



Preparation to ISTQB Foundation Level Certification Exam

Testing Tools

By Vladimir Arutin

Keywords

Data-driven testing - A scripting technique that stores test input and expected results in a table or spreadsheet, so that a single control script can execute all of the tests in the table. Data-driven testing is often used to support the application of test execution tools such as capture/playback tools.

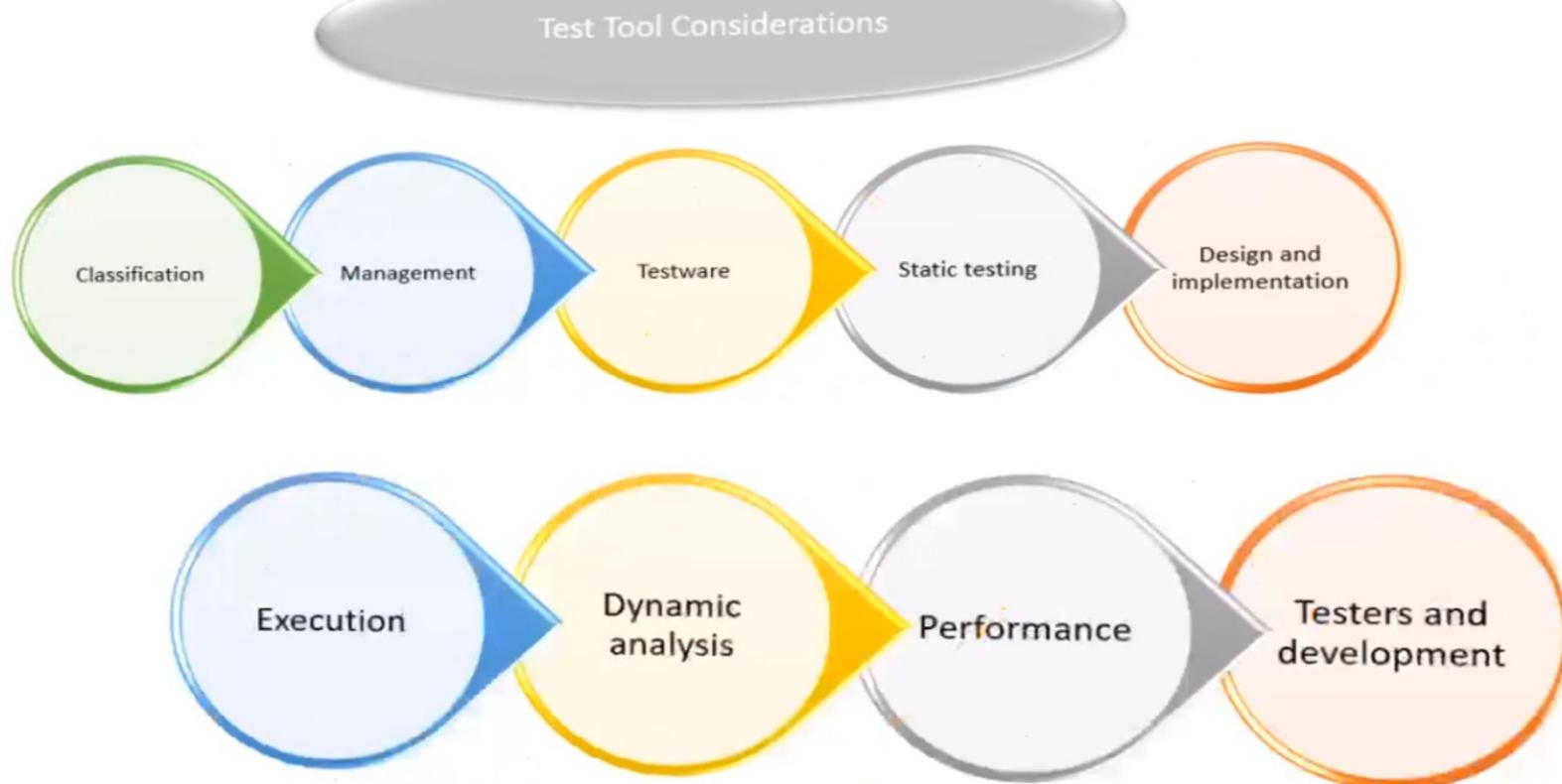
Keyword-driven testing (action word-driven testing) – A scripting technique that uses data files to contain not only test data and expected results, but also keywords related to the application being tested. The keywords are interpreted by special supporting scripts that are called by the control script for the test.

Performance testing tool – A test tool that generates load for a designated test item and that measures and records its performance during test execution.

Test automation - The use of software to perform or support test activities, e.g., test management, test design, test execution and results checking.

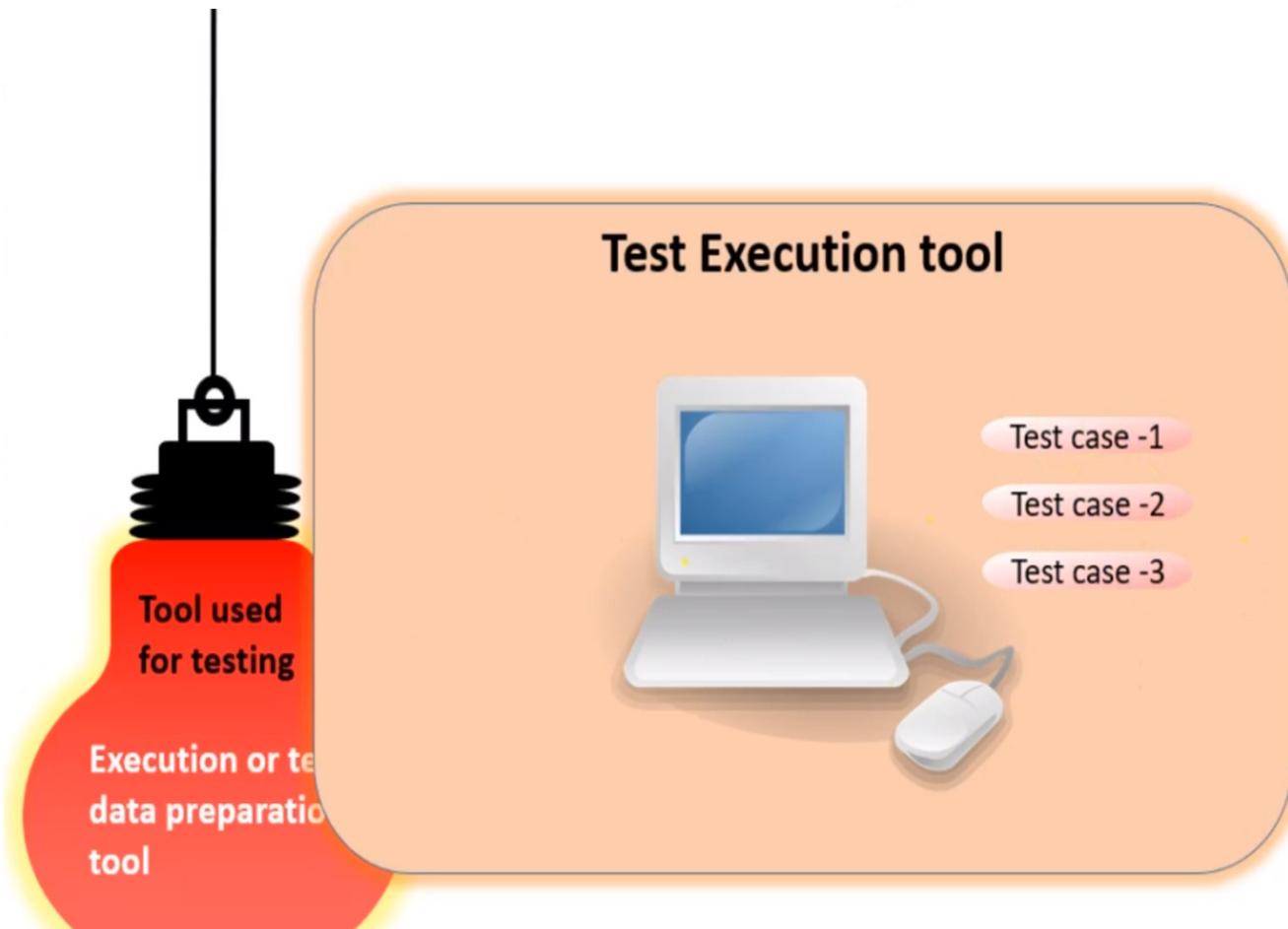
Test execution tool - A test tool that executes tests against a designated test item and evaluates the outcomes against expected results and post conditions.

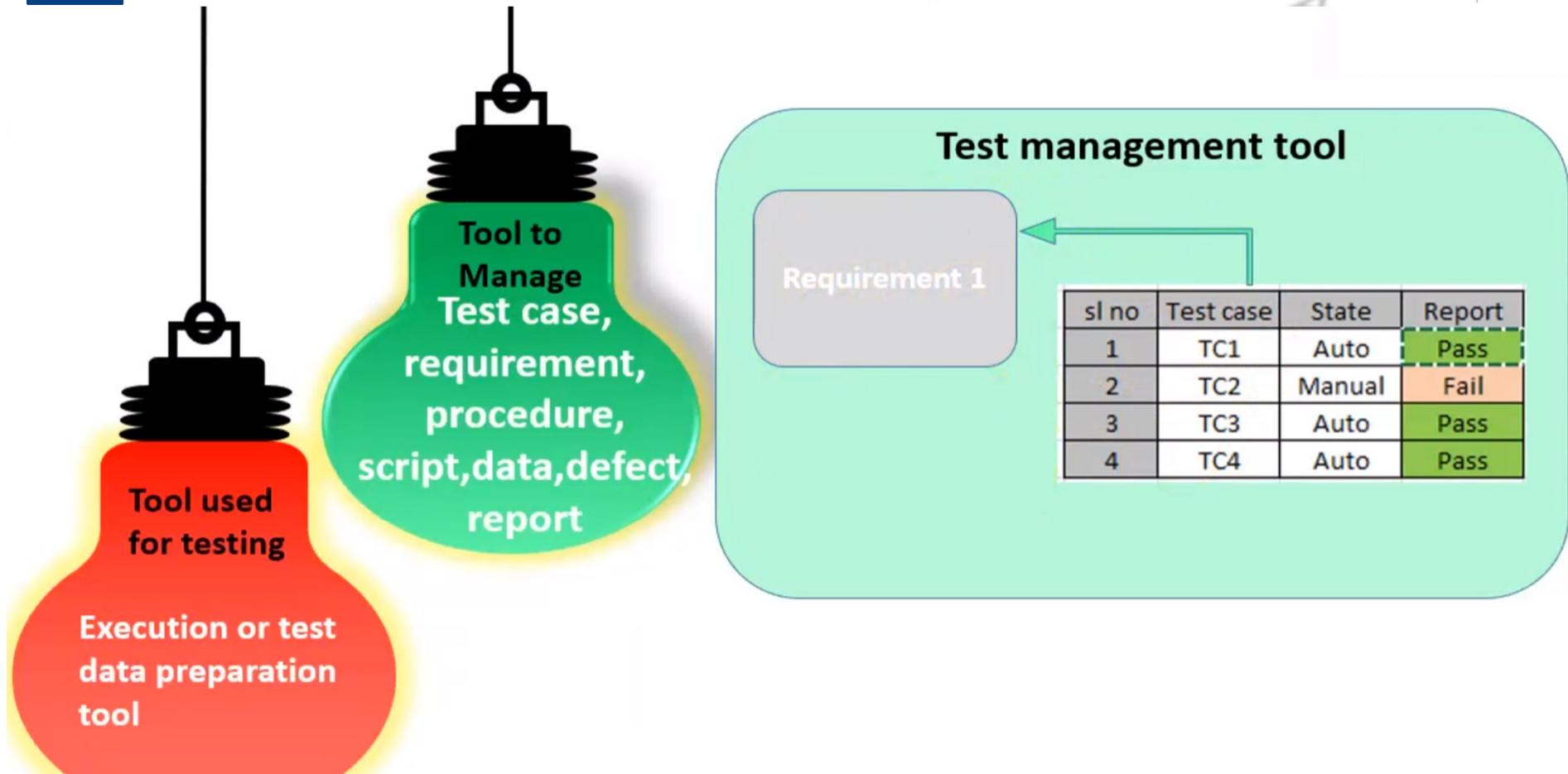
Test management tool - A tool that provides support to the test management and control part of a test process. It often has several capabilities, such as testware management, scheduling of tests, the logging of results, progress tracking, incident management and test reporting.

