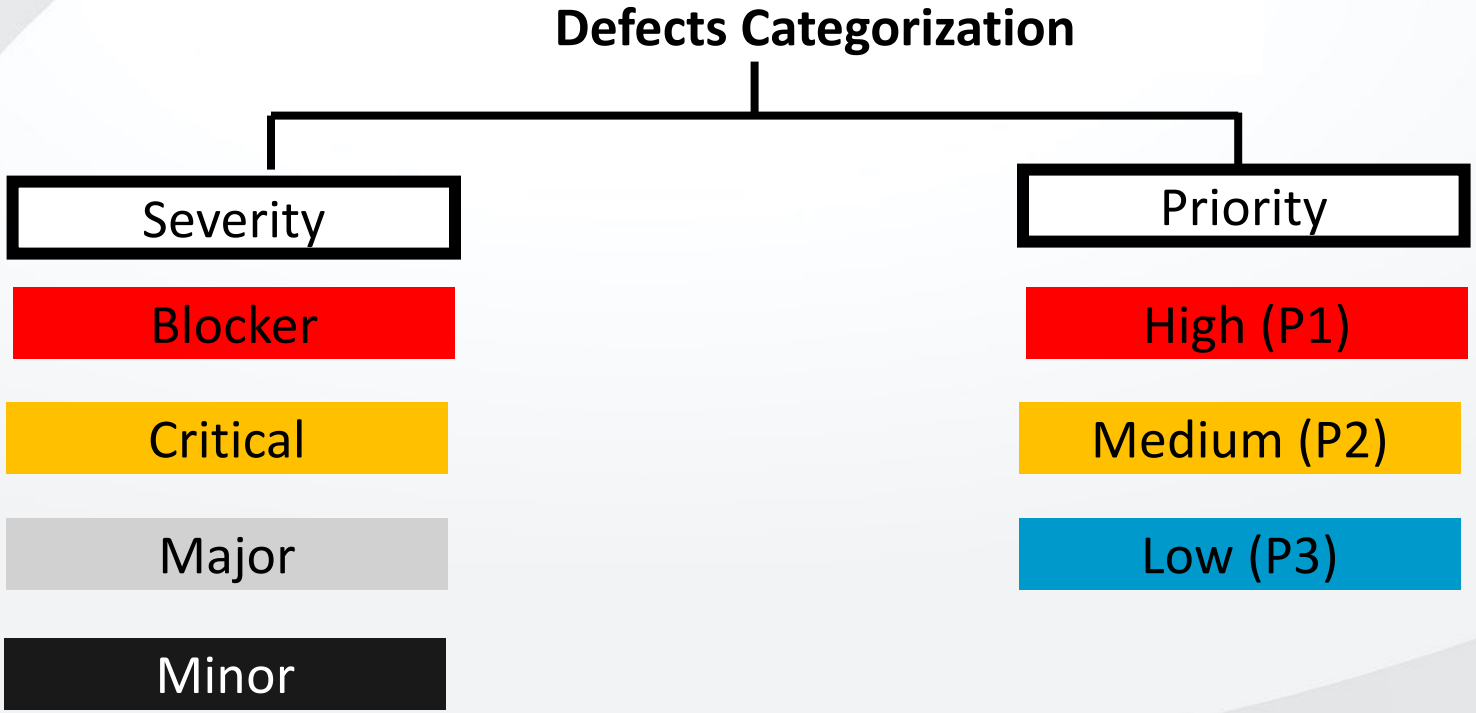
SESSION 9

Defects

- Any mismatched functionality found in a application is called as Defect/Bug/Issue.
- During Test Execution Test engineers are reporting mismatches as defects to developers through templates or using tools.
- Defect Reporting Tools:
  - Clear Quest
  - DevTrack
  - Jira
  - Quality Center
  - Bug Jilla etc.

