Exercises for 10/12/13

1. For each of the following schedules:

   (a) $r_1(A); r_2(B); r_3(C); w_1(B); w_2(C); w_3(D)$

   (b) $r_1(A); r_2(B); r_3(C); w_1(B); w_2(C); w_3(A)$

   (c) $r_1(A); r_2(B); r_3(C); r_1(B); r_2(C); r_3(D); w_1(C); w_2(D); w_3(C)$

   (d) $r_1(A); r_2(B); r_3(C); r_1(B); r_2(C); r_3(D); w_1(A); w_2(B); w_3(C)$

   (e) $r_1(A); r_2(B); r_3(C); r_1(B); r_2(C); r_3(A); w1(A); w_2(B); w_3(C)$

   Do the following:

   (a) Insert shared and exclusive locks, and insert unlock actions. Describe what the scheduler does

   (b) Insert shared and exclusive locks in a way that allows upgrading. Describe what the scheduler does

   (c) Repeat with update locks

2. For each of the following schedules, insert appropriate locks (read, write, or increment) before each action, and unlocks. What does the scheduler do?

   (a) $r_1(A); r_2(B); inc_1(B); inc_2(C); w_1(C); w2(D)$

   (b) $r_1(A); r_2(B); inc_1(B); inc_2(A); w_1(C); w2(D)$

   (c) $inc_1(A); inc_2(B); inc_1(B); inc_2(C); w_1(C); w_2(D)$

3. BCNF. Schema $CTHRSG$ (course, teacher, hour, room, student, grade)

   $C \rightarrow T,\ HR \rightarrow C,\ HT \rightarrow R,\ CS \rightarrow G,\ HS \rightarrow R$