



Test Automation Process

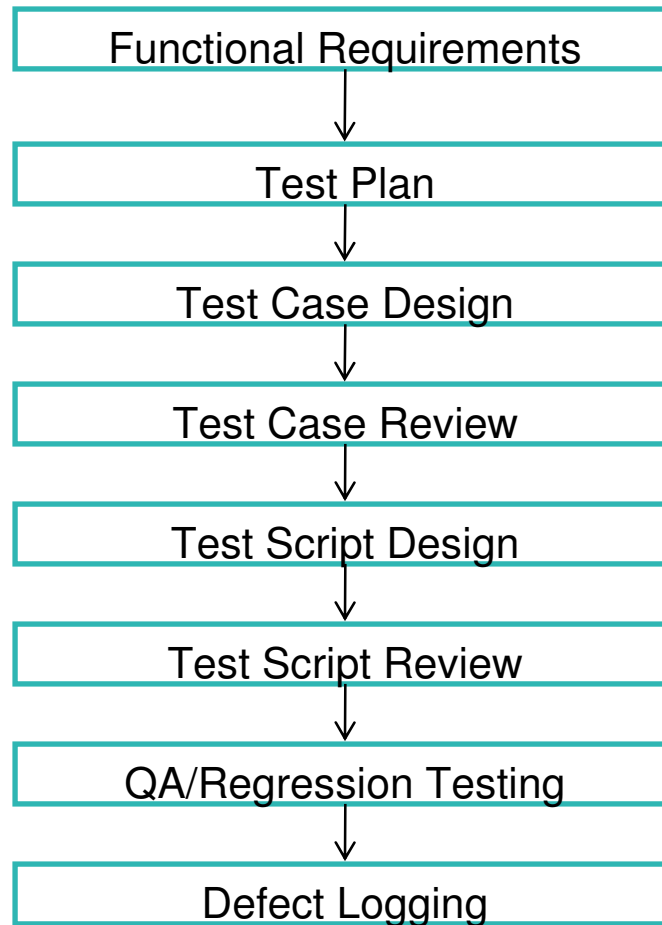
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Agenda

- Test Process
- Pre-requisites for Automation
- When to Automate
- When not to Automate
- Automation Process
- Challenges
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Test Process



Pre-requisites for Automation

- Need skilled people with programming skills.
- Requires ample time to design proper framework.
- Allocate sufficient time to create reusable functions and procedures.

When to Automate

- Spending a lot of time by testing manually.
- Regression test is essential.
- Check the functionality with huge set of data.
- Verify database which contains additional data.
- Test application with in less time.
- Code coverage is vast.
- Life span of the product is long.

When not to Automate

- Application is not stable.
- Regression test is not necessary.
- Main Application has lot of interdependency with other Applications which in turn cannot be automated.
- Time and resources are a constraint.
- Complexity of Application.
- Customized applications with short life span.

Automation Process

- Decide and Design the framework.
- Test Cases / Business flows should be in place.
- Based on the number of flows and their size, effort estimation is prepared.
- Testers are involved in effort estimation process.
- Start automation when Test cases / business flows are in place and AUT is ready with required functionality.
- Implement the framework by developing user defined functions / procedures and reusable actions required by the framework.
- Begin automating the scripts by means of the framework.
- Review the completed scripts.
- Upload the scripts to repository.
- Use the repository to check the sanity of the script against the AUT.
- By following the above process, hidden bugs can be exposed and scripts will be up to date.

Automation Process Contd...

- Defect found during regression should be logged in defect tracking tool.
- Test execution reporting should be submitted to the stakeholders.
- Metrics analysis should be done.
- Defect trend analysis helps the team to understand the stability of the product.
- Enhancements or GUI changes should be handled with proper documentation.
- Based on the enhancement / change, scripts must be tweaked.
- As and when need arises required set of scripts can be executed.
- Regression testing is run in a batch in unattended mode.
- Results can be emailed to the specified mail id.

