

SNS COLLEGE OF TECHNOLOGY

Kurumbapalayam (Po), Coimbatore – 641 035

An Autonomous Institution

Accredited by NAAC – UGC with ‘A++’ Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

**COURSE NAME: 23ITO201- Software Testing
(OPEN ELECTIVE)**

III YEAR / VI SEMESTER

Unit 5 - TEST AUTOMATION

Topic : Project, Progress and Productivity Metrics

Empathy

Software testing metrics



Progress

Metrics indicate the progress of the software testing process.



Quality

Metrics measure the quality of the software being tested.



Productivity

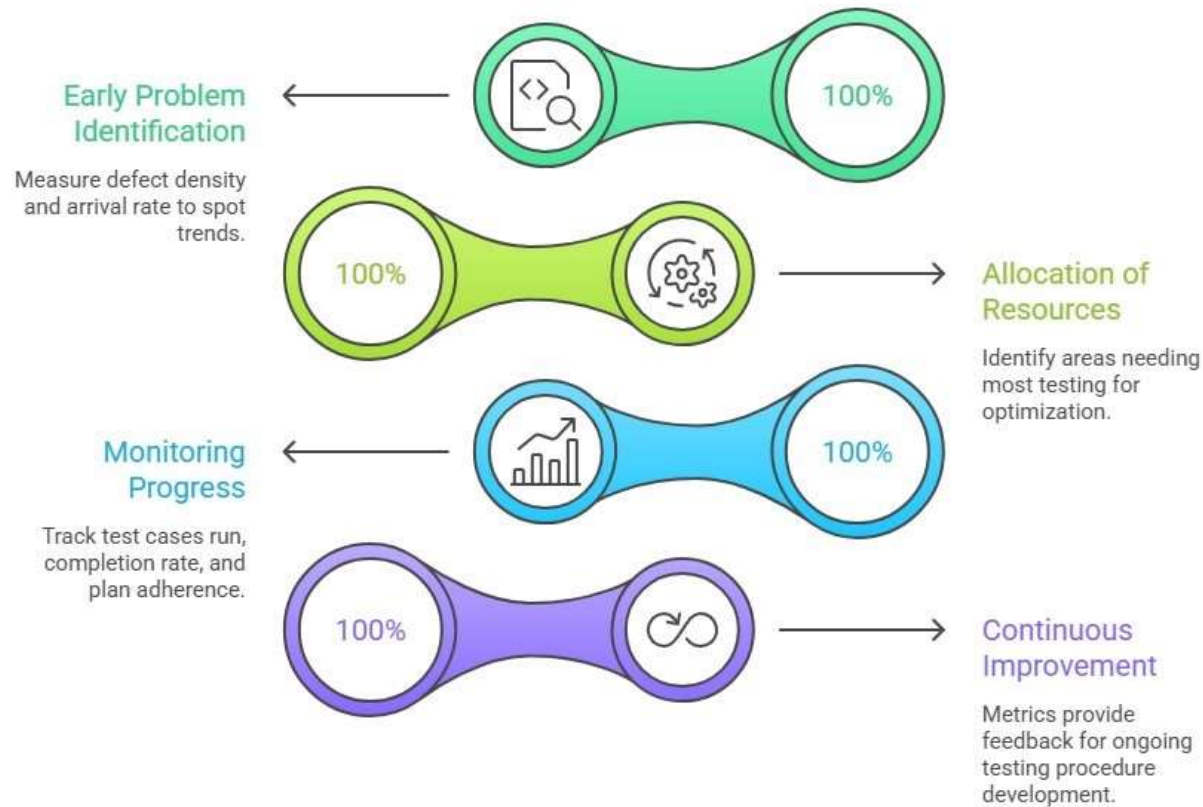
Metrics assess the productivity of the software testing team.



