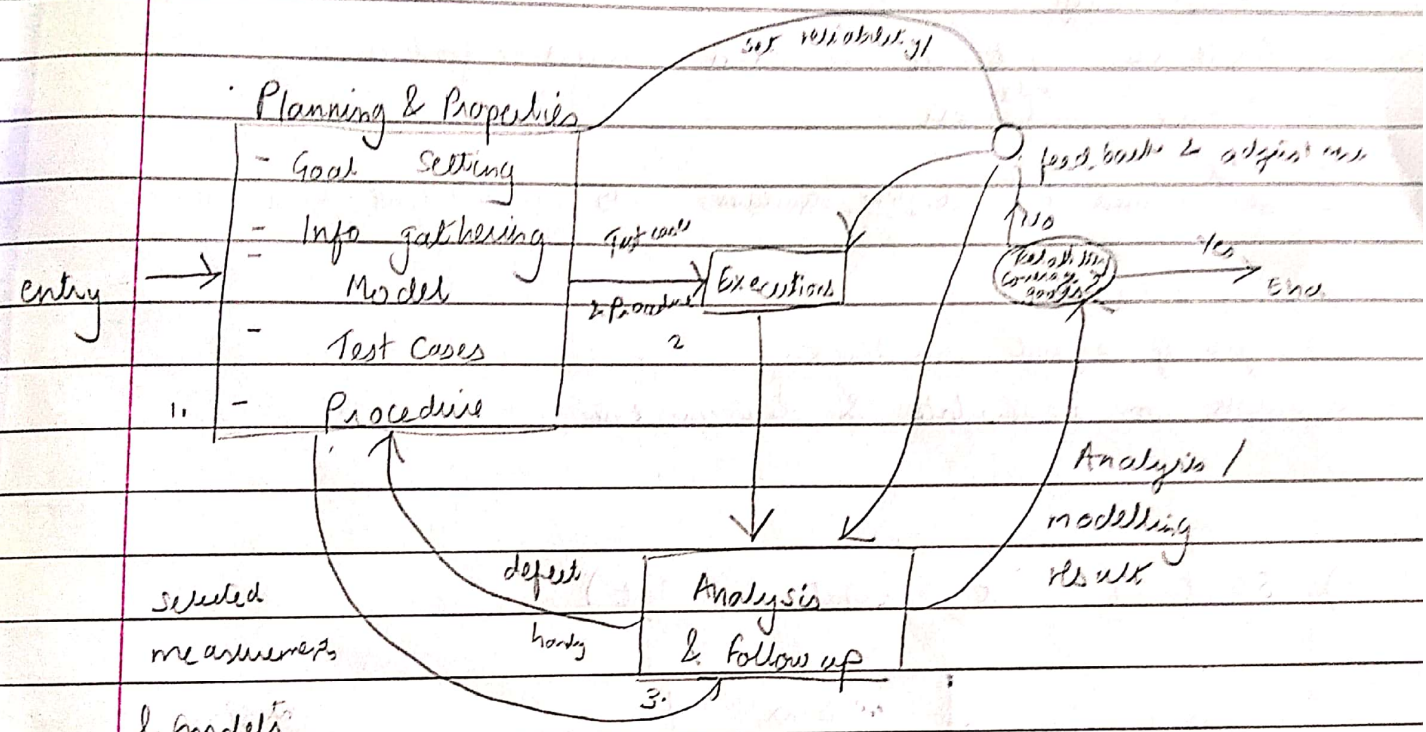
3/3/20

UNIT 2

SOFTWARE TESTING

Ch 6 - Jeff Tian

→ Why to test a software?
→ To demonstrate quality or proper behaviour.
→ To detect and fix problems.



