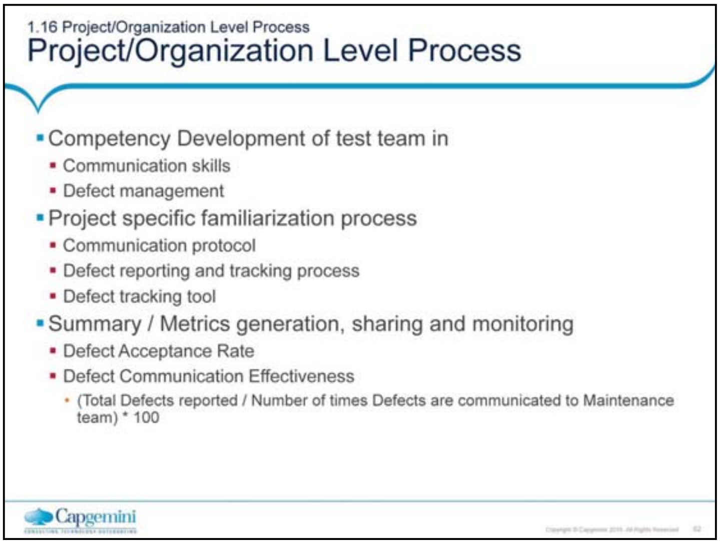
Bad example:
logged in and went to page. changed field. noticed decimals wrong.



1.15 Using Tools for Reporting

Advantages

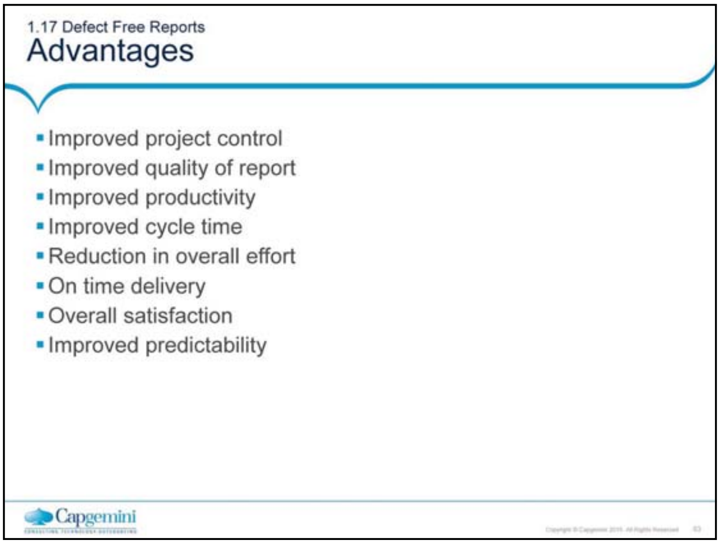
- With Primary features
  - Built in validation checks
  - Maintenance of history
  - Generation of summarized information, metrics
  - Ability to quickly search on specified criteria
  - Multiple attachments
  - Reduced other communication issues
  - Online status
- With other optional features
  - Proactive notification when no action taken on due date
  - Involvement of translator for translation when needed
  - Understand number of items on which actions to be taken
  - Change Request approval process



1.16 Project/Organization Level Process

Project/Organization Level Process

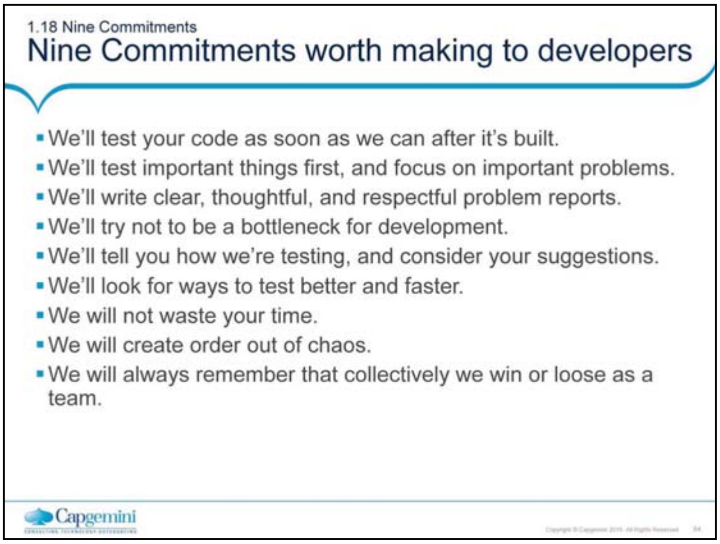
- Competency Development of test team in
  - Communication skills
  - Defect management
- Project specific familiarization process
  - Communication protocol
  - Defect reporting and tracking process
  - Defect tracking tool
- Summary / Metrics generation, sharing and monitoring
  - Defect Acceptance Rate
  - Defect Communication Effectiveness
    - (Total Defects reported / Number of times Defects are communicated to Maintenance team) * 100



1.17 Defect Free Reports

Advantages

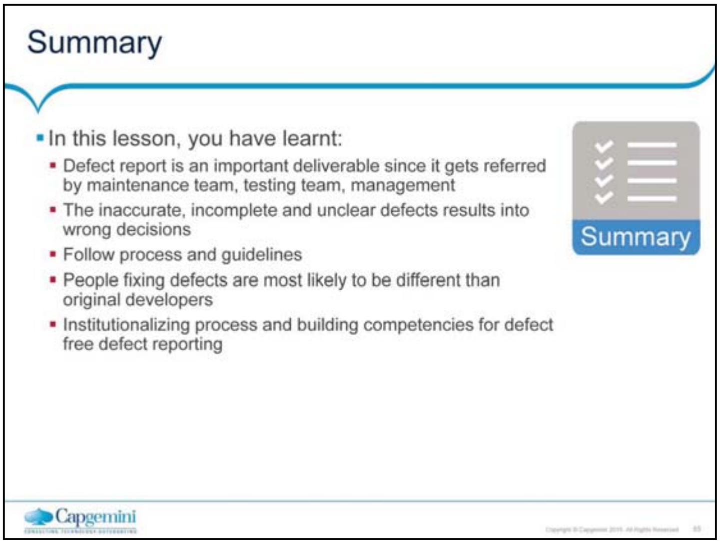
- Improved project control
- Improved quality of report
- Improved productivity
- Improved cycle time
- Reduction in overall effort
- On time delivery
- Overall satisfaction
- Improved predictability



1.18 Nine Commitments

Nine Commitments worth making to developers

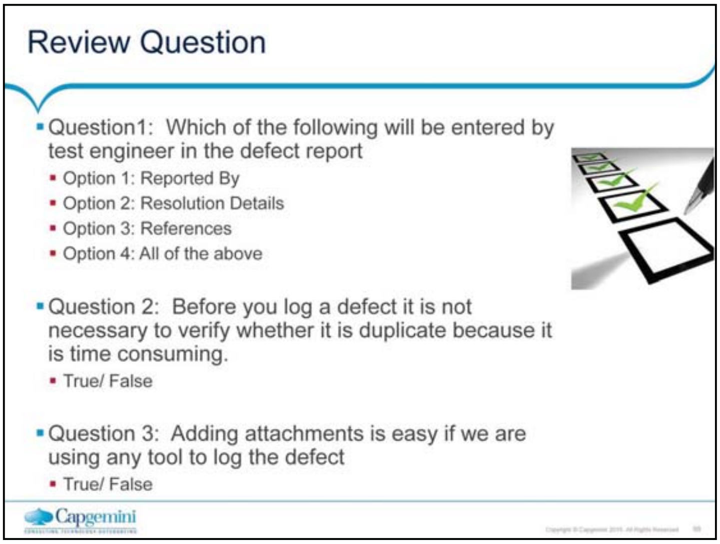
- We'll test your code as soon as we can after it's built.
- We'll test important things first, and focus on important problems.
- We'll write clear, thoughtful, and respectful problem reports.
- We'll try not to be a bottleneck for development.
- We'll tell you how we're testing, and consider your suggestions.
- We'll look for ways to test better and faster.
- We will not waste your time.
- We will create order out of chaos.
- We will always remember that collectively we win or loose as a team.



