

Unit 2 Creating Systems to Manage Information



**Level 3 National in
Information Technology**

January 2023

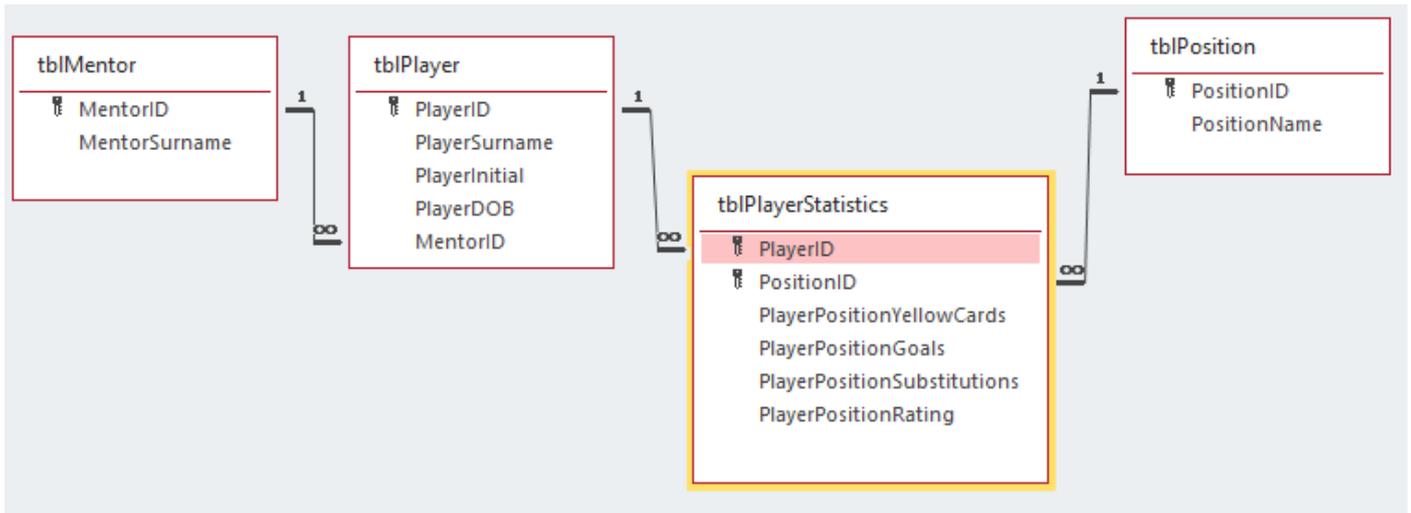
Example Solution

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Part A

Activity 1 – Database relationships screenprint



Activity 2 – Table structures

| Field Name | Data Type |
|---------------|------------|
| PlayerID | AutoNumber |
| PlayerSurname | Short Text |
| PlayerInitial | Short Text |
| PlayerDOB | Date/Time |
| MentorID | Number |

| Field Name | Data Type |
|---------------|------------|
| MentorID | AutoNumber |
| MentorSurname | Short Text |

| Field Name | Data Type |
|--------------|------------|
| PositionID | AutoNumber |
| PositionName | Short Text |

| Field Name | Data Type |
|-----------------------------|-----------|
| PlayerID | Number |
| PositionID | Number |
| PlayerPositionYellowCards | Number |
| PlayerPositionGoals | Number |
| PlayerPositionSubstitutions | Number |
| PlayerPositionRating | Number |

Presence check

| Field Name | Data Type |
|---------------|------------|
| PlayerID | AutoNumber |
| PlayerSurname | Short Text |
| PlayerInitial | Short Text |
| PlayerDOB | Date/Time |

General **Lookup**

| | |
|-----------------|--|
| Format | Short Date |
| Input Mask | |
| Caption | |
| Default Value | |
| Validation Rule | Is Not Null |
| Validation Text | The player's date of birth must be present |

Format and length check

| Field Name | Data Type |
|---------------|------------|
| PlayerID | AutoNumber |
| PlayerSurname | Short Text |
| PlayerInitial | Short Text |
| PlayerDOB | Date/Time |
| MentorID | Number |

General **Lookup**

| | |
|------------|----|
| Field Size | 1 |
| Format | |
| Input Mask | >L |

Value lookup or range check

| Field Name | Data Type |
|-----------------------------|-----------|
| PlayerID | Number |
| PositionID | Number |
| PlayerPositionYellowCards | Number |
| PlayerPositionGoals | Number |
| PlayerPositionSubstitutions | Number |
| PlayerPositionRating | Number |