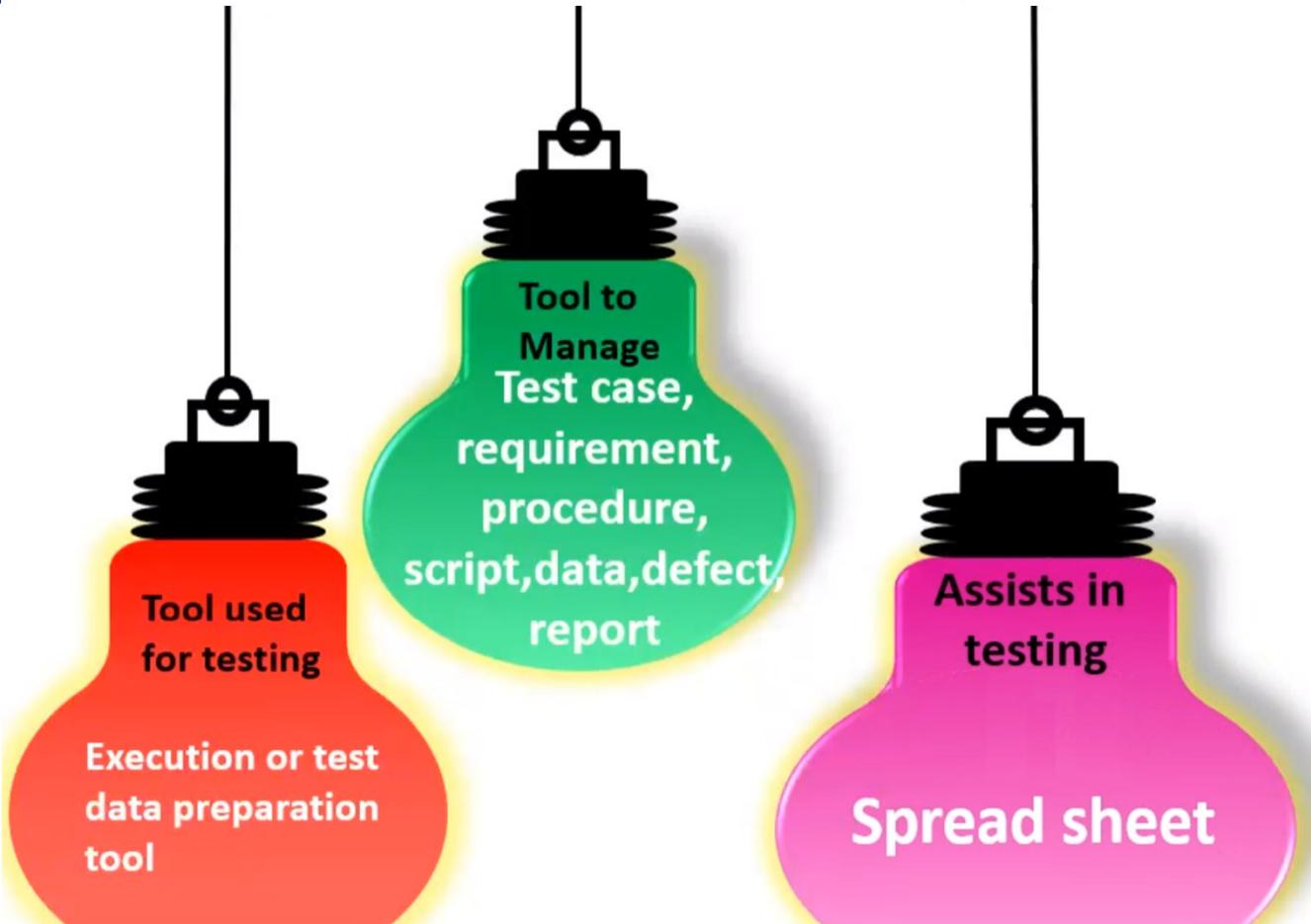


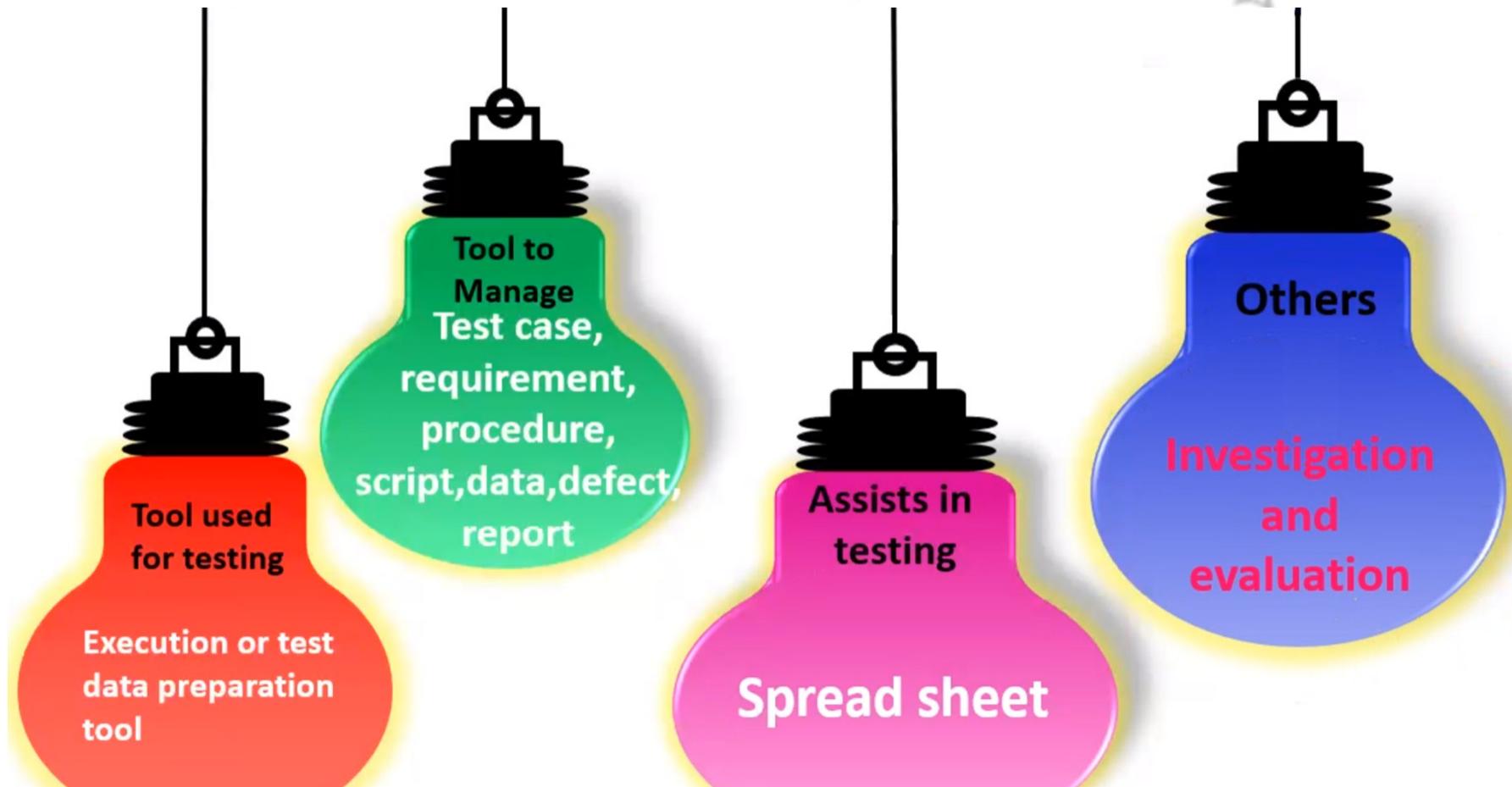
Effective Use of Tools













Tool used
for testing

Execution or test
data preparation
tool



Spread sheet

Others

Investigation
and
evaluation



TEST TOOL CLASSIFICATION





Based on Test activity

More than one activity

Important Point

Intrusive tool : Tools that effects the outcome of the test.

Probe effect : The consequence of using intrusive tool.



Probe Effect Example

The actual response times for an application may be different due to the extra instructions that are executed by a performance testing tool

licensing

Based on Test activity

More than one activity

Important Point

Intrusive tool : Tools that effects the outcome of the test.

Probe effect: The consequence of using intrusive tool.