Summary

- In this lesson, you have learnt:
  - Defect report is an important deliverable since it gets referred by maintenance team, testing team, management
  - The inaccurate, incomplete and unclear defects results into wrong decisions
  - Follow process and guidelines
  - People fixing defects are most likely to be different than original developers
  - Institutionalizing process and building competencies for defect free defect reporting

Answers:
Question1: Option4
Question2: False
Question3: True



Review Question

- Question1: Which of the following will be entered by test engineer in the defect report
  - Option 1: Reported By
  - Option 2: Resolution Details
  - Option 3: References
  - Option 4: All of the above
- Question 2: Before you log a defect it is not necessary to verify whether it is duplicate because it is time consuming.
  - True/ False
- Question 3: Adding attachments is easy if we are using any tool to log the defect
  - True/ False

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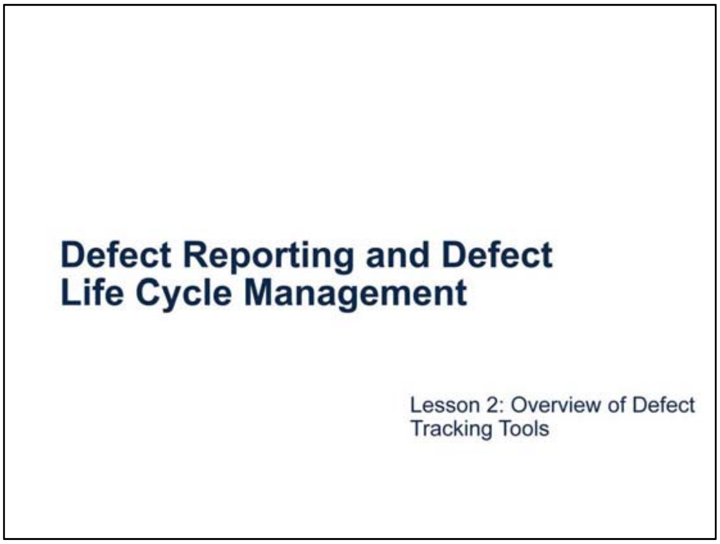
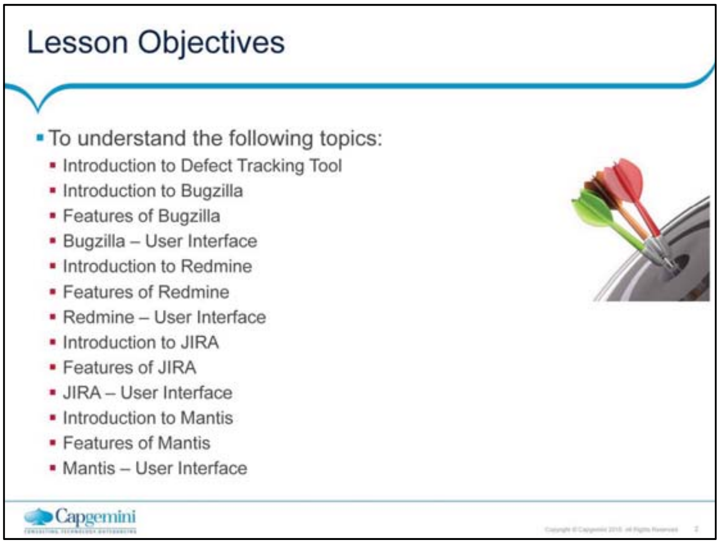


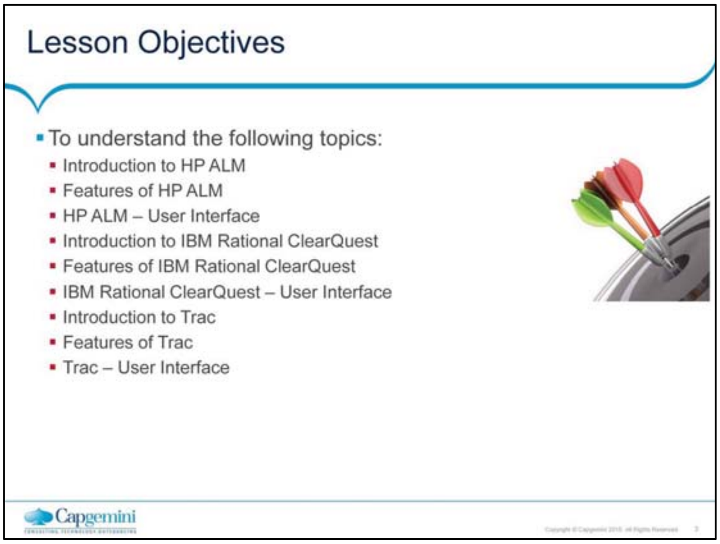
Defect Reporting and Defect Life Cycle Management

Lesson 2: Overview of Defect Tracking Tools



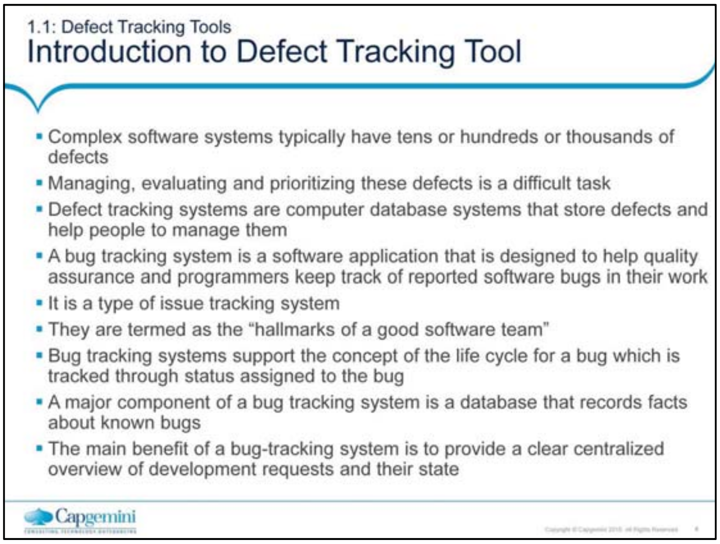
Lesson Objectives

- To understand the following topics:
  - Introduction to Defect Tracking Tool
  - Introduction to Bugzilla
  - Features of Bugzilla
  - Bugzilla – User Interface
  - Introduction to Redmine
  - Features of Redmine
  - Redmine – User Interface
  - Introduction to JIRA
  - Features of JIRA
  - JIRA – User Interface
  - Introduction to Mantis
  - Features of Mantis
  - Mantis – User Interface



Lesson Objectives

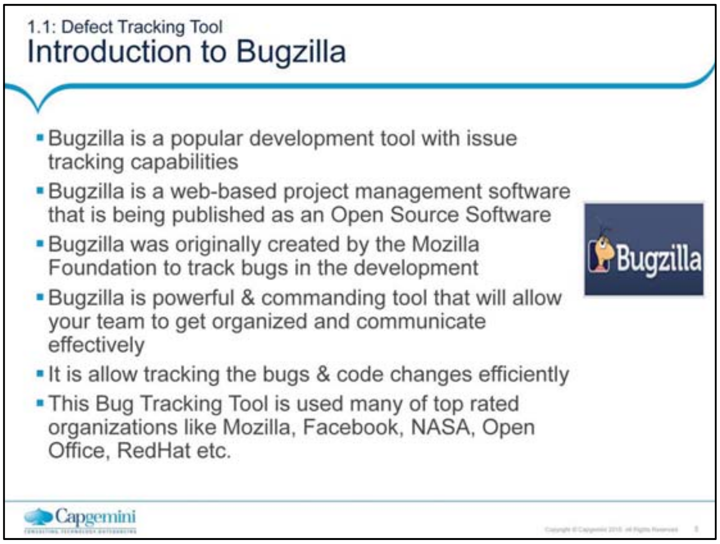
- To understand the following topics:
  - Introduction to HP ALM
  - Features of HP ALM
  - HP ALM – User Interface
  - Introduction to IBM Rational ClearQuest
  - Features of IBM Rational ClearQuest
  - IBM Rational ClearQuest – User Interface
  - Introduction to Trac
  - Features of Trac
  - Trac – User Interface



