

CSE 4321, HW 8

Topic: Regression Testing

Note that for the following problems, you must show intermediate steps in order to get full credits.

1. (20 points) Suppose program P has been executed against a test suite T consisting of six tests, t1, t2, t3, t4, t5 and t6. A total of six entities are covered by the tests as shown in the following table: 0 (or 1) in a column indicates that the corresponding entity is not covered (or covered). The entities could be basic blocks in the program, functions, def-uses, or any other testable element of interest. Follow procedure CMIMX to find the minimal cover set for the six entities.

	1	2	3	4	5	6
t1	0	1	0	1	0	1
t2	1	0	0	0	1	0
t3	1	1	0	1	0	0
t4	1	0	1	0	0	0
t5	0	1	0	1	1	0
t6	1	0	0	0	0	0

2. (20 points) Suppose that there is an application P consisting of 8 methods, m1 .. m8. Also suppose that there is a regression-test set T = {t1, t2, t3, t4, t5}. The methods covered by each test in T are listed in the following table. Follow procedure PrTest to obtain a prioritized list of tests based on residual coverage.

Test (t)	Methods covered (cov(t))	cov(t)
t1	m1, m3, m5, m6, m8	5
t2	m1, m7, m8	3
t3	m1, m2, m3, m5	4
t4	m1, m2, m3, m4	4
t5	m1, m5, m8	3