Tool Support for the management of testing and testware



Tool support for static testing



Tools that support reviews

Checklist		
Questions	Yes/No	Remark
Is the indentations followed ?		
Is variable Starting with Test_Var?		
Is variable length less than 10?		
Is the variable declared		

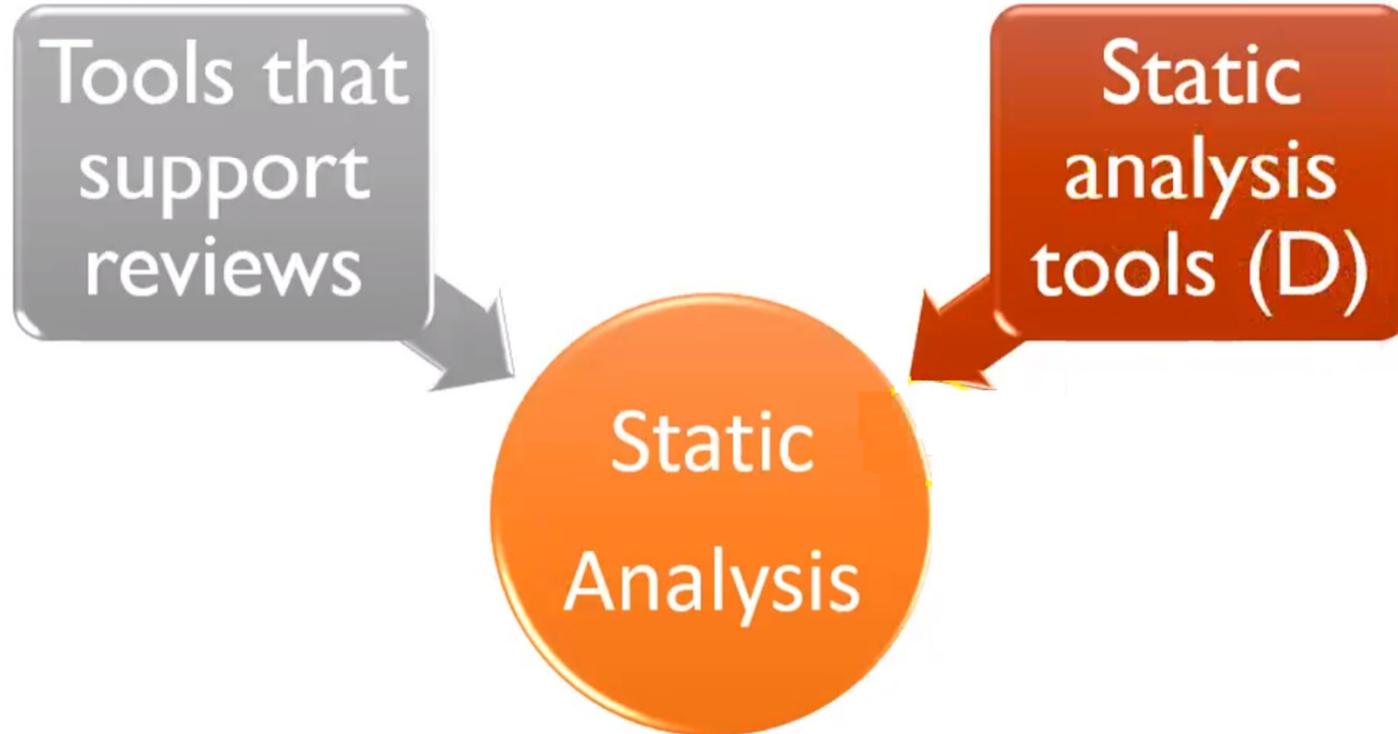
Example

CODE

```
MotorMovement()
{
    If(speed =>150)
    {
        TempVal = TempMeas();
    }
    If(TempVal > 120)
        StopMotor;
}
```

Checklist		
Questions	Yes/No	Remark
Is the indentations followed ?	NO	For the last if not followed
Is variable Starting with Test_Var?	NO	No variable is named as guideline
Is variable length less than 10?	yes	
Is the variable declared	NO	

