Since 2020, Scotland Golfers has maintained a database of every golf club member in Scotland. The database stores details of each player along with the club they are a member of and their handicap.

The database also stores the results of club competitions that take place all over Scotland including a unique code for each individual result and the type of match (Match Play, Stroke Play or Stableford).

Each table contains thousands of rows. A selection of rows from the two database tables are shown below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table: Golfer** | | | | | | |
| **scotGolfNo** | **forename** | **surname** | **age** | **club** | **handicap** |
| 9274632 | Craig | White | Junior | Dundee Golf Club | 12 |
| 8364766 | Donna | Winter | Adult | St Andrews Golf Club | 4 |
| 9364521 | Kai | Smart | Adult | Perth Golf Club |  |
| 1284361 | Kyra | Assam | Junior | Arbroath Golf Club | 5 |
| 7634520 | Jamie | Grey | Senior | Dundee Golf Club | 22 |
| … | … | … | … | … | … |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table: Result** | | | | | | | | |
| **resultID** | **competition** | **level** | **type** | **year** | **score** | **scotGolfNo** | **matchType** |
| DUF0022 | Dunfermline Carnegie Cup | Junior | Ladies | 2021 | 91 | 1100752 | stroke play |
| DUN0022 | Dundee Masters | Adult | Mixed | 2021 | 88 | 1154763 | stableford |
| DUN0129 | Dundee Open | Adult | Gents | 2022 | 80 | 1162891 | stroke play |
| HAW0011 | Hawick Seniors | Senior | Ladies | 2021 | 78 | 1465550 | stroke play |
| STA0013 | St Andrews Cup | Adult | Gents | 2021 | 81 | 1162891 | stroke play |
| OBN0007 | Oban Match Play | Adult | Gents | 2021 | 75 | 1307246 | match play |
| … | … |  |  |  | … | … | … |

**For each of the following questions, use the lines provided to write the SQL that would be required to make the described changes to the database tables.**

**Question 1**

A new junior golfer, Eve Muirfoot, has joined Dunfermline Golf Club. After playing a few rounds of golf her handicap is confirmed as 19. She is assigned the golf number 3028756. **(2)**

\_\_\_\_INSERT INTO Golfer(scotGolfNo, forename, surname, age, club, handicap) VALUES (3028756, “Eve”, “Muirfoot”, “Junior”, “Dunfermline Golf Club”, 19);

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Question 2**

Eve took place in the adult ladies ‘Arbroath Match’ match play competition in 2022, scoring 93. Her result id was OBN0065. **(2)**

INSERT INTO Result(resultID, competition, level, type, year, score, scotGolfNo, matchType) VALUES(“OBN0065”, “Arbroath Match”, “Adult”, “Ladies”, 2022, 93, 3028756, “match play”);

**Question 3**

Aki Seng has joined Hawick Golf Club as an adult member. Aki has yet to be given a handicap. Aki has been told his Scottish Golf Number is 4049875. **(2)**

INSERT INTO Golfer(scotGolfNo, forename, surname, age, club, handicap) VALUES(4049875, “Aki”, “Seng”, “Adult”, “Hawick Golf Club”, “”);

**Question 4**

The database is set up with referential integrity. Explain would happen if Eve’s Oban competition result from (question 2) was entered into the Result table before her details were added to the Golfer table (question 1)? **(1)**

You would not have referential integrity because the value of scotGolfNo is a foreign key, inserting a foreign key that doesn’t yet exist is problematic because the computer doesn’t know what it is, it hasn’t been defined yet because the primary key of scotGolfNo isn’t present yet, so if you try to select Eve’s forename for example, through connecting the two tables, the computer doesn’t know what to do and crashes because the scotGolfNo of Eve doesn’t yet exist.

**Question 5**

Having now played enough golf, Aki Seng (scotGolfNo 4049875), has been given a handicap of 26. Scotland Golfers can now add his handicap to the database. **(3)**

UPDATE Golfer

SET handicap = 26

WHERE scotGolfNo = 4049875;

**Question 6**

The results of the 2022, Glasgow Seniors, Gents competition have accidentally been entered as a Mixed event.

UPDATE Result

SET type = “Gents”

WHERE year = 2022, competition = “Glasgow Seniors”; **(4)**

**Question 7**

Gull Gott (scotGolfNo 8174089) has given up playing golf and wishes to be removed from the database. **(2)**

DELETE FROM Golfer

WHERE scotGolfNo = 8174089;

**Question 8**

Sian Breckinridge is found to have cheated in the Dundee Masters competition held in 2021.   
Sian’s result (resultID DUN0020) should be removed from the database. **(2)**

DELETE FROM Result

WHERE resultID = “DUN0020”;

**Question 9**

Ray Burns from Dundee Golf Club has had a great year. His handicap went down to 9, plus he got married and changed his surname to Burns-Young. **(5)**

UPDATE Golfer

SET handicap = 9, surname = “Burns-Young”

WHERE forename = “Ray”, surname = “Burns”, handicap > 9, club = “Dundee Golf Club”;

**Question 10**

Although unlikely, explain why changing Ray’s data (question 9) may cause an error in the database’s data. **(1)**

There is although, very small, a chance that there is someone also called Ray Burns in the same club where they also have a handicap that was above 9 previously. The information given doesn’t contain a primary key, the keys are all secondary meaning they don’t have to be unique. In the case someone who is exactly the same does exist but with a different scotGolfNo, regardless, their surname will be changed as well because the computer was unable to differentiate between the Ray Burns in question and the Ray Burns that is unrelated therefore affecting the other person as well. This may cause an error because once this is done, if in the future the other Ray Burns needs to be queried on, they will no longer be found through fore name and surname, they will have to be found through scotGolfNo and if nobody remembers it, it will be a lot harder to differentiate who is who. Also in the future if a query is made to look for a person with the name Ray Burns-Young, both persons will be outputted and therefore it is harder to differentiate who is who.