1.1: Defect Tracking Tools

Introduction to Defect Tracking Tool

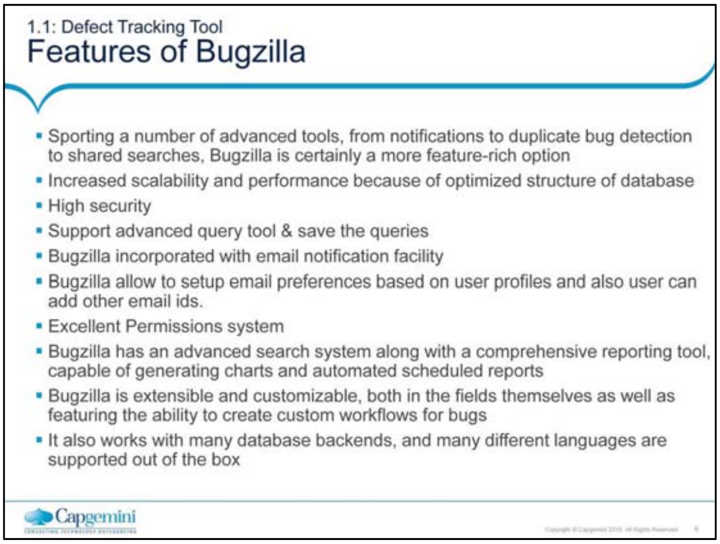
- Complex software systems typically have tens or hundreds or thousands of defects
- Managing, evaluating and prioritizing these defects is a difficult task
- Defect tracking systems are computer database systems that store defects and help people to manage them
- A bug tracking system is a software application that is designed to help quality assurance and programmers keep track of reported software bugs in their work
- It is a type of issue tracking system
- They are termed as the "hallmarks of a good software team"
- Bug tracking systems support the concept of the life cycle for a bug which is tracked through status assigned to the bug
- A major component of a bug tracking system is a database that records facts about known bugs
- The main benefit of a bug-tracking system is to provide a clear centralized overview of development requests and their state



1.1: Defect Tracking Tool

Introduction to Bugzilla

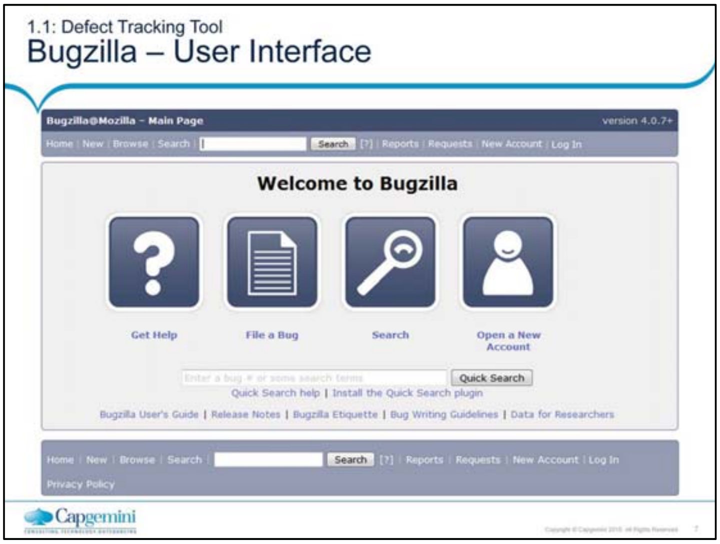
- Bugzilla is a popular development tool with issue tracking capabilities
- Bugzilla is a web-based project management software that is being published as an Open Source Software
- Bugzilla was originally created by the Mozilla Foundation to track bugs in the development
- Bugzilla is powerful & commanding tool that will allow your team to get organized and communicate effectively
- It is allow tracking the bugs & code changes efficiently
- This Bug Tracking Tool is used many of top rated organizations like Mozilla, Facebook, NASA, Open Office, RedHat etc.



1.1: Defect Tracking Tool

Features of Bugzilla

- Sporting a number of advanced tools, from notifications to duplicate bug detection to shared searches, Bugzilla is certainly a more feature-rich option
- Increased scalability and performance because of optimized structure of database
- High security
- Support advanced query tool & save the queries
- Bugzilla incorporated with email notification facility
- Bugzilla allow to setup email preferences based on user profiles and also user can add other email ids.
- Excellent Permissions system
- Bugzilla has an advanced search system along with a comprehensive reporting tool, capable of generating charts and automated scheduled reports
- Bugzilla is extensible and customizable, both in the fields themselves as well as featuring the ability to create custom workflows for bugs
- It also works with many database backends, and many different languages are supported out of the box



1.1: Defect Tracking Tool

Bugzilla – User Interface

Bugzilla@Mozilla – Main Page
version 4.0.7+
Home | New | Browse | Search | Search [?] | Reports | Requests | New Account | Log In
Welcome to Bugzilla
Get Help
File a Bug
Search
Open a New Account
Enter a bug # or some search terms
Quick Search
Quick Search help | Install the Quick Search plugin
Bugzilla User's Guide | Release Notes | Bugzilla Etiquette | Bug Writing Guidelines | Data for Researchers
Home | New | Browse | Search | Search [?] | Reports | Requests | New Account | Log In
Privacy Policy
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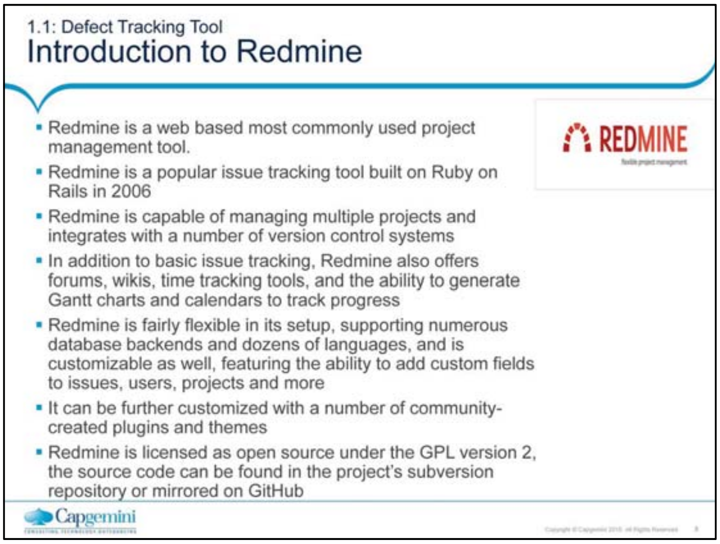
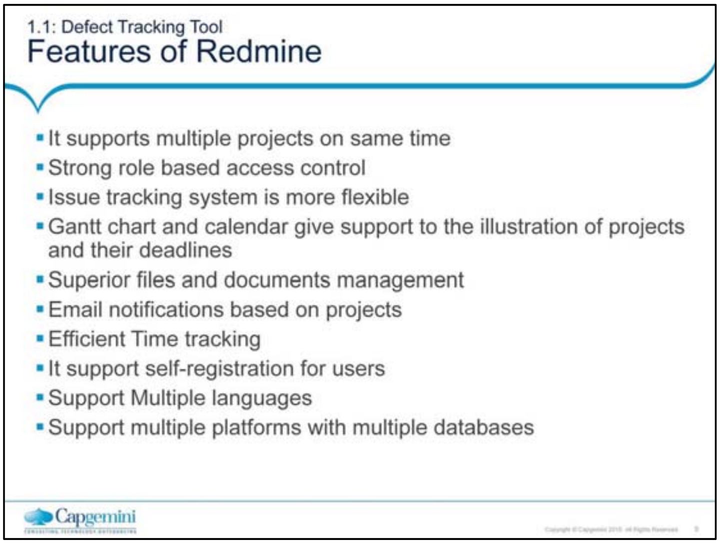


1.1: Defect Tracking Tool

Introduction to Redmine

- Redmine is a web based most commonly used project management tool.
- Redmine is a popular issue tracking tool built on Ruby on Rails in 2006
- Redmine is capable of managing multiple projects and integrates with a number of version control systems
- In addition to basic issue tracking, Redmine also offers forums, wikis, time tracking tools, and the ability to generate Gantt charts and calendars to track progress
- Redmine is fairly flexible in its setup, supporting numerous database backends and dozens of languages, and is customizable as well, featuring the ability to add custom fields to issues, users, projects and more
- It can be further customized with a number of community-created plugins and themes
- Redmine is licensed as open source under the GPL version 2, the source code can be found in the project's subversion repository or mirrored on GitHub



