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INT 7223 Cybersecurity

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Research Assignment 1

<u>Please research one of the problems located at the end of chapters 1-12</u>

5.2 The following table provides information on members of a mountain climbing club:

Climber-ID	Name	Skill Level	Age
123	Edmund	Experienced	80
214	Arnold	Beginner	25
313	Bridget	Experienced	33
212	James	Medium	27

The primary key is Climber-ID. Explain whether or not each of the following rows can be added to the table.

Climber-ID	Name	Skill Level	Age
214	Abbot	Medium	40
	Johh	Experienced	19
15	Jeff	Medium	42

In order to properly answer this question, we would have to make an assumption to start off. We need to assume that the question is asking not whether we can manually add the second table to the first by modifying existing data but by performing a query. Secondly, we need to assume the query being used. For this scenario, I am going to assume that SQL is being used, and that the query being used will use `UNION ALL`. I have chosen to use `UNION ALL` over `UNION` because the `UNION ALL` query will merge the two tables into one and keep all of the values which are being selected whereas `UNION` will only attempt to merge/combine distinct/unique values.

In the case of using `UNION ALL` row 1 of the second table will not be able to merge into the first table. This is because the primary key, `Climber-ID` is a duplicate of an existing `Climber-ID` value, 214.

In the case of using `UNION ALL` row 2 of the second table will not be able to merge into the first table. This is because the primary key of this row, `Climber-ID` does not exist. Technically, in any decent database system this row would never and could not exist in the first place as the row could not have been made without a primary key value, but in this made-up scenario since there is no primary key it will not merge.

In the case of using `UNION ALL` row 3 of the second table this will merge perfectly fine with the first table.

As a side note, depending on how you configure the query and how the database system is configured, it is possible that performing a `UNION ALL` query will detect the merge conflicts and automatically fix them by doing a cascade change of the primary key of row 1 of the second table and assign a primary key automatically to row 2.

References

Stallings, W., & Brown, L. (2018). *Computer security: Principles and practice*. Pearson.

I have neither given nor received unauthorized aid in completing this work, nor have I presented someone else's work as my own.

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