TDM and TEM

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Definition :

Test Data Management (TDM) is the process for providing controlled data access to modern teams throughout the Software Development Life cycle (SDLC).

The Different Test Data Management Strategies:

1.Analyze Before Finalizing Data:

*One of the main strategies to follow is to ensure the creation of all data sets needed for test execution.

*Suppose it is an acceptance testing phase. In that case, the test data management must propagate a data creation initiative that grabs all possible data types relevant to end-to-end acceptance testing.

2.Mimic the Production Scenario:

*Adding to the data analysis part, the production environment forms an equally important aspect of data organization. Having a clear idea of the production environment and then checking for missing data elements is vital.

*Once identified, they must be added to the test data management records.

3.Foster Automation:

*Creating test data is not easy, especially with the volume and veracity of requirements in modern digital application testing initiatives.

*However, there is a silver lining to the cloud. Just like test automation, the creation of test data can also be automated.

4.Protect Confidential and Sensitive Data:

*Today, many enterprise applications run on the cloud or conform to the cloud-native paradigm.

*From a cloud-testing perspective, this implies using sensitive and private data in large volumes in the test environment to check and validate the performance of the cloud-based application.

5.Maintain a Centralized Test Data Repository:

By maintaining a centralized test data repository, enterprises can significantly lower the time for future test initiatives as the data for testing will be readily available.

The features of Test Data Management:

1.Best Practices for Test Data Management

2.Focus on the security of the data.

3.Keep the real and test data isolated from each other.

4.Keep a focus on application security.

5.Automate data management and usage.

6.Refresh data using a central repository.

7.Perform continuous data analysis to update test data as and when necessary.

Test environment management (TEM)

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Definition:

Test environment management (TEM) is a function in a software delivery process which aids the software testing cycle by providing a validated, stable and usable test environment to execute the test scenarios or replicate bugs.

Activities:

The activities under the TEM function include:

1.Maintaining a central repository of test-environments in scope with their latest version and connectivity details (Information management).

2.Allocation of test environments (booking/scheduling) to teams as per requirement. (Demand management).

3.Creation of new test environments as per requirement. (Supply management).

4.Environment Monitoring (Monitoring).

5.Deleting/ updating outdated test-environments and its details (Housekeeping).

6.Preliminary investigation of issues on the environment and sometimes co-ordination till an issue resolution (Incident Management).

7.Analyzing data for environment issues, identifying trends and taking pro-active steps to resolve issues / co-coordinating for a long term fix. (Problem Management).

8.Test data management to ensure that test data is available to testers when needed via a TDM tool or test data refresh from other environments.

9.Status Accounting to report on service, usage, and availability metrics to provide full transparency into test environment management activities

10.Continuous improvement to continuously evaluate test environment management services for improvement opportunities (people, process, and tools).

11.Automation to eliminate manual tasks as much as possible to improve efficiency.

Tools:

1.Configuration management database software : This tool would be required to maintain a repository of the environment components and its versions. The data in this tool would also be helpful in incident management and problem management.

2.Booking tool : This tool would be required to capture the allocation of test environments and to check for the availability of the environments. Usage analysis can also be captured in it.

3.Problem / incident management tools : This tool would be used to capture the problem / incident data and to manage the life-cycle of the incident / problem. Reports generated based on this data would give good insights into the health of the test environments.

4.Test data management tool: This tool allows testers to create, recycle, mask, and use their test data on demand.

5.Many teams use spreadsheets instead of using specific tools for the first two areas if the data is less. However, if the data is more, it is recommended to use specialized tools for it.

Why Is the Test Environment Management Process Important?

1.In today's ever-changing dynamic IT/Software field, requirements keep changing and evolve as technology evolves. There is a complex entanglement between three dimensions – namely cost, quality and time.

2.Ideally, if we have sufficient budget and time, software teams will be able to implement a high-quality product. In practice though, it's rarely the case that projects have the right budget and time.

3.More often, projects run over budget and time constraints. As a result, the quality of the product suffers.

4.It's rarely the case that projects have the right budget and time.