1.1: Defect Tracking Tool

Features of Redmine

- It supports multiple projects on same time
- Strong role based access control
- Issue tracking system is more flexible
- Gantt chart and calendar give support to the illustration of projects and their deadlines
- Superior files and documents management
- Email notifications based on projects
- Efficient Time tracking
- It support self-registration for users
- Support Multiple languages
- Support multiple platforms with multiple databases

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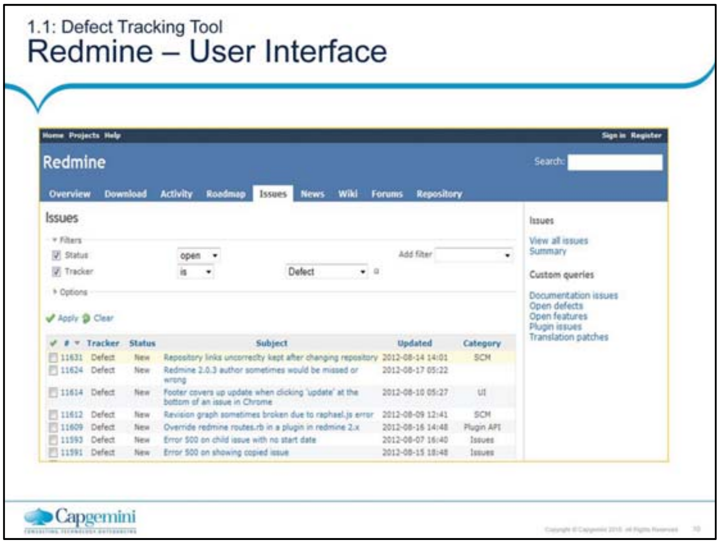

1.1: Defect Tracking Tool

Redmine – User Interface

Home Projects Help Sign in Register

Redmine Search:

Overview Download Activity Roadmap Issues News Wiki Forums Repository

Issues

Filters

- [✓] Status open
- [✓] Tracker is Defect

Add filter

Options

Apply Clear

#	Tracker	Status	Subject	Updated	Category
11631	Defect	New	Repository links uncorrectly kept after changing repository	2012-08-14 14:01	SCM
11624	Defect	New	Redmine 2.0.3 author sometimes would be missed or wrong	2012-08-17 05:22	
11614	Defect	New	Footer covers up update when clicking 'update' at the bottom of an issue in Chrome	2012-08-10 05:27	UI
11612	Defect	New	Revision graph sometimes broken due to raphael.js error	2012-08-09 12:41	SCM
11609	Defect	New	Override redmine routes.rb in a plugin in redmine 2.x	2012-08-16 14:48	Plugin API
11593	Defect	New	Error 500 on child issue with no start date	2012-08-07 16:40	Issues
11591	Defect	New	Error 500 on showing copied issue	2012-08-15 18:48	Issues

Issues

View all issues
Summary

Custom queries

Documentation issues
Open defects
Open features
Plugin issues
Translation patches

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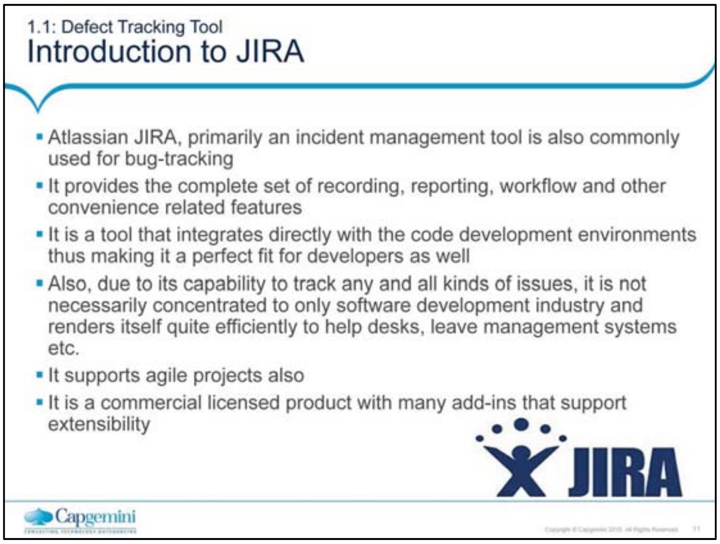
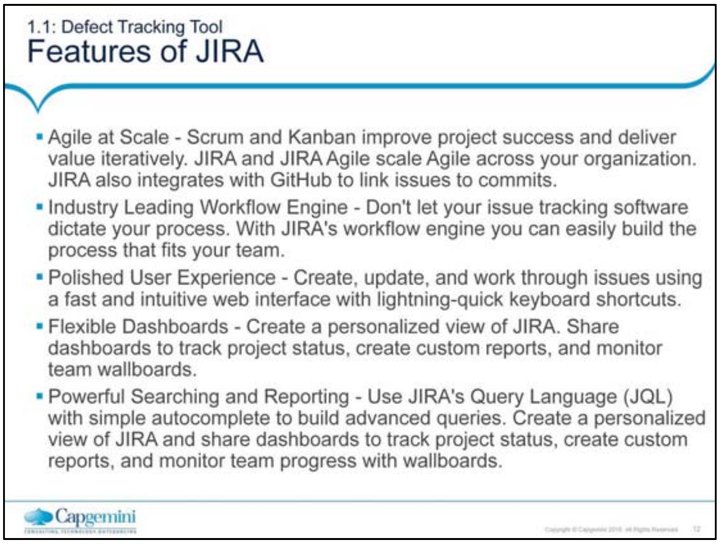


1.1: Defect Tracking Tool

Introduction to JIRA

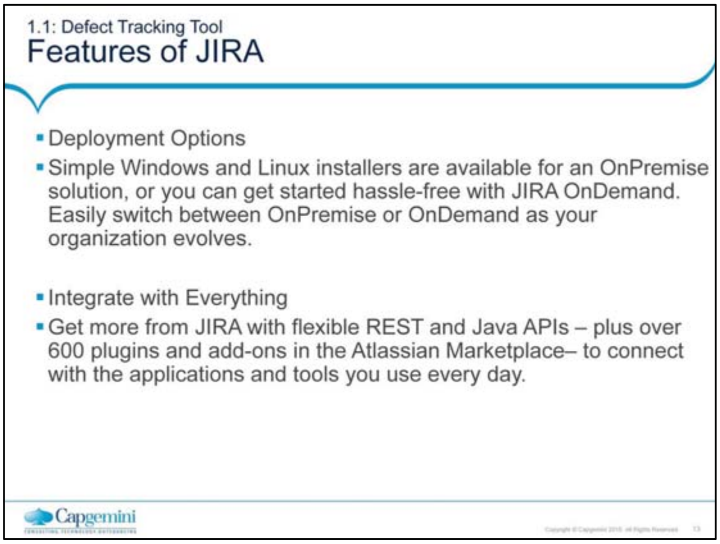
- Atlassian JIRA, primarily an incident management tool is also commonly used for bug-tracking
- It provides the complete set of recording, reporting, workflow and other convenience related features
- It is a tool that integrates directly with the code development environments thus making it a perfect fit for developers as well
- Also, due to its capability to track any and all kinds of issues, it is not necessarily concentrated to only software development industry and renders itself quite efficiently to help desks, leave management systems etc.
- It supports agile projects also
- It is a commercial licensed product with many add-ins that support extensibility



1.1: Defect Tracking Tool

Features of JIRA

- Agile at Scale - Scrum and Kanban improve project success and deliver value iteratively. JIRA and JIRA Agile scale Agile across your organization. JIRA also integrates with GitHub to link issues to commits.
- Industry Leading Workflow Engine - Don't let your issue tracking software dictate your process. With JIRA's workflow engine you can easily build the process that fits your team.
- Polished User Experience - Create, update, and work through issues using a fast and intuitive web interface with lightning-quick keyboard shortcuts.
- Flexible Dashboards - Create a personalized view of JIRA. Share dashboards to track project status, create custom reports, and monitor team wallboards.
- Powerful Searching and Reporting - Use JIRA's Query Language (JQL) with simple autocomplete to build advanced queries. Create a personalized view of JIRA and share dashboards to track project status, create custom reports, and monitor team progress with wallboards.

