

Levels of testing: unit, integration, functional, system, acceptance
 S4. Integration testing

- strategies
 - big bang
 - incremental
 - bottom up
 - top down
 - depth first
 - breath first
 - sandwich
- [Naik] pp. 161
 - Misuse interface ($MUS_x(y)$) - ELI5 - syntax problem
 - wrong parameters
 - type
 - ordered
 - no of parameters passed
 - Misunderstood of interface ($MUN_x(y)$) - ELI5 - logic problem
 - one parameter passed -> satisfy condition but caller does not ensure

condition

- Driver/ Stub
 stub = mocks

Pb1. (see 2016_SSVV_TopicSeminar04.pdf) + node G goes down from D

a) Big bang integration

DL - is D

#operation	operation type	tested module	driver	stub	errors
1	unit testing	A	D_A	B, C, D	Error A
2		B	D_B	E, F	Error B
3		C	D_C		Error C
4		D	D_D	G	Error D
5		E	D_E		Error E
6		F	D_F		Error F
7		G	D_G		Error G
8	integration	A, B, C, D, E, F, G	-	-	Err A, B, C ... G $MUS_A(B, C, D)$, $MUN_A(B, C, D)$,

MUS_B(E, F),
MUN_B(E, F),
MUS_D(G),
MUN_D(G),

b) Incremental

b.1 bottom-up

#op	op. type	Tested module	Driver	Stubs	Errors
1	unit	G	D _G	-	Err _G
2		D	D _D	G	Err _{E,D} , MUS _D (G), MUN _D (G)
3		E	D _E	-	Err _E
4		F	D _F	-	Err _F
5	integration	B	D _B	E, F	Err _B , MUS _B (E, F), MUN _B (E, F)
6		C	D _C	-	Err _C
7		A	D _A	-	Err _A , MUS _A (B, C, D), MUN _A (B, C, D)

b) 2. top - down

- drepth

- breath

#op	op type	tested module	driver	stub	errors
1	unit testing	A	D _A	B, C, D	Error A, MUS _A (B, C, D)
2		B	-	E, F	Error B, MUS, MUN _A (B), MUS, MUN _B (E, F)
3	integration	C	-	-	Error C, MNS _A (C)
4		D	-	G	Error D, MUS _D (G), MUS _A (D) + MUN
5		E	-	-	Error E, MUS _B (E) + MUN
6		F	-	-	Error F, MUS _B (F) +

7

G

-

-

MUN
Error G,
MUS_D(G)

c) sandwich

applied method	#op	op type	tested module	driver	stub	error
top down	1	unit	A	-	B, C, D	E _A
bottom up	2	unit	G	D _G		E _G
	3	integration	E	D _E	--	E _E
	4	n	F	D _F	-	E _F
big bang	5	unit	B	-	-	E _B , MUS _B (E, F), MUS _A (B)
	6		C	-	-	E _C , MUS _A (C),
	7		D	-	-	E _D , MUS _A (D), MUS _D (G)
	9	integration	B, C, D			E _{B,C,D} , MUS _B (E, F), MUS _D (G), MUS _A (B, C, D)

2. See 2016_SSVV_TopicSeminar04.pdf.

a)

#op	op type	tested module	Driver	Stub	Error
1	unit	A	D _A	B, E, F	Err _A
2		B	D _B	C	Err _B
3		E	D _E	-	Err _E
4		F	D _F	-	Err _F
5		C	D _C	D	Err _C
6		D	D _D	-	Err _D
7	integration	A, B, C, D, E, F	-	-	Err _{A.....F} MUS _A (B, E, F), MUN MUS _B (C), MUN MUS _C (D)

bottom up

#op	op. type	tested method	driver	stub	error
1	unit	D	D _D	-	Err _D
2		C	D _C	-	Err _C , Err _D , MUS _C (D), MUN

3	integration	B	D_B	-	error B, Error C $MUS_B(C)$, MUN
4		E	D_E	-	error E
5		F	D_F	-	error F
6		A	D_A	-	Error A, F, E, B $MUS_A(F)$, MUN $MUS_A(E)$, MUN $MUS_A(B)$, MUN

HOMEWORK rest