**《数据库概论》第三次课后作业**

**题目：**

1. The following is a sequence of undo/redo-log records written by two transactions T and U:

<START U>

<U, A, 10, 11>

<START T>

<T, B, 20, 21>

<U, C, 30, 31>

<T, D, 40, 41>

<COMMIT T>

<U, E, 50, 51>

<COMMIT U>

Describe the action of the recovery manager, including changes to both disk and the log, if there is a crash and the last log record to appear on disk is:

(a) <START T>

(b) <COMMIT T>

(c) <U, E, 50, 51>

(d) <COMMIT U>

1. 请考虑下面两个事务：

|  |  |
| --- | --- |
| T1: read(A);  read(B);  if A = 0 then B := B + 1;  write B; | T2: read(B);  read(A);  if B = 0 then A := A + 1;  write A. |

请给事务 T1 与 T2 增加封锁和解锁指令，使它们遵从两阶段封锁协议。这两个事务的执行会导致死锁吗？