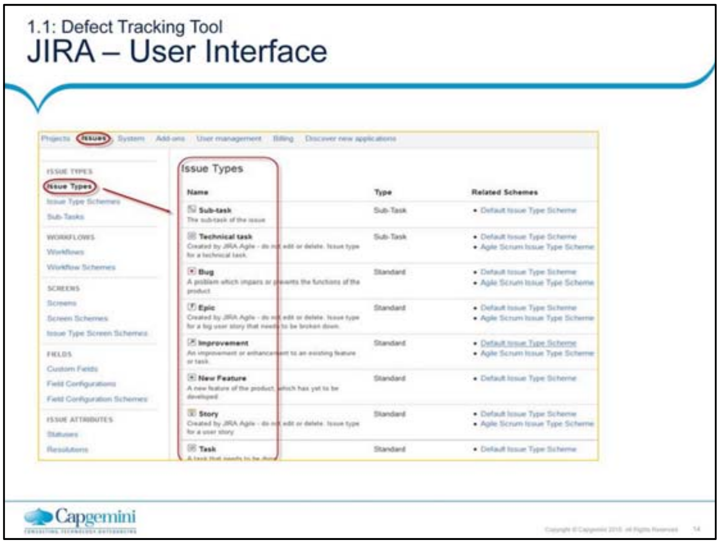


1.1: Defect Tracking Tool

Features of JIRA

- Deployment Options
- Simple Windows and Linux installers are available for an OnPremise solution, or you can get started hassle-free with JIRA OnDemand. Easily switch between OnPremise or OnDemand as your organization evolves.

- Integrate with Everything
- Get more from JIRA with flexible REST and Java APIs – plus over 600 plugins and add-ons in the Atlassian Marketplace– to connect with the applications and tools you use every day.



1.1: Defect Tracking Tool

JIRA – User Interface

Issue Types

Name	Type	Related Schemes
Sub-task The sub-task of the issue	Sub-Task	• Default Issue Type Scheme
Technical task Created by JIRA Agile - do not edit or delete. Issue type for a technical task.	Sub-Task	• Default Issue Type Scheme • Agile Scrum Issue Type Scheme
Bug A problem which impairs or prevents the functions of the product	Standard	• Default Issue Type Scheme • Agile Scrum Issue Type Scheme
Epic Created by JIRA Agile - do not edit or delete. Issue type for a big user story that needs to be broken down.	Standard	• Default Issue Type Scheme • Agile Scrum Issue Type Scheme
Improvement An improvement or enhancement to an existing feature or task.	Standard	• Default Issue Type Scheme • Agile Scrum Issue Type Scheme
New Feature A new feature of the product, which has yet to be developed	Standard	• Default Issue Type Scheme
Story Created by JIRA Agile - do not edit or delete. Issue type for a user story	Standard	• Default Issue Type Scheme • Agile Scrum Issue Type Scheme
Task A task that needs to be done	Standard	• Default Issue Type Scheme

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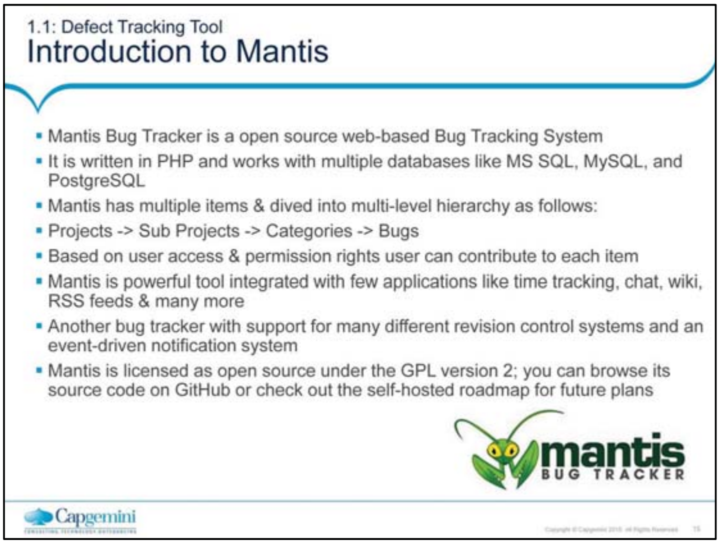
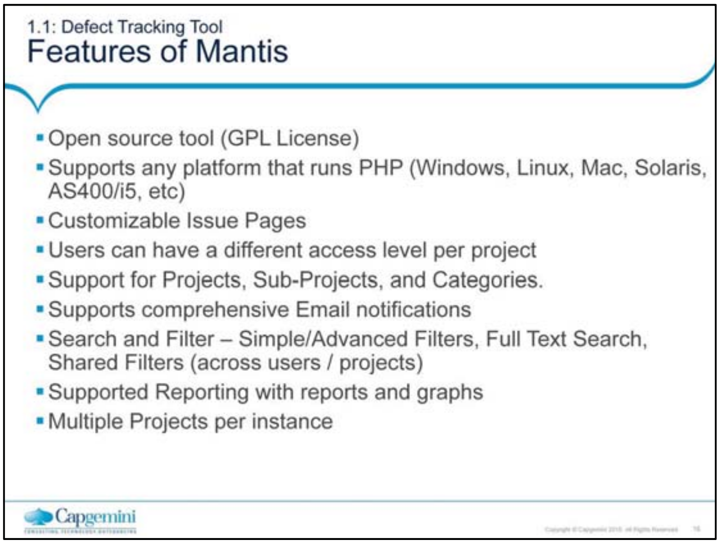


1.1: Defect Tracking Tool

Introduction to Mantis

- Mantis Bug Tracker is a open source web-based Bug Tracking System
- It is written in PHP and works with multiple databases like MS SQL, MySQL, and PostgreSQL
- Mantis has multiple items & dived into multi-level hierarchy as follows:
- Projects -> Sub Projects -> Categories -> Bugs
- Based on user access & permission rights user can contribute to each item
- Mantis is powerful tool integrated with few applications like time tracking, chat, wiki, RSS feeds & many more
- Another bug tracker with support for many different revision control systems and an event-driven notification system
- Mantis is licensed as open source under the GPL version 2; you can browse its source code on GitHub or check out the self-hosted roadmap for future plans



1.1: Defect Tracking Tool

Features of Mantis

- Open source tool (GPL License)
- Supports any platform that runs PHP (Windows, Linux, Mac, Solaris, AS400/i5, etc)
- Customizable Issue Pages
- Users can have a different access level per project
- Support for Projects, Sub-Projects, and Categories.
- Supports comprehensive Email notifications
- Search and Filter – Simple/Advanced Filters, Full Text Search, Shared Filters (across users / projects)
- Supported Reporting with reports and graphs
- Multiple Projects per instance

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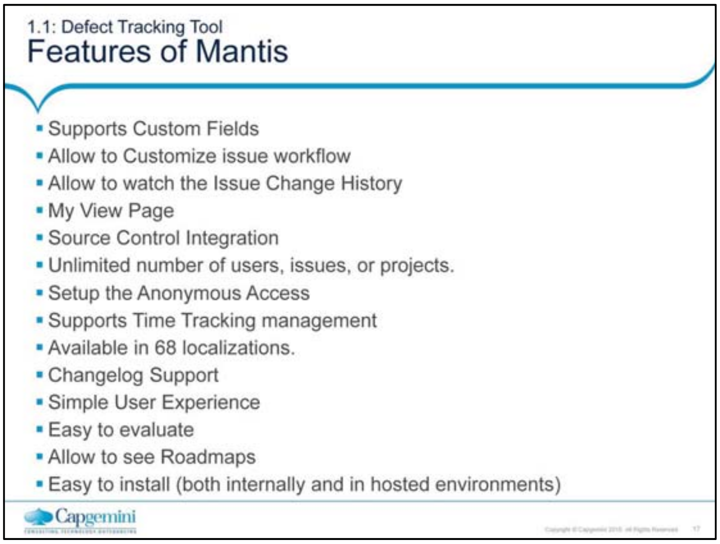