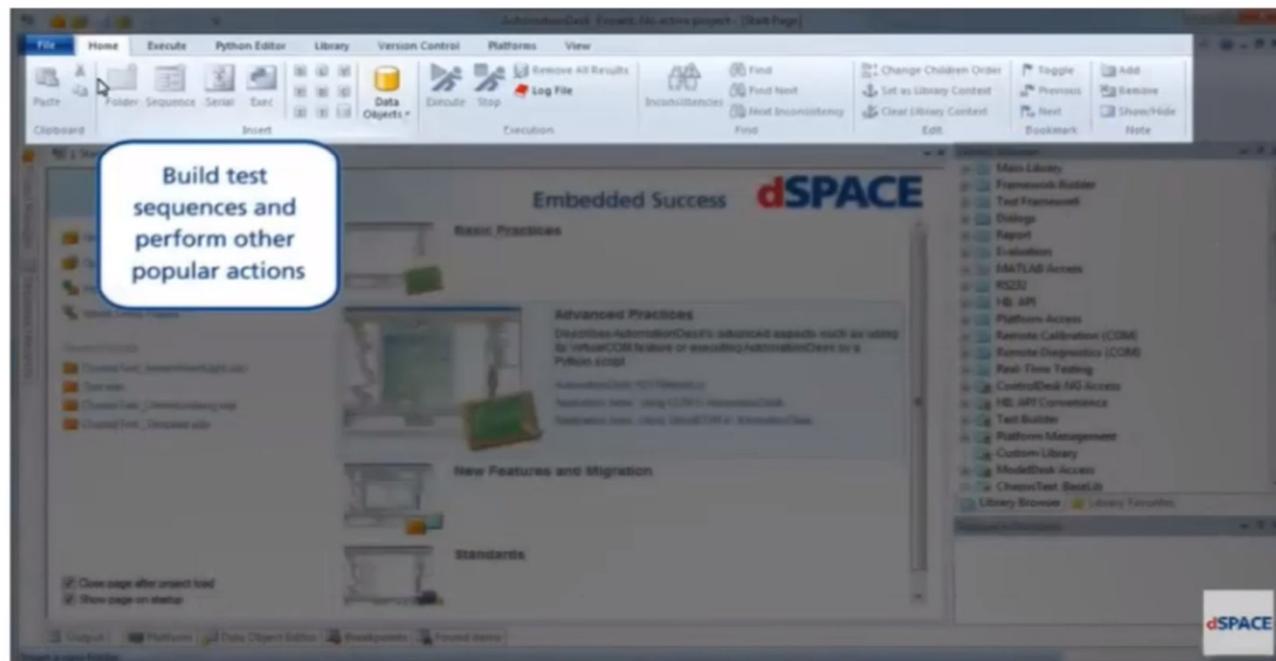
Tool support for static testing



Test design and implementation

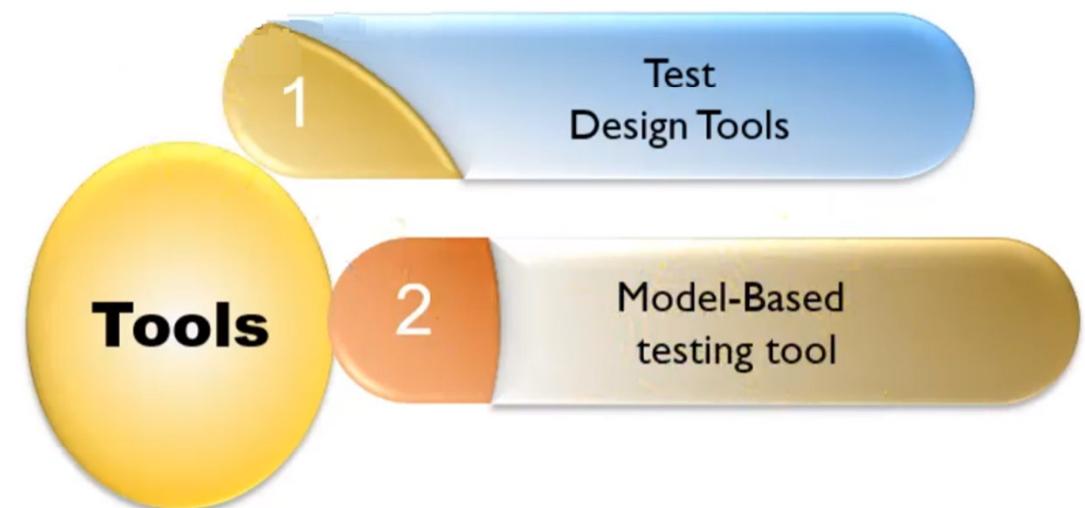


Test design and implementation

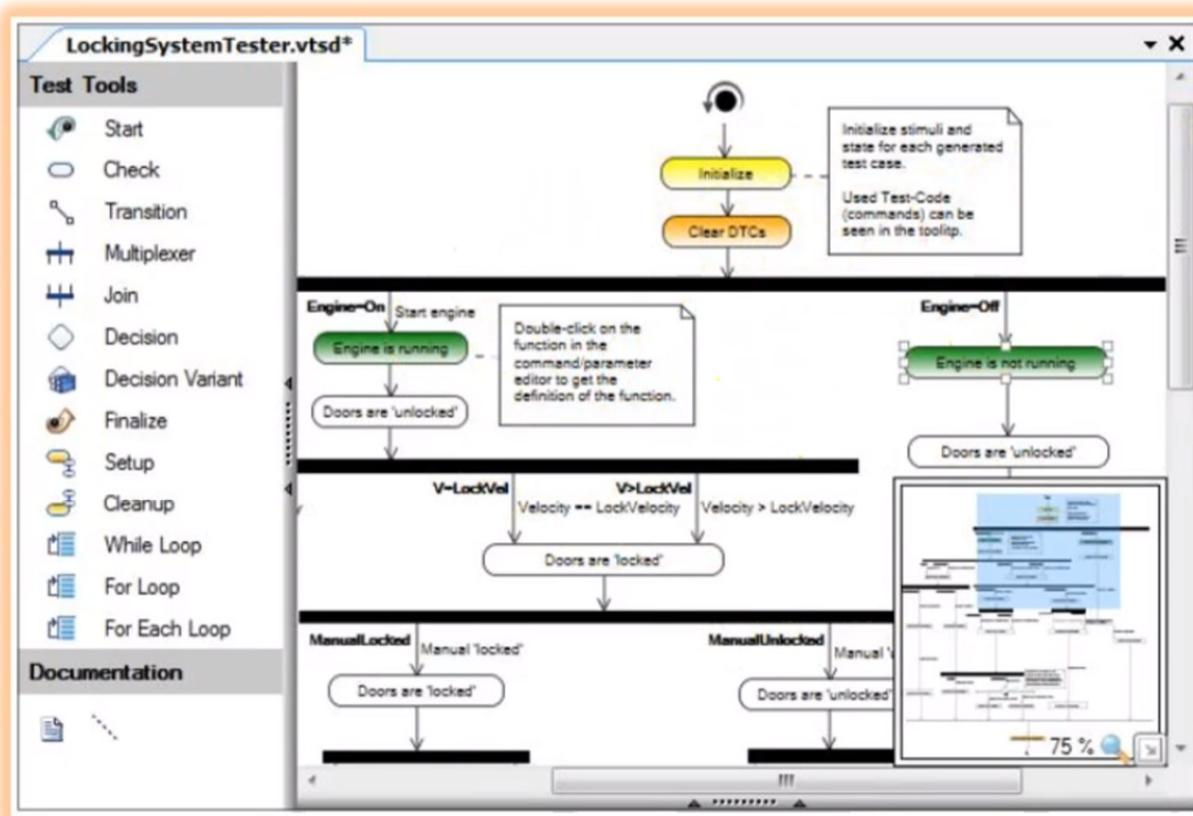


ools

Test design and implementation



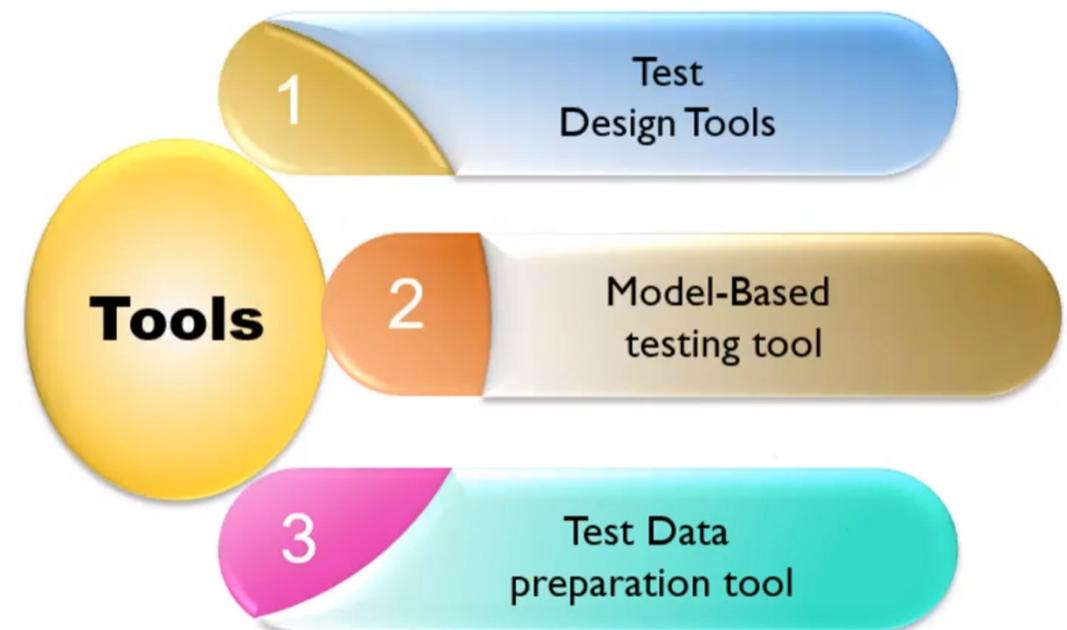
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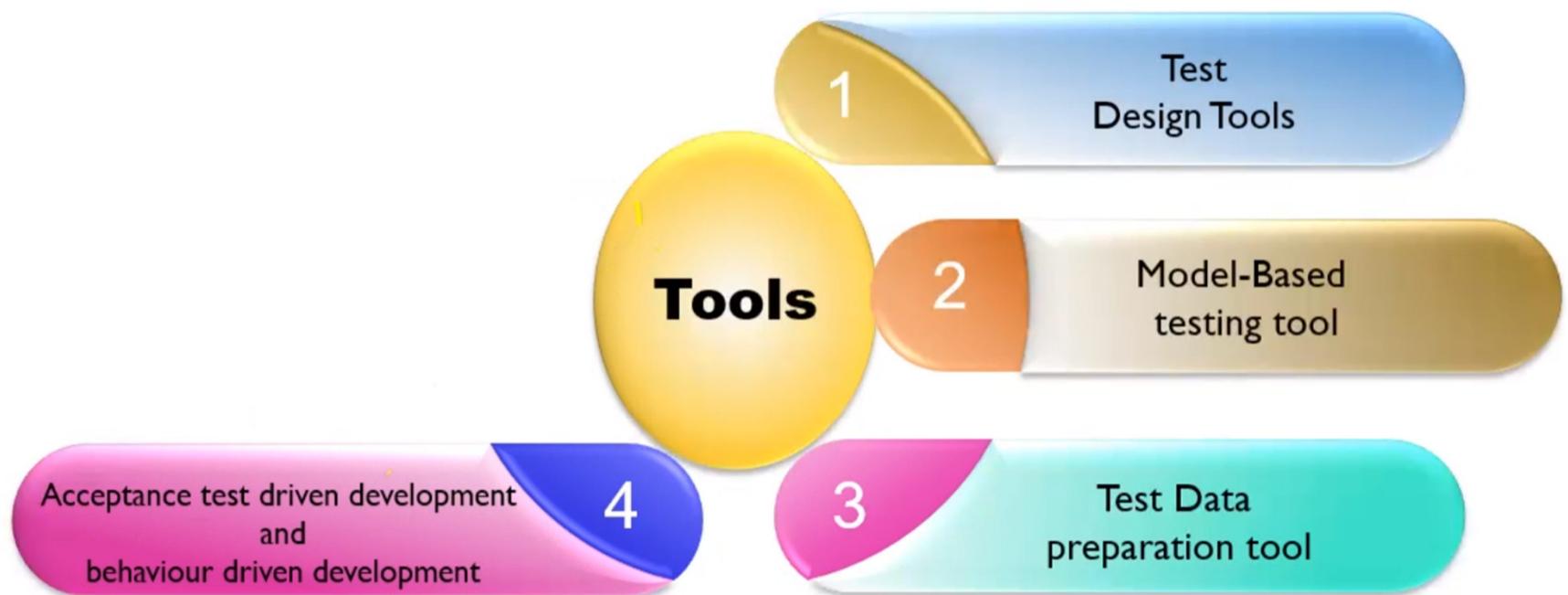
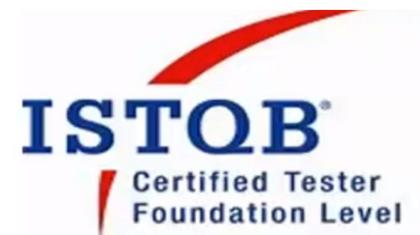
Model-Based
Testing Tools

Model-Based
Testing tool

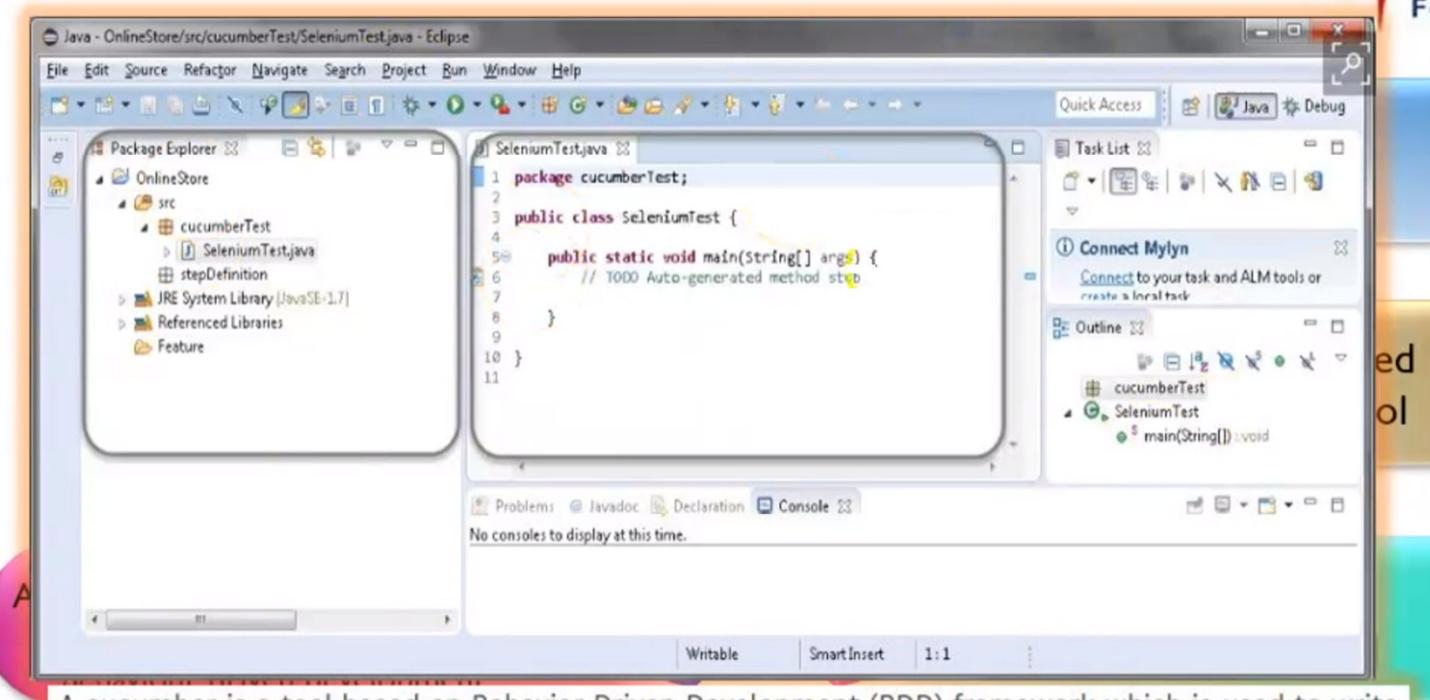
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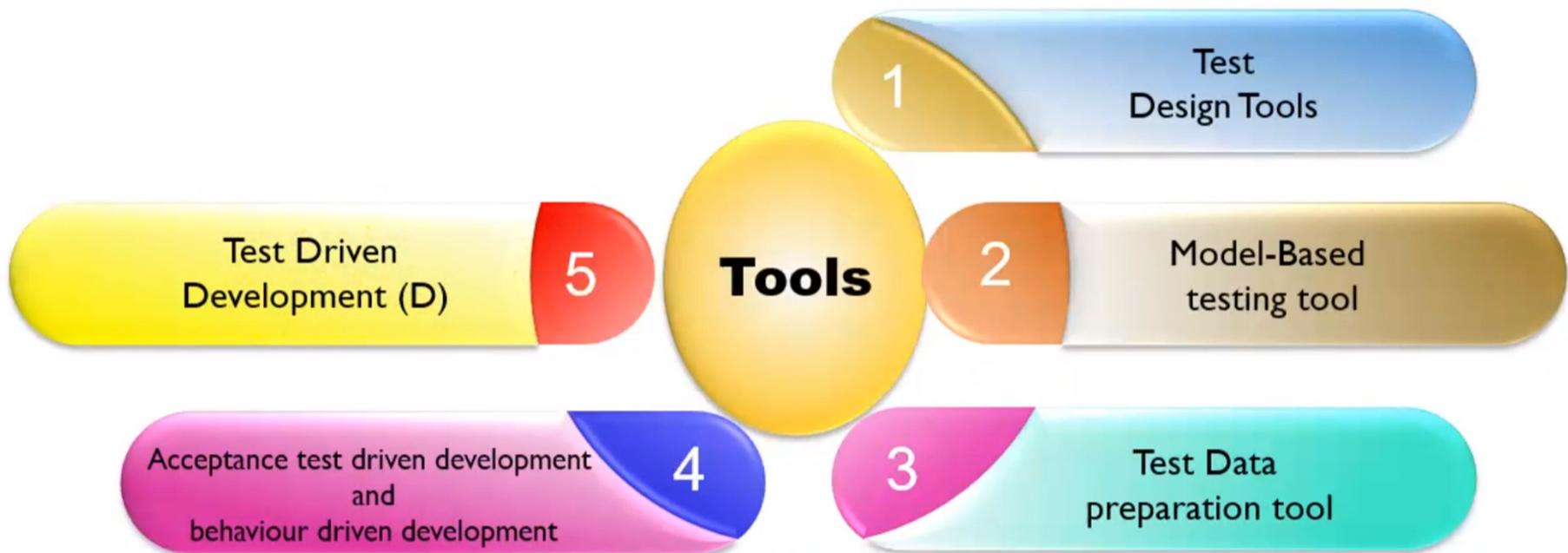


Test design and implementation



A cucumber is a tool based on Behavior Driven Development (BDD) framework which is used to write acceptance tests for the web application. It allows automation of functional validation in easily readable and understandable format (like plain English) to Business Analysts, Developers, Testers, etc.

