

Practice Set #2

Suppose following schema have been created for storing information of your Hall of Residence at DAIICT. Considering this set of relations, write down queries given below in Relational Algebra and SQL.

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STUDENT(id, name, email, prog_code, batch, cpi)
    --Batch is like 2009, 2010, or so
    -- Prog_code is like '01' for B.Tech, or so
CoursesTaken(stud_id, course_no, sem, acad_yr, grade)
Result(stud_id, sem, acad_yr, SPI, CPI)
ROOM(rno, wing, floor)
    -- floors are represented by numbers 0 (Ground), 1(First), and 2 (Second)
ALLOT(sid, rno)
    -- Record of all allotments is stored in this relation. Students (sid) not having entry in
    this relation means - they are not residing in the HoR
HMC(wing, floor, sid)
    -- sid is student id of floor representative, and cannot be null.
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1. List ID, Name of students residing in wing 'C' first floor
2. List room nos' along with ID and Name of resident that are singly occupied in wing 'C' first floor
3. Give wing-floor wise count of fully vacant rooms in HoR
4. Give prog-batch wise count of residents in wing 'C' first floor.
5. List ID, Name of B.Tech. (ICT) students (prog code '01') who are not residing in HoR
6. List Wing, Floor, HMC_Rep_ID, HM_Rep_Name for all floors. Cases where floor does not have any HMC representative may show as Null.
7. List wing-floors that do not have HMC representative.
8. List StudentIDs who are in 2014 batch, studying in prog code '01', and staying in C wing.
9. List ID, Name of students of B. Tech. 2008, who are living in 'E' second floor and taken IT304, and have passed with 'AA' or 'AB' grade.
10. List ID, Name of Roommate of student '201331003'.
11. List ID, Name of female HMC representatives
12. Give Gender-wise count of B.Tech.(ICT) students for batches since 2013.
13. Give Gender-wise percentage of B.Tech.(ICT) students for batches since 2013.