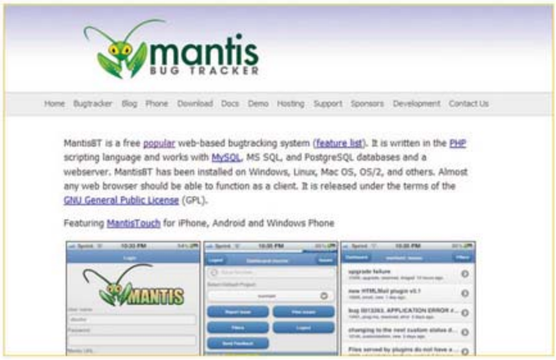
1.1: Defect Tracking Tool

Features of Mantis

- Supports Custom Fields
- Allow to Customize issue workflow
- Allow to watch the Issue Change History
- My View Page
- Source Control Integration
- Unlimited number of users, issues, or projects.
- Setup the Anonymous Access
- Supports Time Tracking management
- Available in 68 localizations.
- Changelog Support
- Simple User Experience
- Easy to evaluate
- Allow to see Roadmaps
- Easy to install (both internally and in hosted environments)

1.1: Defect Tracking Tool

Mantis – User Interface


mantis
BUG TRACKER
Home Bugtracker Blog Phone Download Docs Demo Hosting Support Sponsors Development Contact Us
MANTIS

MantisBT is a free popular web-based bugtracking system (feature list). It is written in the PHP scripting language and works with MySQL, MS SQL, and PostgreSQL databases and a webserver. MantisBT has been installed on Windows, Linux, Mac OS, OS/2, and others. Almost any web browser should be able to function as a client. It is released under the terms of the GNU General Public License (GPL).

Featuring MantisTouch for iPhone, Android and Windows Phone

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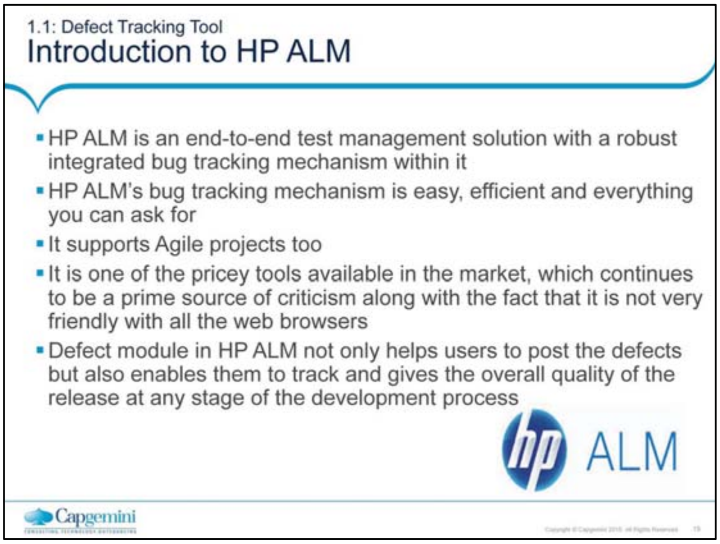
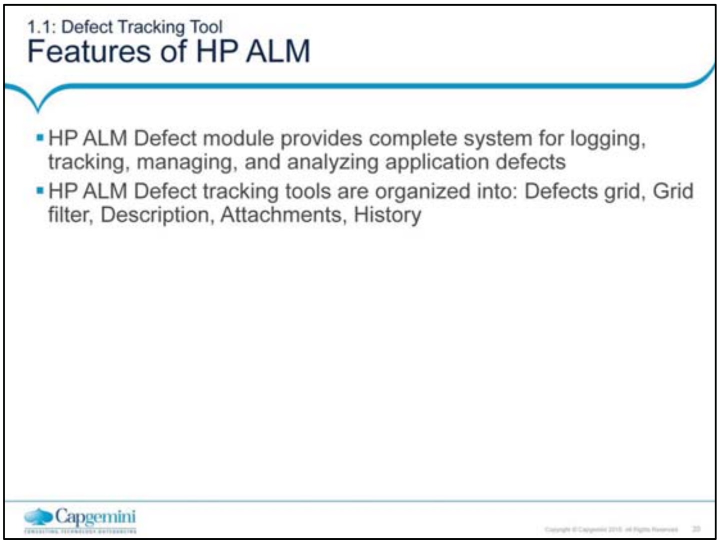


1.1: Defect Tracking Tool

Introduction to HP ALM

- HP ALM is an end-to-end test management solution with a robust integrated bug tracking mechanism within it
- HP ALM's bug tracking mechanism is easy, efficient and everything you can ask for
- It supports Agile projects too
- It is one of the pricey tools available in the market, which continues to be a prime source of criticism along with the fact that it is not very friendly with all the web browsers
- Defect module in HP ALM not only helps users to post the defects but also enables them to track and gives the overall quality of the release at any stage of the development process



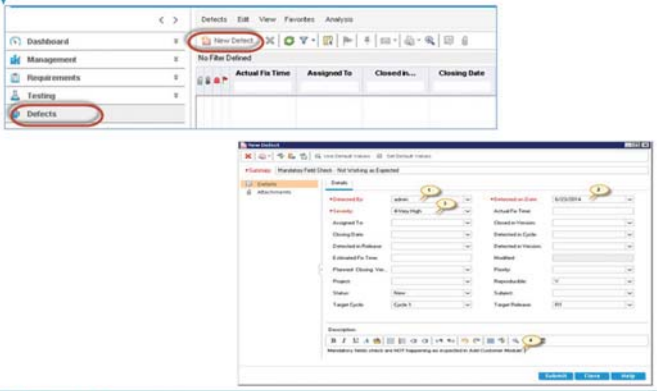
1.1: Defect Tracking Tool

Features of HP ALM

- HP ALM Defect module provides complete system for logging, tracking, managing, and analyzing application defects
- HP ALM Defect tracking tools are organized into: Defects grid, Grid filter, Description, Attachments, History

1.1: Defect Tracking Tool

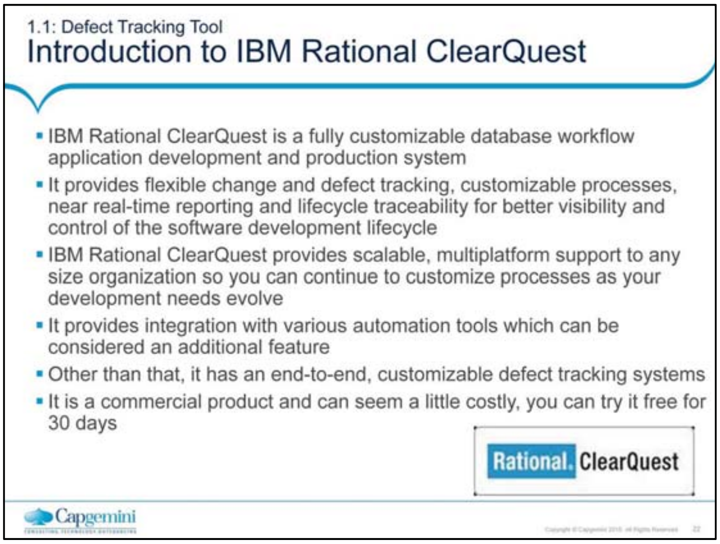
HP ALM – User Interface



Summary:	Mandatory Field Check - Not Working as Expected		
Detected By:	admin	Detected on Date:	6/23/2014
Severity:	4-Very High	Actual Fix Time:	
Assigned To:		Closed in Version:	
Closing Date:		Detected in Cycle:	
Detected in Release:		Detected in Version:	
Estimated Fix Time:		Modified:	
Planned Closing Ver...:		Priority:	
Project:		Reproducible:	Y
Status:	New	Subject:	
Target Cycle:	Cycle 1	Target Release:	R1

Description:

