Practical No : 09

Aim :- To perform various testing using the testing tod unit testing, integration testing.

Theory :-

- Testing : S/w Testing is the process of evaluating and verifying that a software product or applicat" does what is supposed to do.

- The benefits of testing :-

i) Preventing bugs.
ii) Reducing developement
iii) Improving performance.

* Why testing is Important :-

- Software testing makes sure that the software is user-friendly! That makes it capable of being used by the customers it is intended for.

1) To gain customer confidence.
2) To check software adaptability
3) To identify errors.
4) To avoid extra costs.
5) To acceterate software developement
6) To avoid risks.
7) To optimise business.

• Types of Testing :-

1) Unit testing
2) Integration testing
3) Acceptance testing
4) Regression testing
5) Black box testing
6) White box testing
7) Smoke testing
8) Sanity testing.

* Unit testing -

- It is a technique by means of which individual units of software i.e group of computer, program modules, usage procedures & operating procedures are tested to determine whether they are suitable for use or not.

- In SDLC or V-model, Unit testing is the 1st level of testing done before integration testing.

* Types of Unit testing -

1) Manual testing
2) Automated testing.

* Unit testing Techniques -

1) Black Box Testing
2) White Box Testing.
3) Gray Box testing.

* Advantages of unit testing -

1) Allows developers to learn what functionally is provided & understanding of the unit API.

2) Allows the programmer to refine code & make sure the module works properly.

* Disadvantages of unit testing -

1) The process is time-consuming for written the unit test cases.

2) It cannot cover the non-functional testing parameters like scalability, performance of system etc.

* Integration testing :-

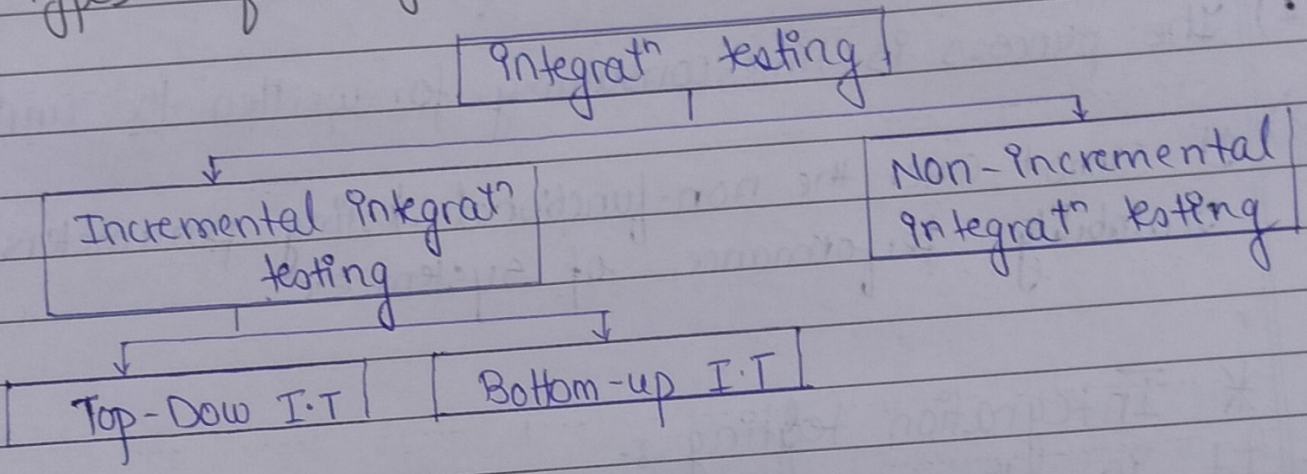
- It is the process of testing between two s/w units or modules. It focuses on determining the correctness of the interface.

- The purpose of integration testing is to expose faults in the interaction between integrated units. Once all the modules have been unit tested, integrat" testing is performed.

* Integration testing approaches-

1) Big-Bang Integration Testing.
2) Bottom-up Integration Testing.
3) Top-Down Integrat" Testing
4) Mixed Integrat" Testing.

* Types of integration testing.



* Advantages of integrat" testing-

1) It helps in identifying integrat" issues bet' the modules.
2) It improves test coverage & provide & additional level of reliability.

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* Disadvantages of Integrat" Testing-

1) It is difficult to locate faults.

2) Since Integrat" testing can begin only after "all" modules are designed, the testing team will have less time to execute tests.

Conclusion :-