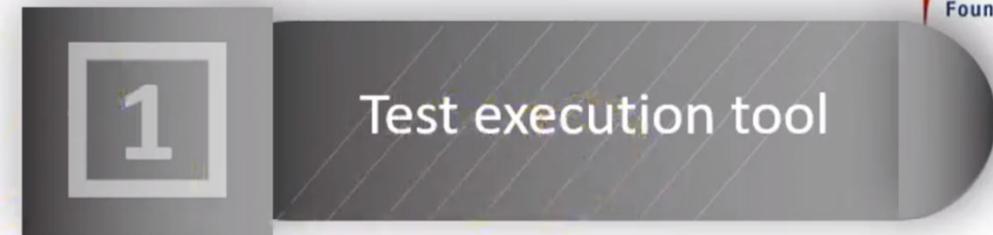
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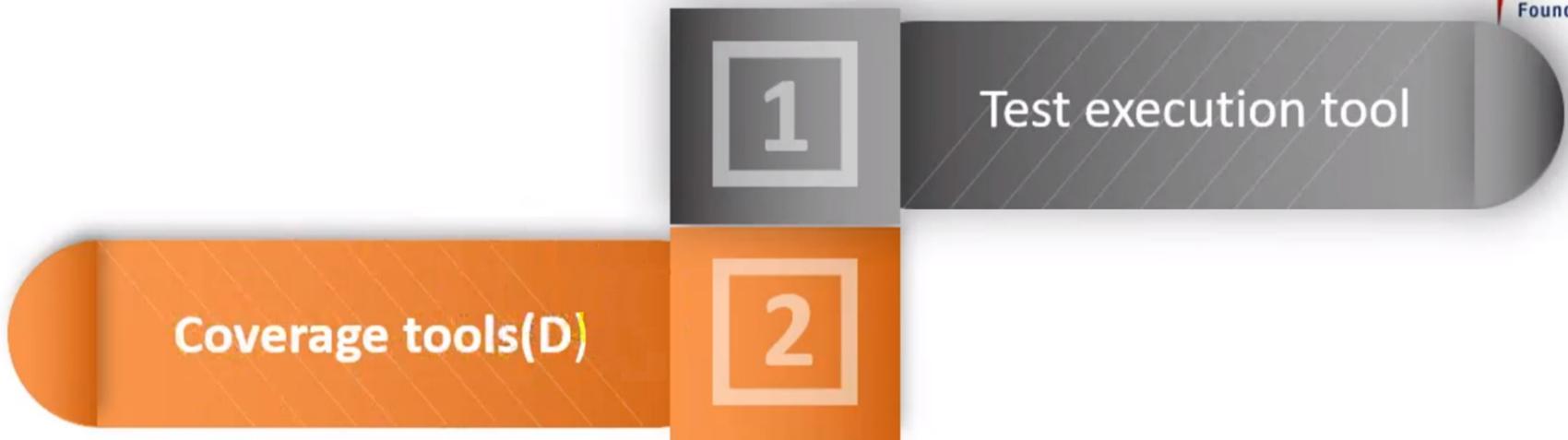
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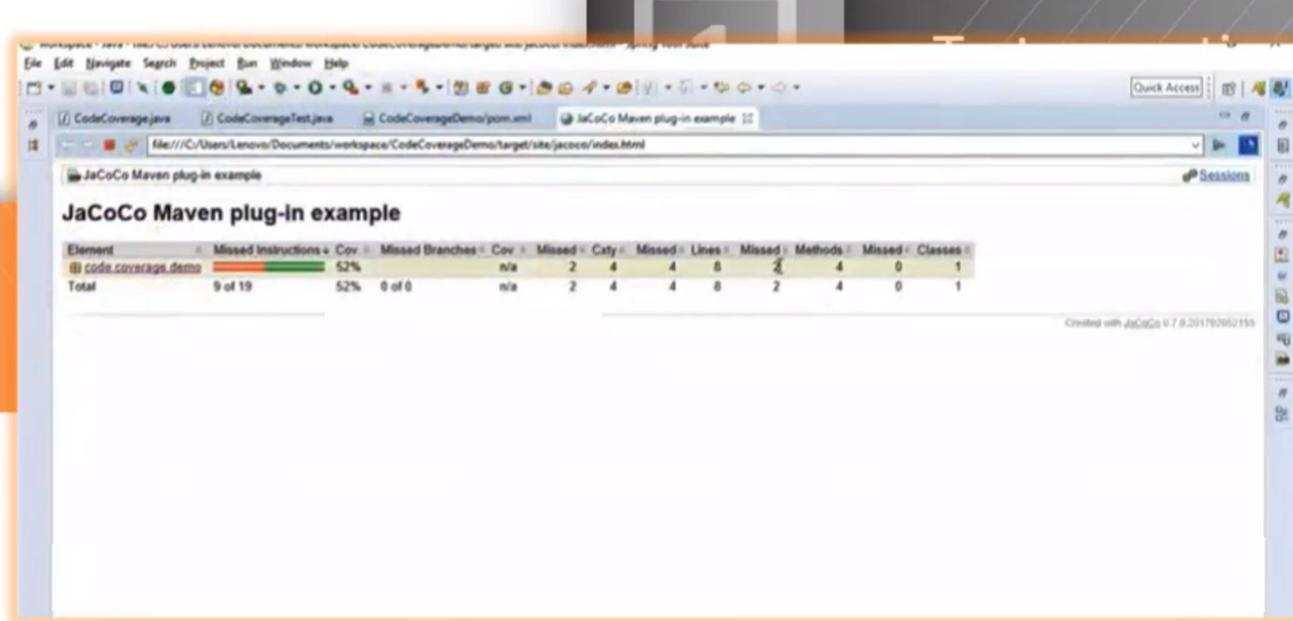
Test execution and logging



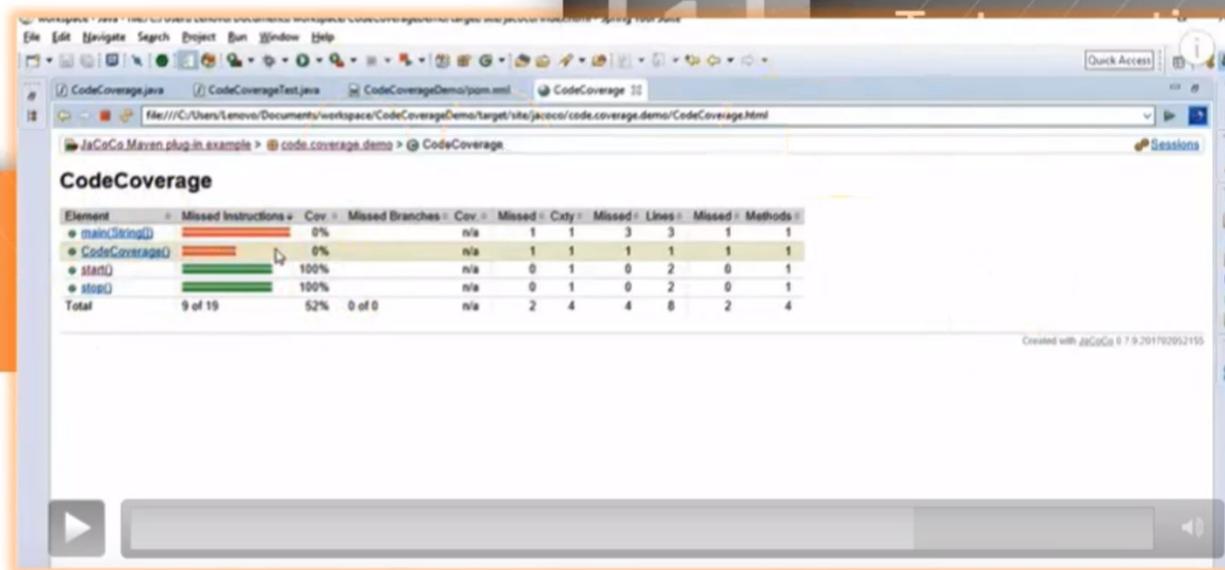
Test execution and logging



Test execution and logging



Test execution and logging



Test execution and logging



Test execution and logging



Coverage tools(D)

Unit test framework tool (D)