Mandatory fields check are NOT happening as expected in Add Customer Module



1.1: Defect Tracking Tool

Introduction to IBM Rational ClearQuest

- IBM Rational ClearQuest is a fully customizable database workflow application development and production system
- It provides flexible change and defect tracking, customizable processes, near real-time reporting and lifecycle traceability for better visibility and control of the software development lifecycle
- IBM Rational ClearQuest provides scalable, multiplatform support to any size organization so you can continue to customize processes as your development needs evolve
- It provides integration with various automation tools which can be considered an additional feature
- Other than that, it has an end-to-end, customizable defect tracking systems
- It is a commercial product and can seem a little costly, you can try it free for 30 days

Rational. ClearQuest

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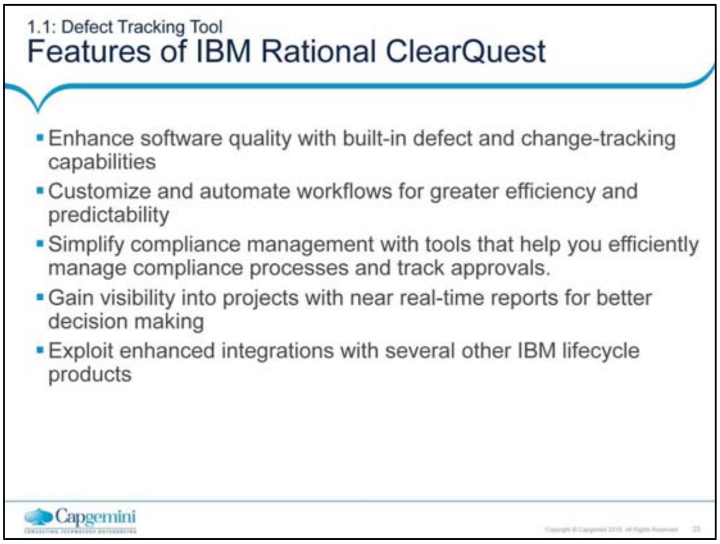

1.1: Defect Tracking Tool

Features of IBM Rational ClearQuest

- Enhance software quality with built-in defect and change-tracking capabilities
- Customize and automate workflows for greater efficiency and predictability
- Simplify compliance management with tools that help you efficiently manage compliance processes and track approvals.
- Gain visibility into projects with near real-time reports for better decision making
- Exploit enhanced integrations with several other IBM lifecycle products

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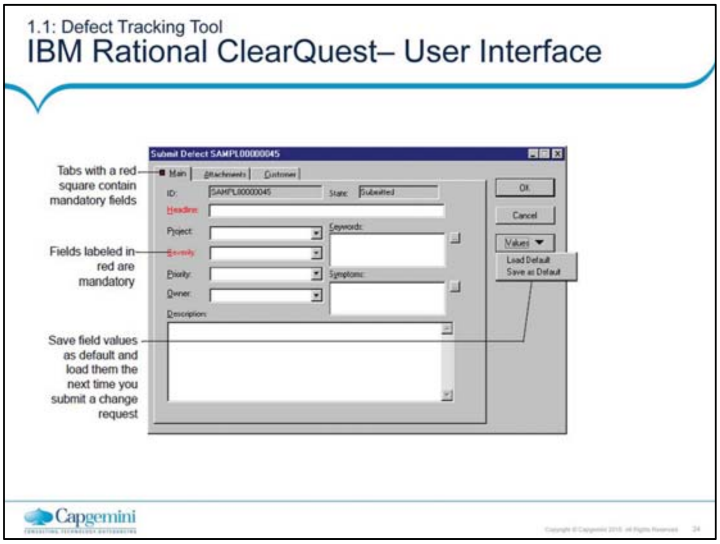

1.1: Defect Tracking Tool

IBM Rational ClearQuest– User Interface

Submit Defect SAMPL00000045

ID: SAMPL00000045

State: Submitted

Tabs with a red square contain mandatory fields

Fields labeled in red are mandatory

Save field values as default and load them the next time you submit a change request

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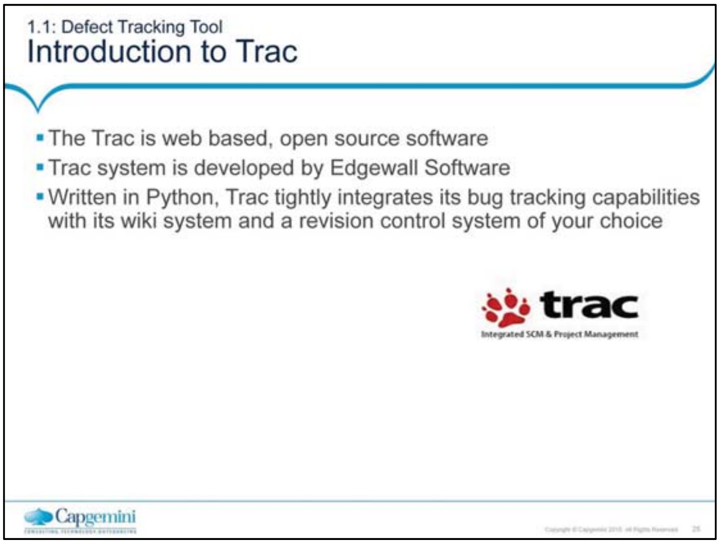


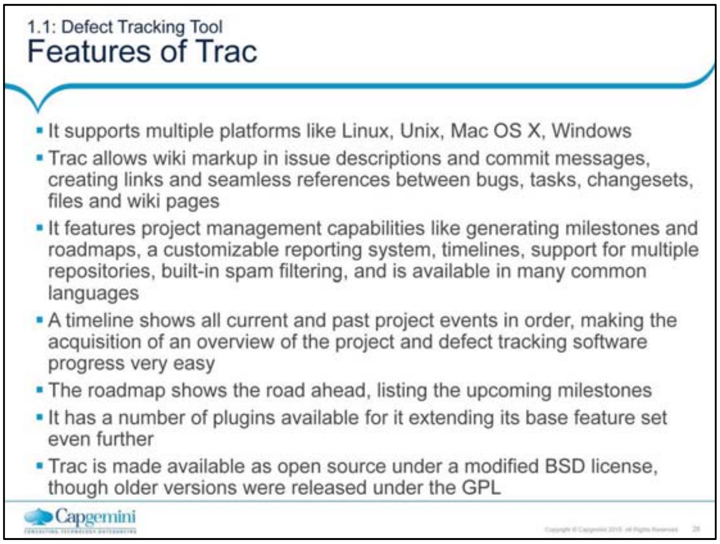
1.1: Defect Tracking Tool

Introduction to Trac

- The Trac is web based, open source software
- Trac system is developed by Edgewall Software
- Written in Python, Trac tightly integrates its bug tracking capabilities with its wiki system and a revision control system of your choice

trac
Integrated SCM & Project Management

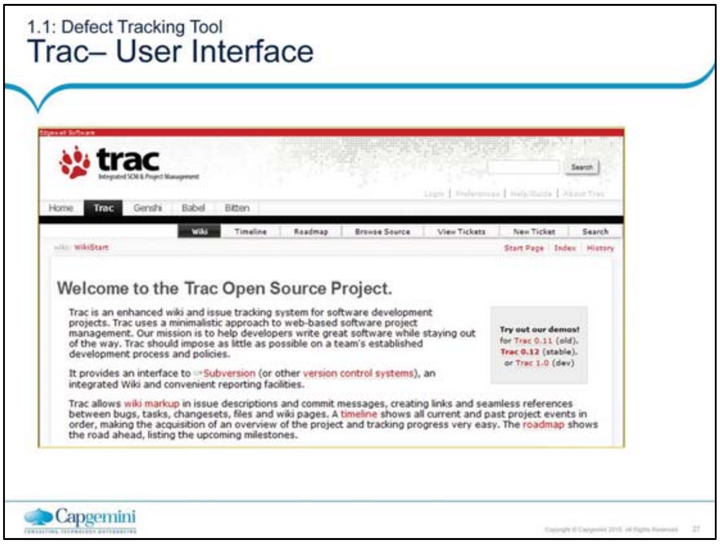
Capgemini



1.1: Defect Tracking Tool

Features of Trac

- It supports multiple platforms like Linux, Unix, Mac OS X, Windows
- Trac allows wiki markup in issue descriptions and commit messages, creating links and seamless references between bugs, tasks, changesets, files and wiki pages
- It features project management capabilities like generating milestones and roadmaps, a customizable reporting system, timelines, support for multiple repositories, built-in spam filtering, and is available in many common languages
- A timeline shows all current and past project events in order, making the acquisition of an overview of the project and defect tracking software progress very easy
- The roadmap shows the road ahead, listing the upcoming milestones
- It has a number of plugins available for it extending its base feature set even further
- Trac is made available as open source under a modified BSD license, though older versions were released under the GPL



1.1: Defect Tracking Tool

Trac– User Interface

Welcome to the Trac Open Source Project.