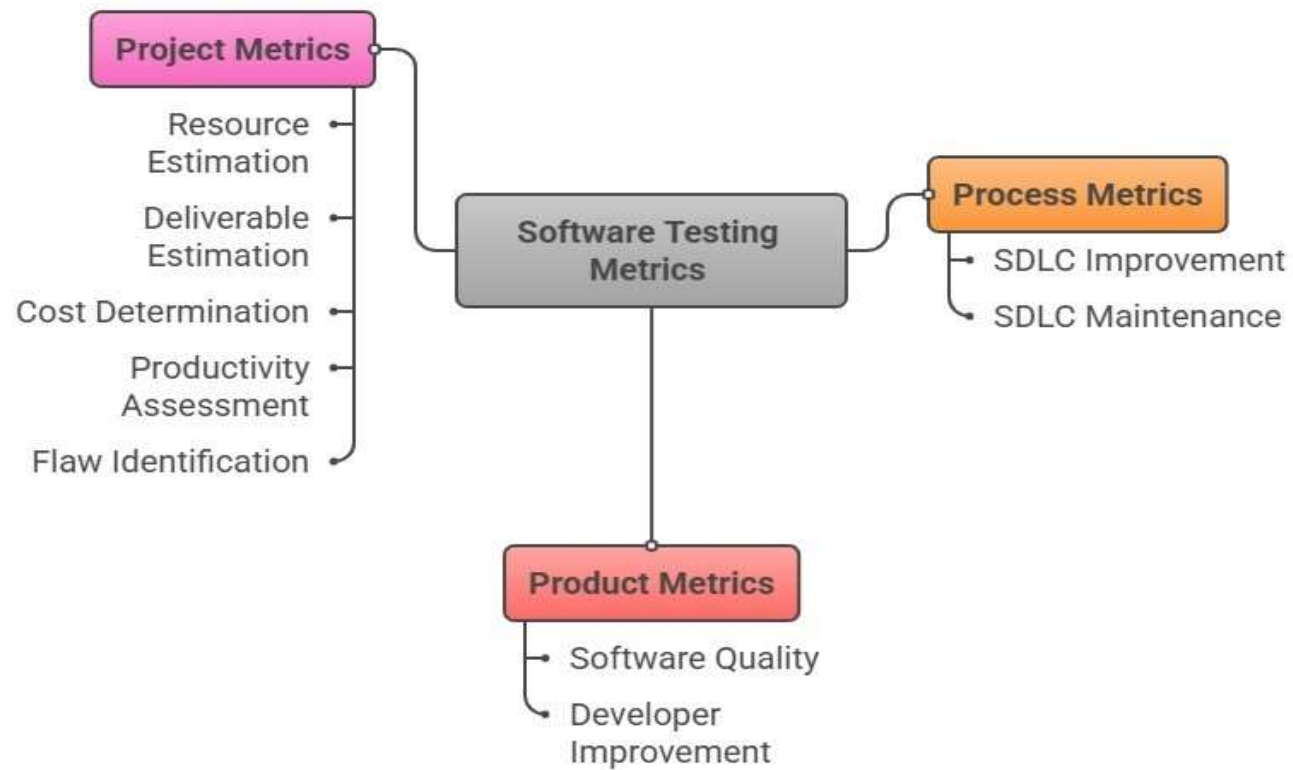
Health

Metrics reflect the overall health of the software testing process.

Importance of Metrics in Software Testing



Types of Software Testing Metrics



Software Metrics Comparison

Metric	Description
 Defect Metrics	Understand software quality aspects
 Schedule Adherence	Time difference between expected and actual execution
 Defect Severity	Impact of defect on software quality
 Test Case Efficiency	Effectiveness of test cases in detecting problems
 Defects Finding Rate	Pattern of flaws over a period of time
 Defect Fixing Time	Time taken to remedy a problem
 Test Coverage	Number of test cases assigned to the program
 Defect Cause	Figure out what's causing the problem

Example of Software Test Metrics Calculation:

Let's take an example to calculate test metrics:

S No.	Testing Metric	Data retrieved during test case development
1	No. of requirements	5
2	The average number of test cases written per requirement	40
3	Total no. of Test cases written for all requirements	200
4	Total no. of Test cases executed	164
5	No. of Test cases passed	100
6	No. of Test cases failed	60
7	No. of Test cases blocked	4
8	No. of Test cases unexecuted	36
9	Total no. of defects identified	20
10	Defects accepted as valid by the dev team	15
11	Defects deferred for future releases	5
12	Defects fixed	12

$$\begin{aligned}
 1. \text{ Percentage test cases executed} &= (\text{No of test cases executed} / \text{Total no of test cases written}) \times 100 \\
 &= (164 / 200) \times 100 \\
 &= 82
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Test Case Effectiveness} &= (\text{Number of defects detected} / \text{Number of test cases run}) \times 100 \\
 &= (20 / 164) \times 100 \\
 &= 12.2
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Failed Test Cases Percentage} &= (\text{Total number of failed test cases} / \text{Total number of tests executed}) \times 100 \\
 &= (60 / 164) * 100 \\
 &= 36.59
 \end{aligned}$$

$$\begin{aligned}
 4. \text{ Blocked Test Cases Percentage} &= (\text{Total number of blocked tests} / \text{Total number of tests executed}) \times 100 \\
 &= (4 / 164) * 100 \\
 &= 2.44
 \end{aligned}$$

$$\begin{aligned}
 5. \text{ Fixed Defects Percentage} &= (\text{Total number of flaws fixed} / \text{Number of defects reported}) \times 100 \\
 &= (12 / 20) * 100 \\
 &= 60
 \end{aligned}$$

$$\begin{aligned}
 6. \text{ Accepted Defects Percentage} &= (\text{Defects Accepted as Valid by Dev Team} / \text{Total Defects Reported}) \times 100 \\
 &= (15 / 20) * 100 \\
 &= 75
 \end{aligned}$$

$$\begin{aligned}
 7. \text{ Defects Deferred Percentage} &= (\text{Defects deferred for future releases} / \text{Total Defects Reported}) \times 100 \\
 &= (5 / 20) * 100 \\
 &= 25
 \end{aligned}$$