1

2

3

4

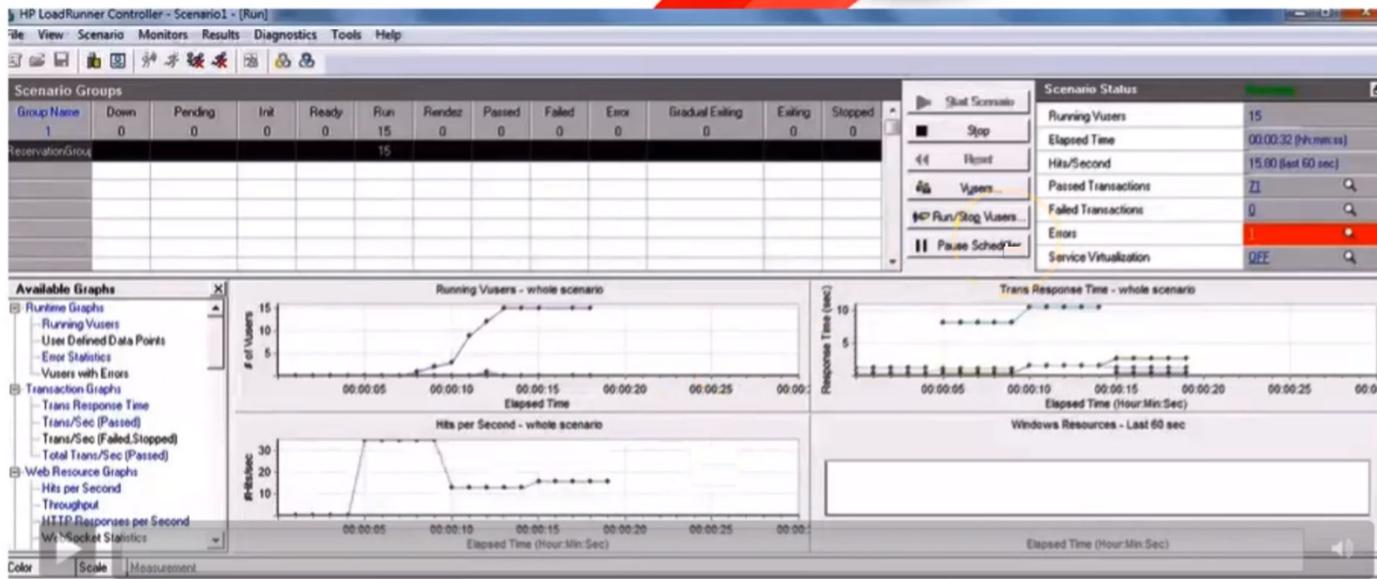
Test execution tool

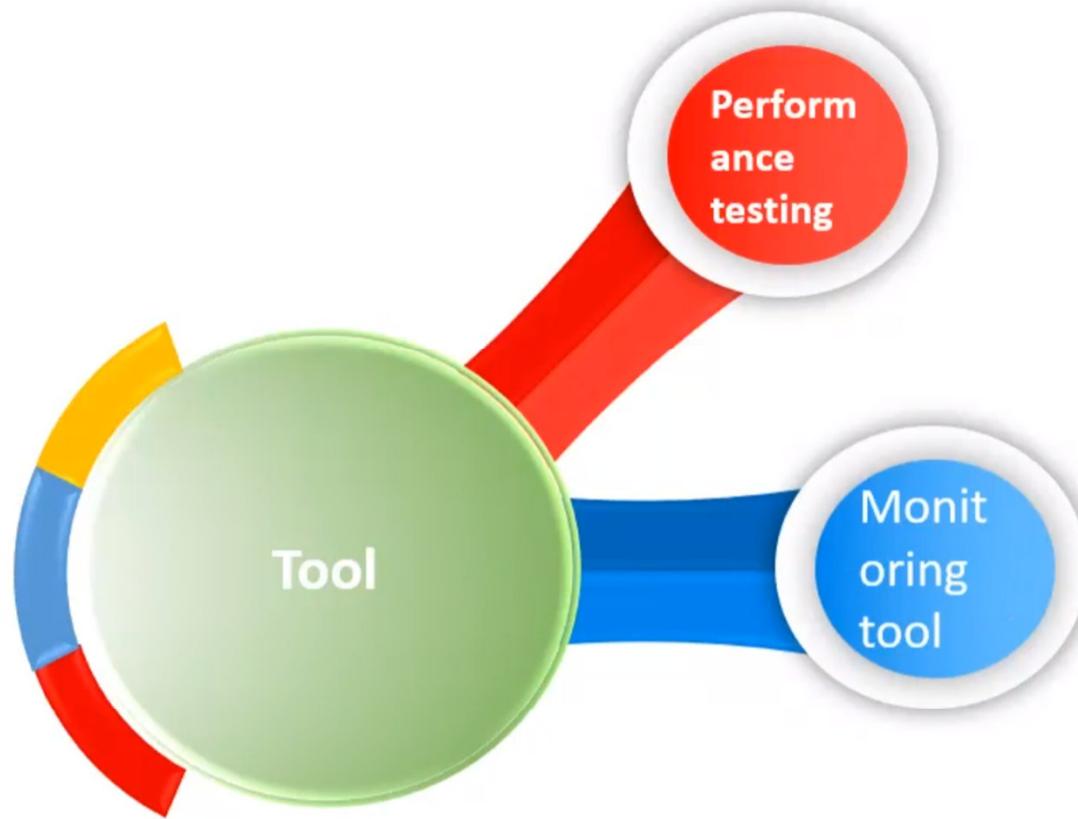
Test harness(D)



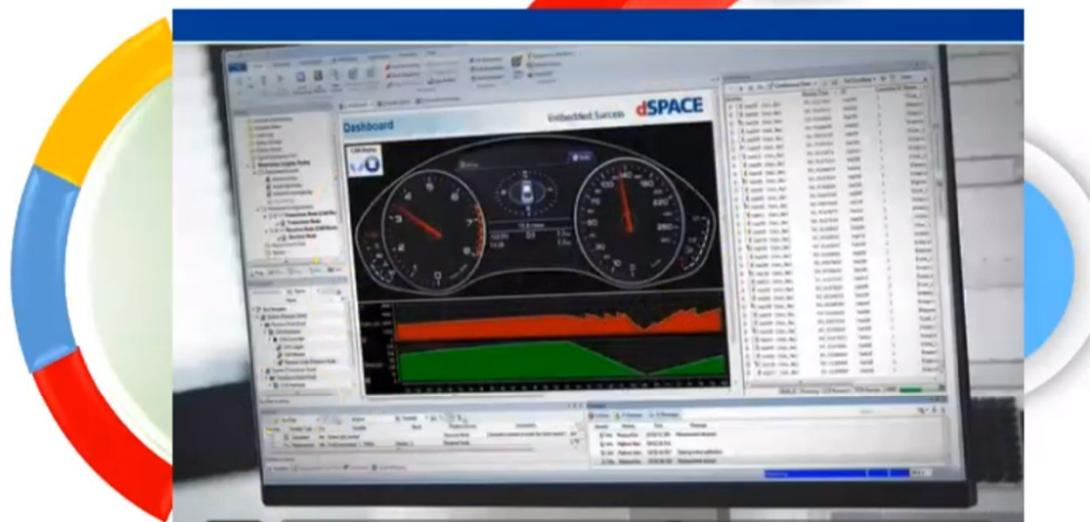


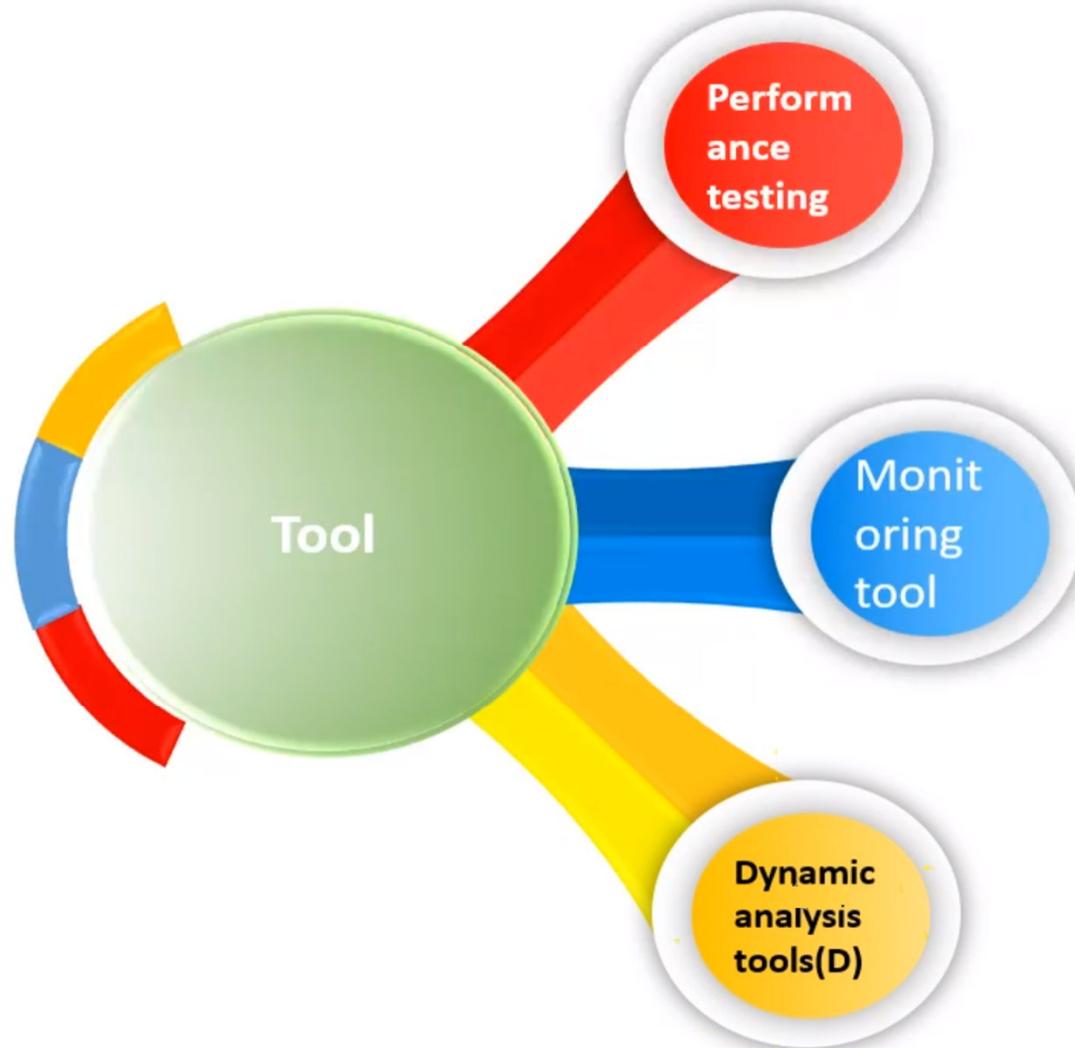
Performance
testing

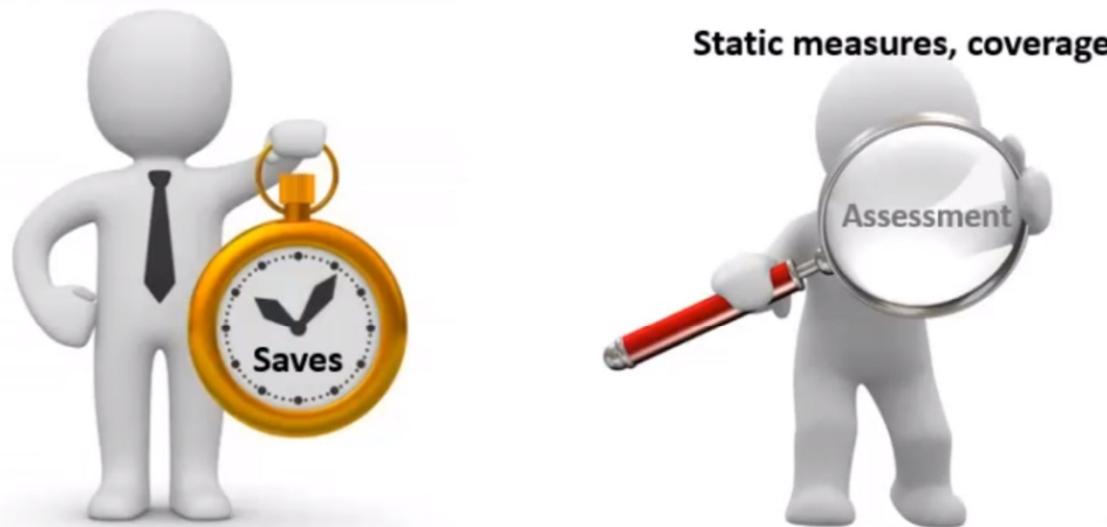




Performance
testing







Reduction in repetitive manual work



Potential risks of using tools



Potential risks of using tools



Capture and Recording

- Specific data and action
- Unstable : unexpected error
- smart image capturing
- maintenance required

Keyword-driven testing

- Describes Action
- Processes test data
- Inexperienced Tester

Data-driven testing

- Separates input and result
- Spread sheet or Scripts
- Experienced Tester

Model-Based testing

- Specification as Model
- System designer
- Creates Test case
- Save result in management tool



Point 1

- To produce useful information in a format that fits the needs of the organization

Point 2

- To maintain consistent traceability to requirements in a requirements

Point 3

- link with test object version information in the configuration management tool

Pilot Projects introduction



Deciding on standard ways of using, managing, storing, and maintaining the tool and the test assets

Gaining in-depth knowledge about the tool, understanding both its strengths and weaknesses

Understanding and configuring the tool to ensure these metrics can be captured and reported

Evaluating how the tool fits with existing processes and practices, and determining what would need to change

Assessing whether the benefits will be achieved at reasonable cost

Success Factors for Tools



1 | Rolling out the tool to the rest of the organization incrementally

2 | Adapting and improving processes to fit with the use of the tool

3 | Providing training, coaching, and mentoring for tool users

4 | Defining guidelines for the use of the tool

5 | Gather information from the actual use of the tool

6 | Monitoring tool use and benefits

7 | Providing support to the users of a given tool

8 | Gathering lessons learned from all users

Sample Question 1.

