SOFTWARE ENGINEERING

LECTURE-31

Testing

TOPICS COVERED

▸ Automated Testing

AUTOMATED TESTING

"Automated Testing" is automating the manual testing process currently in use. This requires that a formalized "manual testing process", currently exists in the company or organization.

Automation is the use of strategies, tools and artifacts that augment or reduce the need of manual or human involvement or interaction in unskilled, repetitive or redundant tasks.

The following types of testing can be automated:

- Functional - testing that operations perform as expected.
- Regression - testing that the behavior of the system has not changed.
- Exception or Negative - forcing error conditions in the system.
- Stress - determining the absolute capacities of the application and operational infrastructure.
- Performance - providing assurance that the performance of the system will be adequate for both batch runs and online transactions in relation to business projections and requirements.
- Load - determining the points at which the capacity and performance of the system become degraded to the situation that hardware or software upgrades would be required.

BENEFITS OF AUTOMATED TESTING

- Reliable
- Repeatable
- Comprehensive (build your own test suite to cover every feature of your application)
- Reusable
- Better Quality Software (more test in less time with less resources)
- Fast
- Cost reduction (for regression testing resources are reduced)

DISADVANTAGES OF AUTOMATION TESTING

Though the automation testing has many advantages, it has its own disadvantages too. Some of the disadvantages are:

- Proficiency is required to write the automation test scripts.
- Debugging the test script is major issue. If any error is present in the test script, sometimes it may lead to deadly consequences.
- Test maintenance is costly in case of playback methods. Even though a minor change occurs in the GUI, the test script has to be rerecorded or replaced by a new test script.
- Maintenance of test data files is difficult, if the test script tests more screens.

- Some of the above disadvantages often cause damage to the benefit gained from the automated scripts. Though the automation testing has pros and corns, it is adapted widely all over the world.