Defect Classification



Defect Severity

- Severity describes the seriousness of defect and how much impact on business workflow.
- Tester decides the Severity of the defect.
- **Defect severity can be categorized into four classes**
  - Blocker(Show stopper): This defect indicates nothing can proceed further.
    - Ex: Application crashed, Login Not worked
  - Critical : The main/basic functionality is not working. Customer business workflow is broken. They cannot proceed further.
    - Ex1: Fund transfer is not working in net banking
    - Ex2: Ordering product in ecommerce application is not working.
  - Major: It cause some undesirable behavior, but the feature is still functional.
    - Ex1: After sending email there is no confirm message
    - Ex2: After booking cab there is no confirmation.
  - Minor: It won't cause any major break-down of the system
    - Ex: Look and feel issues, spellings, alignments.

Defect Priority

- Priority describes the importance of defect.
- Tester decides the Priority of the defect. Developer or product manager can change priority later if needed.
- Defects will be fixed by developer based on priority.
- **Defect priority can be categorized into three classes**
  - P1 (High) **:** The defect must be resolved immediately as it affects the system severely and cannot be used until it is fixed.
  - P2 (Medium): It can wait until a new versions/builds is created
  - P3 (Low): Developer can fix it in later releases.

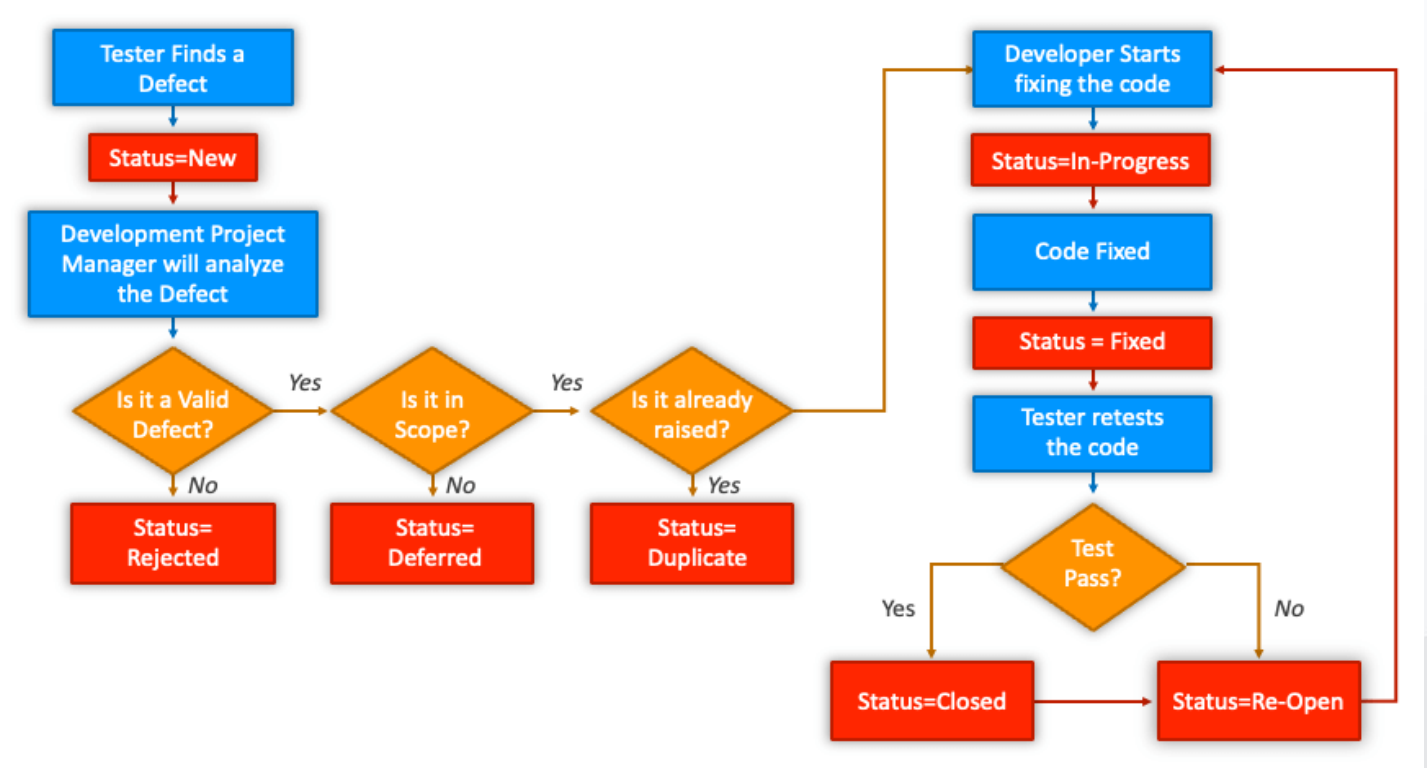
Difference Between Severity and Priority