Trac is an enhanced wiki and issue tracking system for software development projects. Trac uses a minimalistic approach to web-based software project management. Our mission is to help developers write great software while staying out of the way. Trac should impose as little as possible on a team's established development process and policies.

It provides an interface to Subversion (or other version control systems), an integrated Wiki and convenient reporting facilities.

Trac allows wiki markup in issue descriptions and commit messages, creating links and seamless references between bugs, tasks, changesets, files and wiki pages. A timeline shows all current and past project events in order, making the acquisition of an overview of the project and tracking progress very easy. The roadmap shows the road ahead, listing the upcoming milestones.

Try out our demos!
for Trac 0.11 (old),
Trac 0.12 (stable),
or Trac 1.0 (dev)

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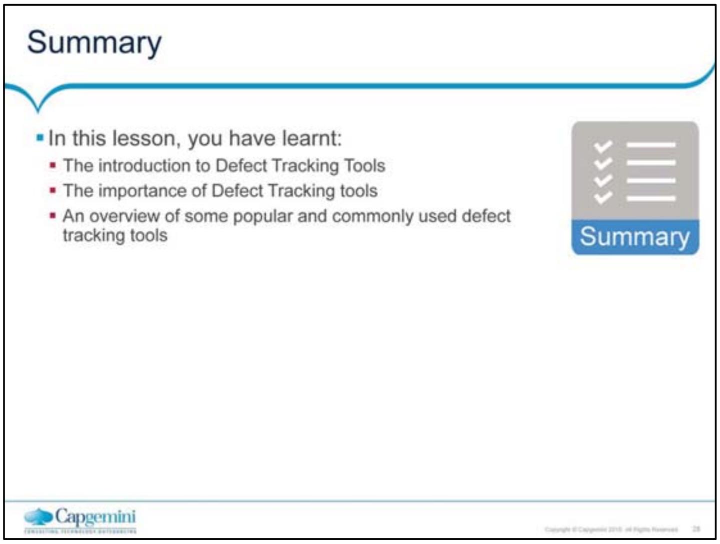
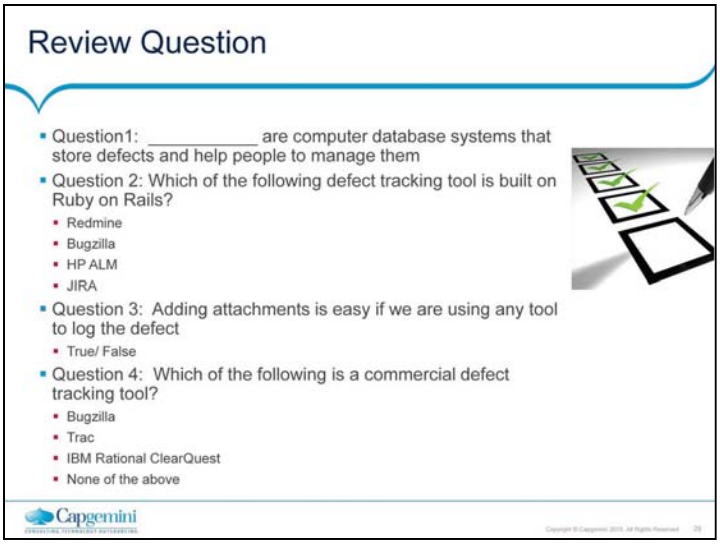


Summary

- In this lesson, you have learnt:
  - The introduction to Defect Tracking Tools
  - The importance of Defect Tracking tools
  - An overview of some popular and commonly used defect tracking tools

Add the notes here.



Review Question

- Question1: ___________ are computer database systems that store defects and help people to manage them
- Question 2: Which of the following defect tracking tool is built on Ruby on Rails?
  - Redmine
  - Bugzilla
  - HP ALM
  - JIRA
- Question 3: Adding attachments is easy if we are using any tool to log the defect
  - True/ False
- Question 4: Which of the following is a commercial defect tracking tool?
  - Bugzilla
  - Trac
  - IBM Rational ClearQuest
  - None of the above

Defect Reporting and Defect Life Cycle Management – V 3.0

Lab Book

Document Revision History

Date	Revision No.	Author	Summary of Changes
12/8/09	1	Priya Rane	Revamp
13 /06/11	1.1	Kishori Khadilkar	Revamp
2/6/15	2.0	Alphy Thomson & Shilpa Bhosle	Material Revamp
10/6/16	3.0	Amruta Rakhonde	Post-Integration Material Revamp

Table of Contents

Lab 1. Logging defect into Defect Report Template

Goals	• Understand the process of reporting defects. • Learn to report defect free defects.
Time	60 min

1.1 The testing team has found certain defects during testing the Banking Exam Portal Application. As a one of the team member of the testing team the responsibility has been given to you to log these defects into Defect Report so that the development team can understand the defects well and take necessary measures to eliminate the same from the application. You need to ensure that defects found during test execution are logged with proper care so that the defect removal cycle can be reduced.

Note – The below mentioned defects are imaginary defects. Make a proper use of the Defect Tracking Sheet to log below given defects.

Home Page:

1. The link “List of exams on the portal” is not able to navigate the user to the web page displaying various exams available on the Banking Exam Portal application.
2. The link “List of exams on the portal” is displayed at the left side of the web page instead of right side.
3. The User Name field is accepting any type of data.
4. The application is not generating an error even if Password filed is left empty while logging to the application
5. The application behaves in a wired manner by disallowing a user to login to the website even if the user has entered the valid credential i.e. valid User Name and Password.
6. After clicking on the Submit button on the home page user gets an error message “Page Cannot Be Displayed”.

Lab 2. **Logging defect free defect reports**

Goals	• Understand the application and report defects in defect report
Time	60 min

2.1 Defect Report for Bank Exam Portal Application

Make Defect Entry for the Following Defects in the Defect Entry Report:

Registration:

1. The Spelling of “Personal Information” is wrong. The web page displays it as “Persnal Information”.
2. Mobile number field is accepting alphabets and special characters also.
3. The insert Photo field is accepting a photo of size more than 150 kb.
4. In marital status only 2 options i.e. Married & Unmarried should be shown on the web page, however the web page is displaying three options to the user i.e. Married, Unmarried & Divorcee.
5. After clicking on the “Save & Submit” button, Registration Id should get auto-generated and displayed on the screen; however the application is not able generate and display the Registration ID upon successful registration process.

2.2 Defect Report for Bank Exam Portal Application – “Add Exam Details”

You have designed test cases for testing the various functionalities of **“Add Exam Details”** page. Assume that your test cases have failed. Prepare the defect report for all failed test cases.

Note: Every participant may have different test cases. Use the test cases that you have written for logging the defect in the defect report. Do not restrict the scenarios to a single page or field; rather focus on the flow of the application as an end user or applicant.

Lab 3. Execute test cases & log defect free defects

Goals	• Understand the application and report defects in defect report
Time	180 min

3.1 Defect Report for CyberShopee System Application.

You have designed test cases for testing the various functionalities of “CyberShopee System” as a part of the Testing Concepts lab assignment. You need to execute these test cases by running the application. Based on the execution result, you need to log all the defects that you found during the test execution in the Defect Report Template according to the guidelines discussed in the class. You need to ensure that you log defect free defects in the defect log which can help development team to reproduce & eliminate the defects.

Note: Every participant may have different test cases. Use the test cases that you have written for logging the defect in the defect report. Do not restrict the scenarios to a single page or field; rather focus on the flow of the application as an end user or applicant. You can also perform an exploratory testing/random testing