**Test Automation frameworks**: set of rules, the rules help us write scripts in such a manner that results in “lower maintenance”.

**Advantage of Test Automation framework**

1. Reusability of code
2. Maximum coverage
3. Recovery scenario
4. Low-cost maintenance
5. Minimal manual intervention
6. Easy Reporting

In test automation, we write scripts, scripting is basically:

1. **Arrangement (or) Object Identification**: after identifying objects we store these objects into UI Maps or Object repository to reuse them in our scripts.

1. **Action on the Identified Objects:** When the objects are identified, we perform actions on it either by mouse or by keyboard. like click, submit, etc
2. **Assertation:** the assertion is basically checking the object with some expected result.

**Types of Test Automation Framework**

1. **Linear framework**: record and playback, everything related to script is defined inside the script. This framework used in small projects.
2. **Module Based Testing Framework**: objects are defined once and reusable in all test methods. Methods are created for individual functionalities. The test case is the collection of these small method’s reusable objects
3. **Data Driven Testing Framework**: Test Data (input and output data) is separated from the script and stored in external files.
4. **Keyword Driven Testing Framework**: Both data and actions are defined outside the script.
5. **Hybrid Testing Framework**: combination of two are more framework
6. **Behavior-Driven Development Framework**: allows automation of functional validations in easily readable and understandable format to Business Analysts, Developers, Testers, etc.