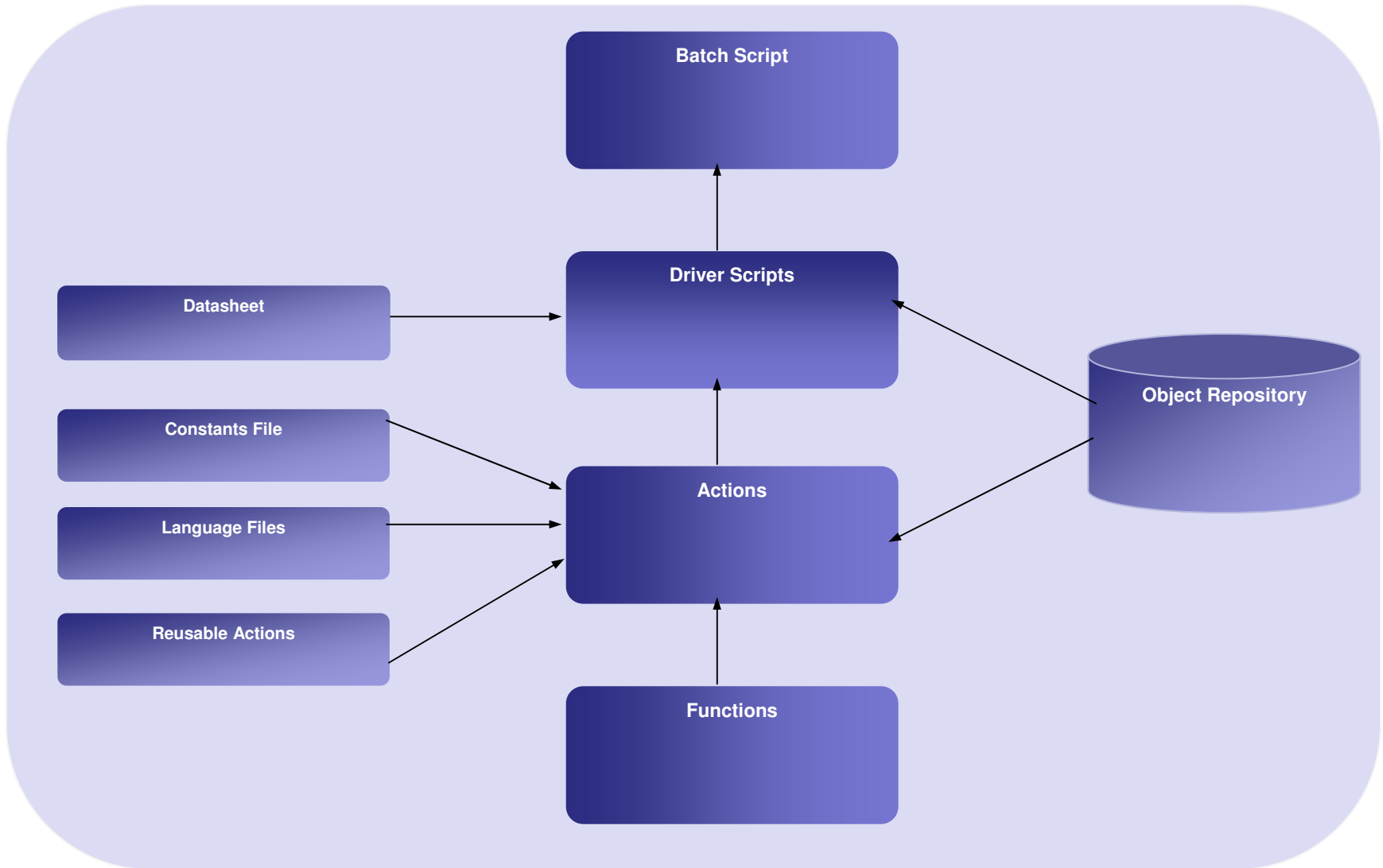
Challenges

- Evolving application
- Choose an appropriate framework which helps in minor modifications to the scripts.
- Repository crash
- Design the framework in such a way that there is less dependency on the object repository.
- Object identification
- Framework design should support run time object identification.
- Team is inexperienced
- Train the team on required skill set and mentor them with the help of senior resources.
- Team is new to framework
- Involve the team from design phase of the framework.
- Brain drain
- Create back up resources.

Benefits of Automation Framework

- Easy maintenance and enhancement.
- High degree of reuse.
- Change in application GUI or business flow requires minimal changes to the specific Business function script.
- Reduces duplication of effort in creating test scripts.
- Minimizes script maintenance.
- Manual entry of data is substituted with parameterization.

Framework Design



Framework Features

- Set of scripts that execute regression testing.
- Covers functionality and business scenario's.
- Supports testing the application in Multiple languages.
- Contains library of reusable functions, which is easy to expand and maintain.
- Test suite also gives the flexibility to run specific tests.
- Test scripts within the tests can be reused across other tests without or few modifications.
- Object Properties can be changed without changing the script.
- Flow can be changed without affecting the Object Properties.
- New Languages can be added with minimal changes to the script.

