Matthew Austin

Database Management

Dr. Eidson

December 2017

Assignment 5

19.5

1. R1(A,B,C,D,E). The dependencies over relation ABCDEFGHI are A → B, C→ D.
   1. This relation is in 1NF due to the functional dependencies, it is also the strongest normal form that the relation is in because the primary key cannot be identified.
   2. Since the relation is not 2NF it is not BCNF. Thus after being decomposed the relations are AB, CD, and ACE.
2. R2(A,B,F). The dependencies over relation ABCDEFGHI are AC → E, B → F.
   1. This relation is in 1NF due to the functional dependencies, it is also the strongest normal form that the relation is in because the primary key is not identified.
   2. Since the relation is not 2NF it is not BCNF. This are being decomposed the relations are AB and BF.

19.7

1. The buffer pool is checked in order to see if it contains the request page. If the page is in the buffer pool then it goes to 2. But, if the page is not in the pool, the it will do the following:
   1. A frame is chosen for replacement, using the replacement policy.
   2. If the frame chosen for replace is “dirty”, it is written out to the disk.
   3. The requested page is read into the frame chosen for replacement
2. The requested page is pinned and its address is returned to the requester.