



SNS COLLEGE OF TECHNOLOGY

Coimbatore-37.

An Autonomous Institution



COURSE NAME : 19CST201-Agile Software Engineering

II YEAR/ III SEMESTER

Topic: Integration Testing

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Introduction

- Integration testing is the process of testing the interface between two software units or modules.
- It focuses on determining the correctness of the interface.
- The purpose of integration testing is to expose faults in the interaction between integrated units.
- Once all the modules have been unit tested, integration testing is performed.
- Integration testing can be done by picking module by module.



Integration Techniques Approach

- **Big-Bang Integration Testing**
- **Bottom-Up Integration Testing**
- **Top-Down Integration Testing**
- **Mixed or sandwich Integration Testing**



Big-Bang Integration Testing

- It is the simplest integration testing approach, where all the modules are combined and the functionality is verified after the completion of individual module testing.
- In simple words, all the modules of the system are simply put together and tested.
- This approach is practicable only for very small systems. If an error is found during the integration testing, it is very difficult to localize the error as the error may potentially belong to any of the modules being integrated



Bottom-Up Integration Testing

- In bottom-up testing, each module at lower levels is tested with higher modules until all modules are tested.
- The primary purpose of this integration testing is that each subsystem tests the interfaces among various modules making up the subsystem.
- This integration testing uses test drivers to drive and pass appropriate data to the lower level modules.

Top-Down Integration Testing

- Top-down integration testing technique is used in order to simulate the behaviour of the lower-level modules that are not yet integrated.
- In this integration testing, testing takes place from top to bottom.
- First, high-level modules are tested and then low-level modules and finally integrating the low-level modules to a high level to ensure the system is working as intended.



Mixed and Sandwich Integration Testing



- A mixed integration testing is also called sandwiched integration testing.
- A mixed integration testing follows a combination of top down and bottom-up testing approaches.
- In top-down approach, testing can start only after the top-level module have been coded and unit tested.
- In bottom-up approach, testing can start only after the bottom level modules are ready.
- This sandwich or mixed approach overcomes this shortcoming of the top-down and bottom-up approaches.



References

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