The principal attributes of tools and automation are

- A. Speed & efficiency
- B. Accuracy & precision
- C. All of the above
- D. None of the above

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Capture and replay facilities are least likely to be used to _____

- A. Performance testing
- B. Recovery testing
- C. GUI testing
- D. User requirements

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The Provision and Management of a controlled library containing all the configurations items is called as

- A. Configuration Control
- B. Status Accounting
- C. Configuration Identification
- D. None

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Which tool can be used to support and control part of the test management process?

- A. Coverage management tool
- B. Test management tool
- C. Data preparation tool
- D. Performance testing tool

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Sample Question 5.

Which tool store information about versions and builds of software and testware

- A. Test Management tool
- B. Requirements management tool
- C. Configuration management tool
- D. Static analysis tool

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Sample Question 6.

What test items should be put under configuration management?

- A. The test object, the test material and the test environment
- B. The problem reports and the test material
- C. Only the test object. The test cases need to be adapted during agile testing
- D. The test object and the test material

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Which one is not characteristic of test management tool?

- A. Support for the management of tests and the testing activities carried out
- B. Interfaces to test execution tools
- C. Quantitative analysis related to tests
- D. Check for consistency and undefined requirements

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Which defect can typically be discovered using a static analysis tool?

- A. Inconsistencies in numerical calculations
- B. Programming standards violations
- C. Problems related to system usability
- D. Internal and external system reliability

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- B. They are used by developers only
- C. They require compilation of code
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Which tool will be used to test the flag memory leaks and unassigned pointers

- A. Dynamic analysis tool
- B. Static Analysis tool.
- C. Maintenance tool.
- D. Configuration tool.

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Sample Question 11.

Some tools are geared more for developer use. For the 5 tools listed, which statement BEST details those for developers

- i) Performance testing tools.
 - ii) Coverage measurement tools.
 - iii) Test comparators.
 - iv) Dynamic analysis tools.
 - v) Incident management tools
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- A. i, iii. and iv. are more for developers
 - B. ii. and iv. are more for developers
 - C. ii, iii and iv. are more for developers
 - D. ii. and iii. are more for developers

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For which of the following would a static analysis tool be MOST useful?

- A. Supporting reviews
- B. Validating models of the software
- C. Testing code executed in a special test harness
- D. Enforcement of coding standards

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Find the mismatch

- A. Test data preparation tools – Manipulate Data bases
- B. Test design tools – Generate test inputs
- C. Requirement management tools – Enables individual tests to be traceable
- D. Configuration management tools – Check for consistency

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Sample Question 14.

Which of the following benefits are MOST likely to be achieved by using test tools?

- i) Easy to access information about tests and testing.
- ii) Reduced maintenance of testware.
- iii) Easy and cheap to implement.
- iv) Greater consistency of tests

- A. ii and iv
- B. ii and iii
- C. i and iv
- D. i and iii

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Which of the following are potential benefits of using test support tools?

- A. Ensuring greater consistency and minimizing software project risks
- B. Reducing repetitive work and gaining easy access to test information
- C. Performing objective assessment and reducing the need for training
- D. Allowing for greater reliance on the tool to automate the test process

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Which of the following are potential benefits of adding tools to the test process?

- I. Reduction of repetitive testing procedures.
 - II. Ability to hire testers with fewer technical skills.
 - III. Ability to get an objective assessment of progress.
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Which of the following is a potential risk in using test support tools?

- A. Under estimating the effort needed to maintain the test assets
- B. Losing access to important testing information when needed
- C. Relying too much on qualitative and quantitative assessments
- D. Lowering the morale of the test team because of repetition

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 - C. I, II and III
 - D. I, II and IV

Sample Question 19.

Which of the following are general risks of using test-support tools during the testing process?

- I. Underestimating the amount of time needed to learn the tool.
 - II. Ease of access to information about tests will be decreased.
 - III. There will be an increase in repetitive work for testers.
 - IV. Having unrealistic expectations for test-support tools.
 - V. Using test-support tools when manual testing would better serve.
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Sample Question 20.

With which of the following categories is a test comparator tool USUALLY associated?

- A. Tool support for performance and monitoring
- B. Tool support for static testing
- C. Tool support for test execution and logging
- D. Tool support for the management of testing and tests.

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A typical commercial test execution tool would be able to perform all of the following EXCEPT

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- B. Replaying inputs according to a programmed script
- C. Comparison of expected outcomes with actual outcomes
- D. Recording test inputs
- E. Reading test values from a data file

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Sample Question 22.

Which of the following provides the biggest potential cost saving from use of CAST?

- A. Test management
- B. Test design
- C. Test planning
- D. Test execution

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Sample Question 23.

Which of the following is likely to benefit most from the use of test tools providing test capture and replay facilities?

- A. Regression testing
- B. Integration testing
- C. System testing
- D. User acceptance testing

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Sample Question 24.

Which of the following is a risk of using a test execution tool based on record and playback?

- A. The ability to run automated scripts unattended may require increased hardware capacity.
- B. Testers may be tempted to create too many automated test scripts.
- C. Manual testers may be replaced by the tool and not be available when needed.
- D. Automated scripts may be unstable when encountering unexpected events.

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Sample Question 25.

Which of the following is TRUE when introducing a new tool into a test environment?

- A. Changes to existing test processes should not be needed with the new tool.
- B. A site license will be needed to reduce the cost per seat of the tool.
- C. The tool should be rolled out as quickly as possible to maximize ROI.
- D. Introducing the tool to the organization should start with a pilot project.

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Which of the following is TRUE when introducing a new tool into a test environment?

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Sample Question 26.

What should be considered when introducing a tool into an organization?

- A. Assessing the organizational maturity
- B. Counting the number of systems to be tested
- C. Calculating the ratio between programmers and testers
- D. Reviewing the exit criteria of previous projects

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Sample Question 27.

Which of the following is an objective of a pilot project for the introduction of a testing tool?

- A. Evaluate testers' competence to use the tool
- B. Complete the testing of a key project.
- C. Assess whether the benefits will be achieved at reasonable cost.
- D. Discover what the requirements for the tool are

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When a new testing tool is purchased, it should be used first by:

- A. A small team to establish the best way to use the tool
- B. Everyone who may eventually have some use for the tool
- C. The independent testing team
- D. The managers to see what projects it should be used in
- E. The vendor contractor to write the initial scripts

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Sample Question 29.

The place to start if you want a (new) test tool is:

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- B. Invite a vendor to give a demo
- C. Find out what your budget would be for the tool
- D. Analyse your needs and requirements

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**Which of the following can
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in an organization?**

- A. Providing coaching to users and defining usage guidelines
- B. Monitoring tool usage and reducing the need for risk analysis
- C. Improving processes and focusing more on component testing
- D. Assessing testing completion and minimizing code reviews

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Sample Question 31.

Which of the following are success factors when rolling out a new tool?

- I. Roll the tool out to the entire organization to ensure reasonably even coverage.
 - II. Avoid changing existing processes to reduce impact of the tool.
 - III. Provide training and mentoring to new users.
 - IV. Allow users to determine where the tool fits into the process best.
- A. I and II
 - B. I, III and IV
 - C. III
 - D. IV

Sample Question 31.

Which of the following are success factors when rolling out a new tool?

- I. Roll the tool out to the entire organization to ensure reasonably even coverage.
 - II. Avoid changing existing processes to reduce impact of the tool.
 - III. Provide training and mentoring to new users.
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- A. I and II
 - B. I, III and IV
 - C. 
 - D. IV

Sample Question 32.

Some tools are geared more for developer use. For the 5 tools listed, which statement BEST details those for developers

- i) Performance testing tools.
 - ii) Coverage measurement tools.
 - iii) Test comparators.
 - iv) Dynamic analysis tools.
 - v) Incident management tools
-
- A. i, iii. and iv. are more for developers
 - B. ii. and iv. are more for developers
 - C. ii, iii and iv. are more for developers
 - D. ii. and iii. are more for developers

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- A. i, iii. and iv. are more for developers
 - B. ii. and iv. are more for developers
 - C. ii, iii and iv. are more for developers
 - D. ii. and iii. are more for developers

Sample Question 33.

Which of the following benefits are MOST likely to be achieved by using test tools?

- i) Easy to access information about tests and testing.
- ii) Reduced maintenance of testware.
- iii) Easy and cheap to implement.
- iv) Greater consistency of tests

- A. ii and iv
- B. ii and iii
- C. i and iv
- D. i and iii

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- C. i and iv
- D. i and iii

Sample Question 34.

**Which of the following can
be considered as success factors when deploying a new tool
in an organization?**

- A. Providing coaching to users and defining usage guidelines
- B. Monitoring tool usage and reducing the need for risk analysis
- C. Improving processes and focusing more on component testing
- D. Assessing testing completion and minimizing code reviews

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Sample Question 35.

With which of the following categories is a test comparator tool USUALLY associated?

- A. Tool support for performance and monitoring
- B. Tool support for static testing
- C. Tool support for test execution and logging
- D. Tool support for the management of testing and tests.

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Sample Question 36.

For which of the following would a static analysis tool be MOST useful?

- A. Supporting reviews
- B. Validating models of the software
- C. Testing code executed in a special test harness
- D. Enforcement of coding standards

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Sample Question 37.

Which of the following is a potential risk in using test support tools?

- A. Under estimating the effort needed to maintain the test assets
- B. Losing access to important testing information when needed
- C. Relying too much on qualitative and quantitative assessments
- D. Lowering the morale of the test team because of repetition

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Sample Question 38.