Pros and Cons

Pros :

- High degree of reuse and scalable.
- Additions, deletions, and updates to the functions are minimal.
- Fastest mode of execution.
- Same set of scripts can be run on Multiple languages and configurations.
- Coverage is more than 98%.
- With framework in place, script automation made faster.
- Not dependent on existing data.

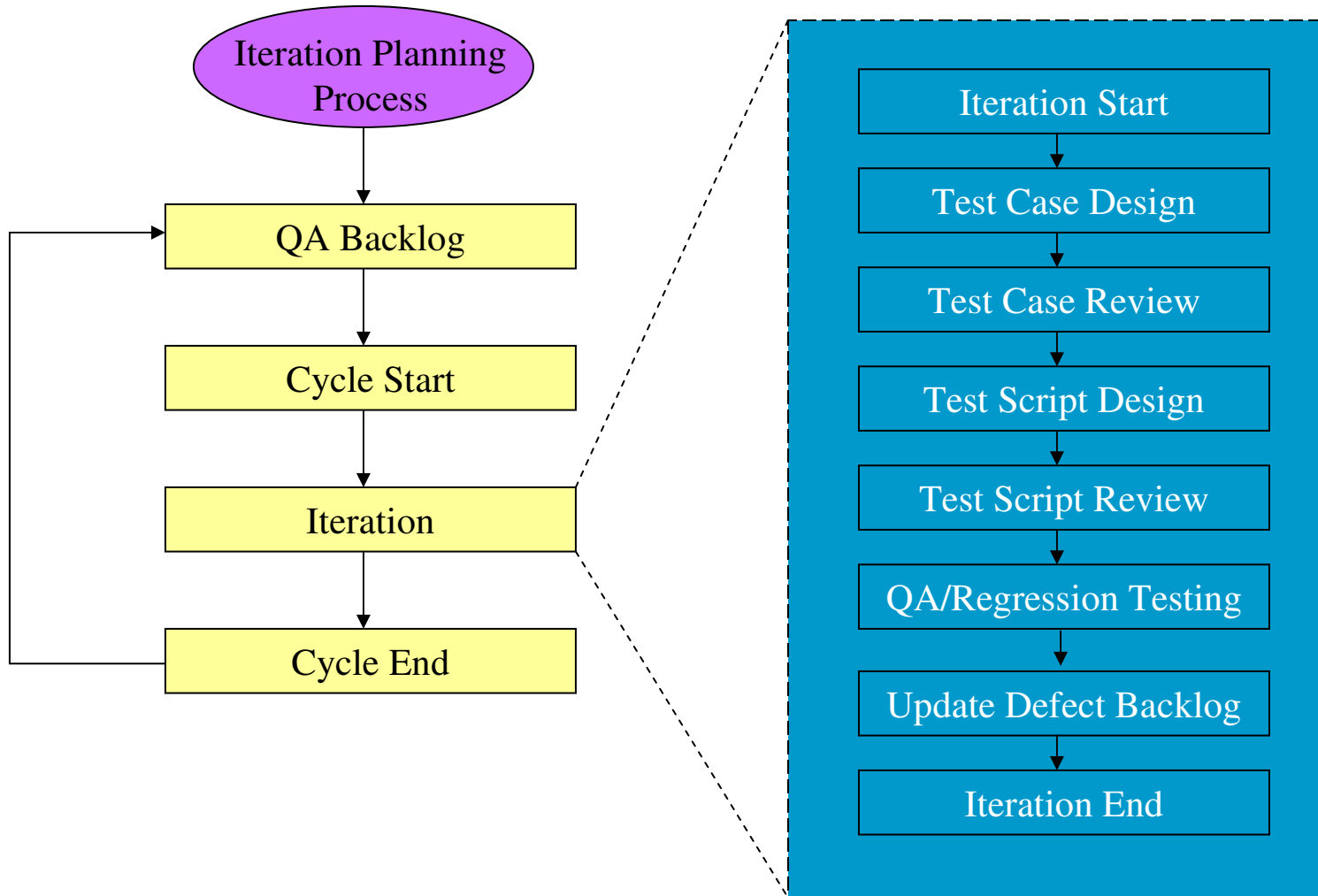
Cons:

- Difficult to debug.

Metrics

- Number of Test cases automated for one language – 1731.
- Time taken before automation – 40 person days.
- Time taken after automation – 1 person day.

Test Automation Process in Agile environment



Q & A