

1.

Indicare se i seguenti schedule possono produrre anomalie; i simboli *ci* e *ai* indicano l'esito (commit o abort) della transazione.

1. $r_1(x), w_1(x), r_2(x), w_2(y), a_1, c_2$
2. $r_1(x), w_1(x), r_2(y), w_2(y), a_1, c_2$
3. $r_1(x), r_2(x), r_2(y), w_2(y), r_1(z), a_1, c_2$
4. $r_1(x), r_2(x), w_2(x), w_1(x), c_1, c_2$
5. $r_1(x), r_2(x), w_2(x), r_1(y), c_1, c_2$
6. $r_1(x), w_1(x), r_2(x), w_2(x), c_1, c_2$

2.

Indicare se i seguenti schedule sono VSR.

1. $r_1(x), r_2(y), w_1(y), r_2(x), w_2(x)$
2. $r_1(x), r_2(y), w_1(x), w_1(y), r_2(x), w_2(x)$
3. $r_1(x), r_1(y), r_2(y), w_2(z), w_1(z), w_3(z), w_3(x)$
4. $r_1(y), r_1(y), w_2(z), w_1(z), w_3(z), w_3(x), w_1(x)$

3.

Indicare quali di questi schedule sono VSR oppure CSR

Inoltre, Se gli schedule si presentassero a uno scheduler che usa il locking a due fasi, quali transazioni verrebbero messe in attesa? Si noti che, una volta posta in attesa una transazione, le sue successive azioni non vanno più considerate.

1. $r_1(x), w_1(x), r_2(z), r_1(y), w_1(y), r_2(x), w_2(x), w_2(z)$
2. $r_1(x), w_1(x), w_3(x), r_2(y), r_3(y), w_3(y), w_1(y), r_2(x)$
3. $r_1(x), r_2(x), w_2(x), r_2(x), r_4(z), w_1(x), w_3(y), w_3(x), w_1(y), w_5(x), w_1(z), w_5(y), r_5(z)$
4. $r_1(x), r_3(y), w_1(y), w_4(x), w_1(t), w_5(x), r_2(z), r_3(z), w_2(z), w_5(z), r_4(t), r_5(t)$
5. $r_1(x), r_2(x), w_2(x), r_3(x), r_4(z), w_1(x), r_3(y), r_3(x), w_1(y), w_5(x), w_1(z), r_5(y), r_5(z)$
6. $r_1(x), r_1(t), r_3(z), r_4(z), w_2(z), r_4(x), r_3(x), w_4(x), w_4(y), w_3(y), w_1(y), w_2(t)$
7. $r_2(x), r_4(x), w_4(x), r_1(y), r_4(z), w_4(z), w_3(y), w_3(z), w_1(t), w_2(z), w_2(t)$