Find the mismatch

- A. Test data preparation tools – Manipulate Data bases
- B. Test design tools – Generate test inputs
- C. Requirement management tools – Enables individual tests to be traceable
- D. Configuration management tools – Check for consistence

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Sample Question 39.

Which is not a test Oracle

- A. The existing system (For a bench mark)
- B. The code
- C. Individual's knowledge
- D. User manual

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Sample Question 40.

Designing the test environment set-up and identifying any required infrastructure and tools are a part of which phase

- A. Test Implementation and execution
- B. Test Analysis and Design
- C. Evaluating the Exit Criteria and reporting
- D. Test Closure Activities

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Sample Question 41.

Which of the following are potential benefits of using test support tools?

- A. Ensuring greater consistency and minimizing software project risks
- B. Reducing repetitive work and gaining easy access to test information
- C. Performing objective assessment and reducing the need for training
- D. Allowing for greater reliance on the tool to automate the test process

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Sample Question 42.

Which tool needs to interface with other office automation software in order to generate reports in the format required by the organization?

- A. Progress tracking tools
- B. Test management tools
- C. Metrics management tools
- D. Test execution tools

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Sample Question 43.

What type of tools to be used for Regression Testing

- A. Performance
- B. Record/Playback
- C. A. & B.
- D. None

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Sample Question 44.

The principal attributes of tools and automation are

- A. Speed & efficiency
- B. Accuracy & precision
- C. All of the above
- D. None of the above

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Sample Question 45.

Which of the following are potential benefits of adding tools to the test process?

- I. Reduction of repetitive testing procedures.
 - II. Ability to hire testers with fewer technical skills.
 - III. Ability to get an objective assessment of progress.
 - IV. Greater consistency in testing procedures.
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- A. II, III and IV
 - B. I, III and IV
 - C. I, II and III
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Which of the following are potential benefits of adding tools to the test process?

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 - IV. Greater consistency in testing procedures.
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- A. II, III and IV
 - B. I, III and IV
 - C. I, II and III
 - D. I, II and IV

Sample Question 46.

What test can be conducted for off - the - shelf software to get market feedback?

- A. Beta testing
- B. Usability testing
- C. Alpha testing
- D. COTS testing

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Sample Question 47.

Tool which stores requirement statements, check for consistency and allow requirements to be prioritized and enable individual tests to be traceable to requirements, functions and features.

- A. Incident management tools
- B. Requirements management tools
- C. Configuration management tools
- D. None

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Sample Question 48.

Which of the following are success factors when rolling out a new tool?

- I. Roll the tool out to the entire organization to ensure reasonably even coverage.
 - II. Avoid changing existing processes to reduce impact of the tool.
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Sample Question 49.

A tool that supports traceability, recording of incidents or scheduling of tests is called

- A. A dynamic analysis tool
- B. A test execution tool
- C. A debugging tool
- D. A test management tool
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Sample Question 50.

Which tool can be used to support and control part of the test management process?

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- B. Test management tool
- C. Data preparation tool
- D. Performance testing tool

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Sample Question 52.

When a new testing tool is purchased, it should be used first by:

- A. A small team to establish the best way to use the tool
- B. Everyone who may eventually have some use for the tool
- C. The independent testing team
- D. The managers to see what projects it should be used in
- E. The vendor contractor to write the initial scripts

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Sample Question 53.

A typical commercial test execution tool would be able to perform all of the following EXCEPT

- A. Generating expected outputs
- B. Replaying inputs according to a programmed script
- C. Comparison of expected outcomes with actual outcomes
- D. Recording test inputs
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Sample Question 54.

The place to start if you want a (new) test tool is:

- A. Attend a tool exhibition
- B. Invite a vendor to give a demo
- C. Analyse your needs and requirements
- D. Find out what your budget would be for the tool
- E. Search the internet

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Sample Question 55.

Which tool will be used to test the flag memory leaks and unassigned pointers

- A. Dynamic analysis tool
- B. Static Analysis tool.
- C. Maintenance tool.
- D. Configuration tool.

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Sample Question 56.

Match the following.

1. Configuration identification
 2. Configuration control
 3. Status reporting
 4. Configuration auditing
 - a. Maintains of CI's in a library
 - b. Checks on the contents of the library
 - c. Function recording and tracking problems.
 - d. Requires the all CI's and their versions in the system are known
- A. 1-d, 2-c, 3-d, 4-a
- B. 1-d, 2-a, 3-c, 4-b.
- C. 1-a, 2-b, 3-d, 4-c.
- D. 1-c, 2-b, 3-a, 4-d.

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- D. 1-c, 2-b, 3-a, 4-d.

Sample Question 57.

Testware(test cases, test dataset)

- A. Needs configuration management just like requirements, design and code
- B. Should be newly constructed for each new version of the software
- C. Is needed only until the software is released into production or use
- D. Does not need to be documented and commented, as it does not form part of the released software system

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Sample Question 58.

Which of the following is correct about static analysis tools

- A. They help you find defects rather than failures
- B. They are used by developers only
- C. They require compilation of code
- D. They are useful only for regulated industries

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Sample Question 59.

Which of the following statements is correct?

- A. Static analysis tools produce statistics during program execution
- B. Configuration management systems allow us to provide accurate defect statistics of different configurations
- C. Stress testing tools examine the behavior of the test object at or beyond full load
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Sample Question 60.

Which one is not characteristic of test management tool?

- A. Support for the management of tests and the testing activities carried out
- B. Interfaces to test execution tools
- C. Quantitative analysis related to tests
- D. Check for consistency and undefined requirements
- E. None of the above

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Sample Question 61.

What should be considered when introducing a tool into an organization?

- A. Assessing the organizational maturity
- B. Counting the number of systems to be tested
- C. Calculating the ratio between programmers and testers
- D. Reviewing the exit criteria of previous projects

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Sample Question 62.

Which one of the following statements, about capture-replay tools, is NOT correct?

- They are used to support multi-user testing.
- They are used to capture and animate user requirements.
- They are the most frequently purchased types of CAST tool.
- They capture aspects of user behaviour.

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Sample Question 63.

The oracle assumption:

- A. Is that there is some existing system against which test output may be checked.
- B. Is that the tester can routinely identify the correct outcome of a test.
- C. Is that the tester knows everything about the software under test.
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Sample Question 64.

Which of the following are disadvantages of capturing tests by recording the actions of a manual tester?

- i The script may be unstable when unexpected events occur.
 - ii Data for a number of similar tests is automatically stored separately from the script.
 - iii Expected results must be added to the captured script.
 - iv The captured script documents the exact inputs entered by the tester.
 - v When replaying a captured test, the tester may need to debug the script if it doesn't play correctly.
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- A. i, iii, iv, v.
 - B. ii, iv and v.
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Sample Question 65.

Which of the following tools is most likely to contain a comparator?

- A. Dynamic Analysis tool
- B. Test Execution tool
- C. Static Analysis tool
- D. Security tool

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Which of the following is an objective of a pilot project for the introduction of a testing tool?

- A. Evaluate testers' competence to use the tool
- B. Complete the testing of a key project.
- C. Assess whether the benefits will be achieved at reasonable cost.
- D. Discover what the requirements for the tool are

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Sample Question 67.

Which of the following test activities can be automated?

- i **Reviews and inspections.**
- ii **Metrics gathering.**
- iii **Test planning.**
- iv **Test execution.**
- v **Data generation.**

- A. i, iii, iv
- B. i, ii, iii
- C. ii, iv, v
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- C. ii, iv, v
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Sample Question 68.

Which of the following is a requirement of an effective software environment?

- I. Ease of use**
 - II. Capacity for incremental implementation**
 - III. Capability of evolving with the needs of a project**
 - IV. Inclusion of advanced tools**
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- A. I, II &III**
 - B. I, II &IV**
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 - C. II, III&IV**
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Sample Question 69.

How are (a) static analysis tools and (b) performance testing tools different?

- A. (a) helps in enforcing coding standards; (b) tests system performance
- B. (a) analyzes security vulnerabilities; (b) measures the effectiveness of test cases
- C. (a) prepares codes prior to testing; (b) prepares codes prior to stress testing
- D. (a) highlights unreachable conditions; (b) improves system performance

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Sample Question 70.

Which of the following are test management tool capabilities?

- I. The enforcement of coding standards.
 - II. Support for requirements traceability activities.
 - III. The generation of testing progress reports
 - IV. Generation of test process improvement information.
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- A. II, III and IV
 - B. I and II
 - C. I, III and IV
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 - B. I and II
 - C. I, III and IV
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Sample Question 71.

Which of the following is a risk of using a test execution tool based on record and playback?

- A. The ability to run automated scripts unattended may require increased hardware capacity.
- B. Testers may be tempted to create too many automated test scripts.
- C. Manual testers may be replaced by the tool and not be available when needed.
- D. Automated scripts may be unstable when encountering unexpected events.

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Which of the following is a risk of using a test execution tool based on record and playback?

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Sample Question 72.

The use of test automation would provide the best return on investment for which of the following?

- A. Unit testing
- B. Usability testing
- C. Regression testing
- D. Acceptance testing

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Sample Question 73.

Which of the following might be a concern of a test group relying on a test design tool?

- A. The tool may not generate sufficient tests for verifying all aspects of the test object.
- B. The tool's playback function may not work the same for all tester's workstations.
- C. The tool might take too much time to run, putting the schedule at jeopardy.
- D. The tool's test logs may require that the test group upgrade the server memory

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Sample Question 74.

Which of the following are general risks of using test-support tools during the testing process?

- I. Underestimating the amount of time needed to learn the tool.
 - II. Ease of access to information about tests will be decreased.
 - III. There will be an increase in repetitive work for testers.
 - IV. Having unrealistic expectations for test-support tools.
 - V. Using test-support tools when manual testing would better serve.
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- A. I and V
 - B. I, IV and V
 - C. III, IV and V
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Sample Question 74.

Which of the following are general risks of using test-support tools during the testing process?

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Sample Question 75.

Which of the following is a dynamic analysis tool?

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- B. Database model checker
- C. Coverage measurement tool
- D. Memory leak detector

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Sample Question 76.

Which statement about the function of a static analysis tool is true?

- A. Gives quality information about the code without executing it.
- B. Checks expected results against actual results.
- C. Can detect memory leaks.
- D. Gives information about what code has and has not been exercised.

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Sample Question 77.

Which of the following faults can be found by a static analysis tool?

- I. Incorrect branch conditions logic.
- II. Variables which are used after being defined.
- III. Variables which are defined but never used.
- IV. Standards violations
- V. Illegal calls to routines

- A. III, IV and V
- B. II only
- C. I, II, III and IV
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Which of the following is a potential pilot project objective when introducing a test support tool into an organization?

- A. Measuring the satisfaction of management for staying within scope
- B. Assessing whether the benefits will be achieved at reasonable cost
- C. Receiving compliments from the users on the aesthetic aspects of the tool
- D. Reducing the amount of overtime need to finish the project on time

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- A. Static analysis tools and test execution tools.
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- D. Review process support tools, static analysis tools and modeling tools.

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