Q1

1/1 point (ungraded)

Consider the following query:

```
Select * From Apply, College
Where Apply.cName = College.cName
And Apply.major = 'CS' and College.enrollment < 5000
```

Which of the following indexes could NOT be useful in speeding up query execution?

- Tree-based index on Apply.cName
- Hash-based index on Apply.major
- Hash-based index on College.enrollment
- Hash-based index on College.cName

Explanation

Hash-based indexes can only be used for equality conditions.

Submit You have used 2 of 4 attempts

Answers are displayed within the problem

Q2

1/1 point (ungraded)

Consider the following query:

```
Select * From Student, Apply, College
Where Student.sID = Apply.sID and Apply.cName = College.cName
And Student.GPA > 1.5 And College.cName < 'Cornell'
```

Suppose we are allowed to create two indexes, and assume all indexes are tree-based. Which two indexes do you think would be most useful for speeding up query execution?

- (•) Student.sID, College.cName
- ( ) Student.sID, Student.GPA
- ( ) Apply.cName, College.cName
- ( ) Apply.sID, Student.GPA

Explanation

An index on Student.sID can be used for its join condition and an index on College.cName can be used for both its join condition and 'cName < Cornell.' An index on Student.GPA is unlikely to be helpful since most students satisfy GPA > 1.5. Indexing both Apply.cName and College.cName helps with only one join condition.