II. a) Users id foreign key Posts id name city date of birth -user_id late-of-post wullor-of-shares Pages Pagelike id user_id id nauel date of like primary tey > user_id, page_id The references (arrows) are the foreign keys and the underlined romes and the primary key. for the scenario would be two users sharing a post at the same forth rome gets incremented on number of - drovers by both clients. The database weeds to syncronise the transactions by locking the row for the with an exclusive lock. c) select user name, star post tet from Users wer join fosts post on user id = post wer id where user current ity = ' roman' and post muleer of lay

Trave, test proj based on sorting id = user-id Page - oriented wested loops join Taty = 'forman' Two of shares = 0 hashinder seam (hashinder seam Suppose 100 pages of users and so pages of posts and 200 buffer pages Selection cost - ur of results (suppose 10 wer pages and 20 post pages) Page oriented - wers-outer rel. cting 10+10-20 = 210 10s Suppose 30 results proj - sort the 30 results -> 2.30 110s - real -> 30 (10) Total: 10+20+210+90=330/10s