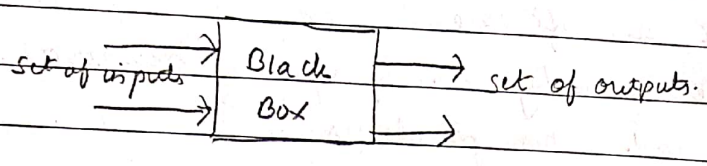
Generic Testing Process.

white box test
black box test

→ Functional Testing
→ Structural testing - white box testing.

4/3/20

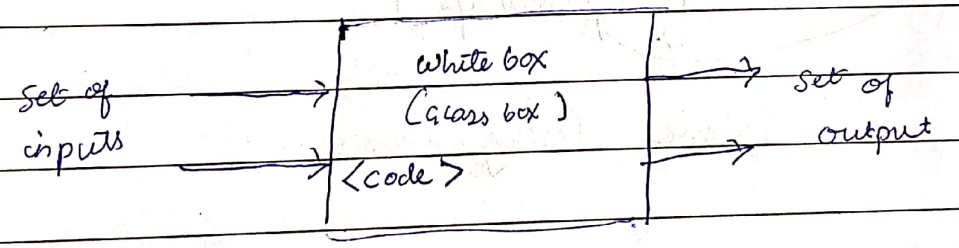
1) Functional Testing
(Black Box Testing)



Demerits:-
- Results are very discrete i.e. either success / failure
- Resource / complexity need is less
- Test is simple.
- Not concerned w/ data flow, structures, only concerned w/ set of I/O.

Demerits:-
- Efficiency is not considered.
- Errors or accumulate & deaccumulate

2) Structural Test (White Box Test)



Merits:-
- errors, faults, defects of any level can be detected - is blackbox itself
- Searching becomes easier due to sorted data ∴ ↑ efficiency

Demerits:-
More no of complexity, of time, resources

3) Coverage based Test

A = {a, b, c, d, e}

Cr: Account type : {minor, Major, senior, Agriculture, Business}

4) Usage based

A = {P, Q, R, S, T}

5|3|20 Test activities Management

→ Overall objectives / goals

→ Objects to be tested & specific focus.

Loan = {Personal Loan, Edu Loan, Med. Loan, Agri Loan, Gold Loan}

Testing Models & Test Cases

- Info src identification and soln collection Analysis & initial model
- Model Validation & included important. incremental improvements.

Test Suite Preparative & Mgt

Test end: The collection of individual test cases that will be run in a test sequence until some stopping criteria are satisfied.

Mgt

Test suite : {T1, T2, T3}

↓

Test stopping w.r. 'Goals'

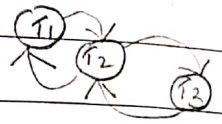
11/3/20

CH 7: STQA

4
3
2 1

Preparations of Test Procedure

1) Dependencies among individual test cases.
2) Defect detection related sequence.
3) Sequence to avoid accidents.
4) Problem diagnosis.
5) Natural grouping of test cases.



Test Execution

- Allocating test to measurements
- Invoking & running test, collection of information & measurements
- checking tes results, identifying system failures

Checklist Based Testing

- Check list (do list)
- Testing

spillover ⟶ add to next checklist.

Disadv:

Erroneous checklist ⟶ leads to delivery of erroneous product.

Component	Std Items S_1	S_2	. . .	S_N
C_1				
C_2		C_2S_2		
:				
C_M				ruS_N

Two dimensional Std Checklist.

Item	Checklist
I_1	✓
:	✓
!	✓
:	
y_{in}	X

Effectiveness of checklist is enhanced in 2D checklist

Partition and Coverage

T : { T_1, I_T, A_T, B_T, S_T . . . . }

T_1 : { O_T, I_T }

T_2 : { A_T, B_T, G_T }

T = { T_1 + T_2 }

Coverage : { 0, Sin 360 }

Step 1 i.e. min count/size = 1

∴ 361 steps are needed.

Operational Profiles

Study. Musa Operational Profile MUSA OP

no. of ost cases compiled in unit time.

- Productivity improvement
- Introduction of new product.
- Better Communication with customer.
- High return on investment.