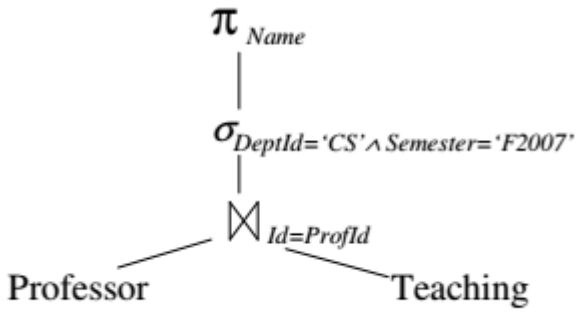
Department of Computer Applications
Interesting Question to Analyze [28.04.2020]

The SQL given below is to retrieve names of professor belong to Computer Science (CS) who are teaching students studying in semester F2007. Two different **Relational Algebra Expression** and **its Query Tree A and B** are shown below.

```
SELECT P.Name
FROM Professor P, Teaching T
WHERE P.Id = T.ProfId -- join condition
AND P. DeptId = 'CS' AND T.Semester = 'F2007'
```

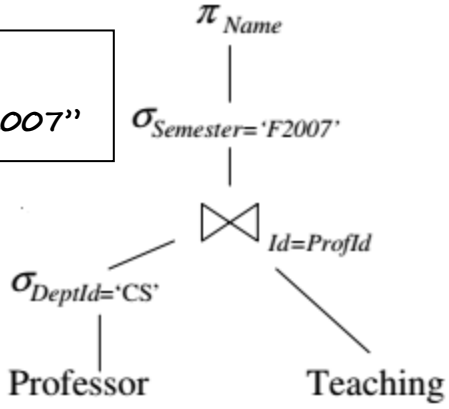
$$\pi_{Name}(\sigma_{DeptId='CS' \wedge Semester='F2007'}(\text{Professor} \bowtie_{Id=ProfId} \text{Teaching}))$$



A

$$\pi_{Name}(\sigma_{Semester='F1994'}(\sigma_{DeptId='CS'}(\text{Professor}) \bowtie_{Id=ProfId} \text{Teaching}))$$

Correction ↑
Semester = "F2007"



B

Analysis these two answers **A & B.** Among A and B, one is an optimized query [in terms of time and cost]; identify and justify your answer with appropriate illustration.

Best answer will be shared in the Google Classroom.

AS – 28.04.2020