Severity	Priority
Defined by the impact of a specific problem on any application's functionality.	Defined by the impact on business.
Category decided by testers.	Decided by testers, but developers or product owners can change priority later based on business impact.
Deals with the technical aspects of the application.	Deals with the timeframe or order to fix the defects.
The value does not change with time, it's fixed.	The priority value is subjective and may change after comparing with other defects.

Examples on Priority & Severity

Issue Description	Priority	Severity
A spelling mistake in a page not frequently navigated by users.	Low	Low
Application crashing in some very corner case.	Low	High
Slight change in logo colour or spelling mistake in company name.	High	Low
Issue with login functionality (user is not able to login).	High	High
Web page not found when user clicks on a link (rarely visited).	Low	High
Any cosmetic or spelling issues within a paragraph or a page.	Low	Low

Defect(Bug) Life Cycle



Defect Resolution

- After receiving the defect report from the testing team, development team conduct a review meeting to fix defects. Then they send a Resolution Type to the testing team for further communication.
- **Resolution Types:-**
  - Accept
  - Reject
  - Duplicate
  - Enhancement
  - Need more information
  - Not Reproducible
  - Fixed
  - As Designed

Defect Report Contents

- **Defect ID** - Unique identification number for the defect.
- **Defect Description** - Detailed description of the defect including information about the module in which defect was found.
- **Version** - Version of the application in which defect was found.
- **Steps** - Detailed steps along with screenshots with which the developer can reproduce the defects.
- **Date Raised** - Date when the defect is raised
- **Reference-** where you Provide reference to the documents like . requirements, design, architecture or may be even screenshots of the error to help understand the defect
- **Detected By** - Name/ID of the tester who raised the defect
- **Status** - Status of the defect , more on this later
- **Fixed by** - Name/ID of the developer who fixed it
- **Date Closed** - Date when the defect is closed
- **Severity** which describes the impact of the defect on the application
- **Priority** which is related to defect fixing urgency. Severity Priority could be High/Medium/Low based on the impact urgency at which the defect should be fixed respectively

Test Metrics

SNO	Required Data
1	No. Of Requirements
2	Avg. No. of Test Cases written Per Requirement
3	Total No.of Test Cases written for all Requirement
4	Total No. Of test cases Executed
5	No.of Test Cases Passed
6	No.of Test Cases Failed
7	No.of Test cases Blocked
8	No. Of Test Cases Un Executed
9	Total No. Of Defects Identified
10	Critical Defects Count
11	Higher Defects Count
12	Medium Defects Count
13	Low Defects Count
14	Customer Defects
15	No.of defects found in UAT

Test Metrics

- **% of Test cases Executed:**
  No.of Test cases executed / Total No. of Test cases written) * 100

- **% of test cases NOT executed:**
  (No.of Test cases NOT executed/Total No. of Test cases written) * 100

- **% Test cases passed**
  (No.of Test cases Passed /Total Test cases executed) * 100

- **% Test cases failed**
  (No.of Test cases failed / Total Test cases executed) * 100

- **%Test cases blocked**
  (No.of test cases blocked / Total Test cases executed) * 100

Test Metrics

- **Defect Density: Number of defects identified per requirement/s**
  No.of defects found / Size(No. of requirements)
- **Defect Removal Efficiency (DRE):**
  (A / A+B) * 100
  (Fixed Defects / (Fixed Defects + Missed defects)) * 100
  - A- Defects identified during testing/ Fixed Defects
  - B- Defects identified by the customer/Missed defects
- **Defect Leakage:**
  (No.of defects found in UAT / No. of defects found in Testing) * 100
- **Defect Rejection Ratio:**
  (No. of defect rejected /Total No. of defects raised) * 100
- **Defect Age:** Fixed date-Reported date
- **Customer satisfaction** = No.of complaints per Period of time