Activity

Activity: Understanding Project, Progress & Productivity Metrics



Activity Title

“Measure Your Project Performance”



Group Formation

- Form groups of 3–5 students



Task Description

Each group will analyze a **sample project** and identify different types of metrics:

- Project Metrics
- Progress Metrics
- Productivity Metrics

Metric Type	Example Metric	Value (Sample)
Project Metric	Schedule variance	+2 days delay
Progress Metric	% Completion	70%
Productivity	Test cases/day	25

Example Outcome

For a **web project**:

- Project Metric → 3 days delay
- Progress Metric → 80% completed
- Productivity Metric → 30 test cases/day

👉 Conclusion: Project slightly delayed but team productivity is good.

MCQs: Project, Progress & Productivity Metrics

1. Project metrics are used to:

- A) Cook food
- B) Measure project performance
- C) Design UI
- D) Write code

Answer: B) Measure project performance

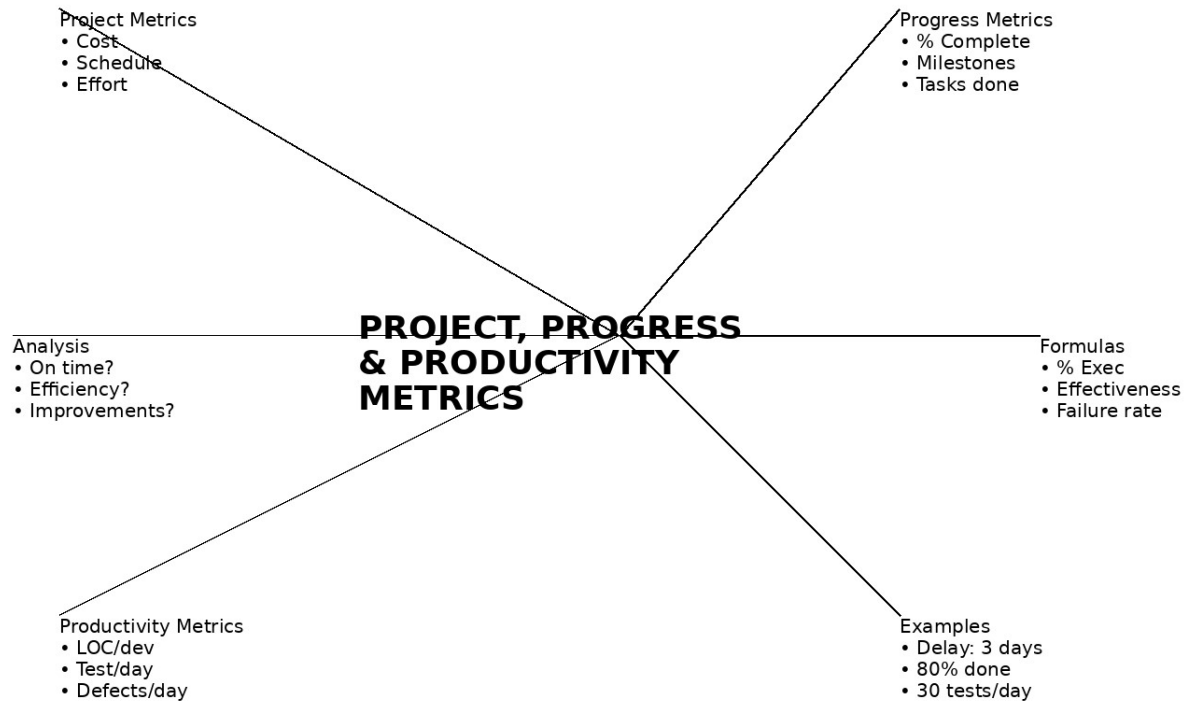
2. Which metric measures the status of work completed?

- A) Productivity metric
- B) Progress metric
- C) Quality metric
- D) Risk metric

Answer: B) Progress metric

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MINDMAP



TEXT BOOKS	
1.	Srinivasan Desikan and Gopalaswamy Ramesh, —Software Testing – Principles and Practices, Pearson Education, 2006.
REFERENCES	
1.	Ilene Burnstein, —Practical Software Testing, Springer International Edition, 2003
2.	Edward Kit, Software Testing in the Real World – Improving the Process, Pearson Education, 1995
3.	Boris Beizer, Software Testing Techniques – 2nd Edition, Van Nostrand Reinhold, New York, 1990.
4.	Aditya P. Mathur, —Foundations of Software Testing _ Fundamental Algorithms and Techniques, Dorling Kindersley (India) Pvt. Ltd., Pearson Education, 2008.
5.	https://www.geeksforgeeks.org/software-testing/automation-testing-software-testing/

THANK YOU!

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