General **Lookup**

| | |
|-----------------|------------|
| Display Control | Combo Box |
| Row Source Type | Value List |
| Row Source | 1;2;3;4;5 |
| Bound Column | 1 |
| Column Count | 1 |
| Column Heads | No |
| Column Widths | |
| List Rows | 16 |
| List Width | Auto |
| Limit To List | Yes |

Table lookup Any foreign key

| Field Name | Data Type |
|---------------|------------|
| PlayerID | AutoNumber |
| PlayerSurname | Short Text |
| PlayerInitial | Short Text |
| PlayerDOB | Date/Time |
| MentorID | Number |

General **Lookup**

| | |
|-----------------|--|
| Display Control | Combo Box |
| Row Source Type | Table/Query |
| Row Source | SELECT [tblMentor].[MentorID], [tblMentor].[MentorSurname] |
| Bound Column | 1 |
| Column Count | 2 |
| Column Heads | No |
| Column Widths | 1.508cm;2.54cm |
| List Rows | 16 |
| List Width | 4.048cm |
| Limit To List | Yes |

Activity 3 – Queries and report

- (a) Create a query to display a list of players who have a rating of at least one and no more than three. It must show the player surname, date of birth, position and rating. It must be sorted from youngest to oldest player.

| PlayerSurname | PlayerDOB | PositionName | PlayerPositionRating |
|---------------|------------|-----------------|----------------------|
| Johnson | 12/12/2007 | Centre Forward | 3 |
| Zhang | 14/08/2007 | Right Back | 3 |
| Meek | 10/07/2007 | Centre Midfield | 2 |
| Morris | 26/09/2006 | Centre Forward | 2 |
| Hernandez | 05/04/2006 | Goalkeeper | 1 |
| Taylor | 04/05/2005 | Right Midfield | 2 |
| Garcia | 14/02/2005 | Centre Back | 1 |
| Garcia | 14/02/2005 | Centre Forward | 1 |

- (b) Create a query that will calculate and display the:

- age of the players, for example 16
- number of players for each age
- number of yellow cards for each age
- highest number of goals for each age.

Example 1 (taking into account 8 players)

qry(b)_1

| Field: | PlayerID | NumYellowCards: PlayerPositionYellowCards | HighestNumGoals: PlayerPositionGoals | AgeGroup: Int((Date)-[playerDOB])/365) |
|-----------|-------------------------------------|---|--------------------------------------|--|
| Table: | tblPlayer | tblPlayerStatistics | tblPlayerStatistics | |
| Total: | Group By | Sum | Max | Group By |
| Sort: | | | | |
| Show: | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Criteria: | | | | |

qry(b)_2

| Field: | AgeGroup | NumPlayers: PlayerID | NumYellowCards: NumYellowCards | HighestNumberOfGoals: HighestNumGoals |
|-----------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|
| Table: | qry(b)_1 | qry(b)_1 | qry(b)_1 | qry(b)_1 |
| Total: | Group By | Count | Sum | Max |
| Sort: | | | | |
| Show: | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Criteria: | | | | |

| AgeGroup | NumPlayers | NumYellowCards | HighestNumberOfGoals |
|----------|------------|----------------|----------------------|
| 15 | 3 | 15 | 8 |
| 16 | 2 | 2 | 5 |
| 17 | 1 | 2 | 1 |
| 18 | 2 | 25 | 6 |

Example 2 – not taking into account 8 players

| Field: | AgeGroup: Int([Date]-[playerDOB])/365) | NumPlayers: PlayerID | NumYellowCards: PlayerPositionYellowCards | HighestNumGoals: PlayerPositionGoals |
|-----------|--|-------------------------------------|---|--------------------------------------|
| Table: | | tblPlayerStatistics | tblPlayerStatistics | tblPlayerStatistics |
| Total: | Group By | Count | Sum | Max |
| Sort: | | | | |
| Show: | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Criteria: | | | | |

| AgeGroup | NumPlayers | NumYellowCards | HighestNumGoals |
|----------|------------|----------------|-----------------|
| 15 | 3 | 15 | 8 |
| 16 | 2 | 2 | 5 |
| 17 | 4 | 10 | 6 |
| 18 | 2 | 17 | 1 |

Learners were still fully credited if they did not take into account 8 players rather than 11.

(c) Create a report that shows the statistics for each player who has played in more than one position.

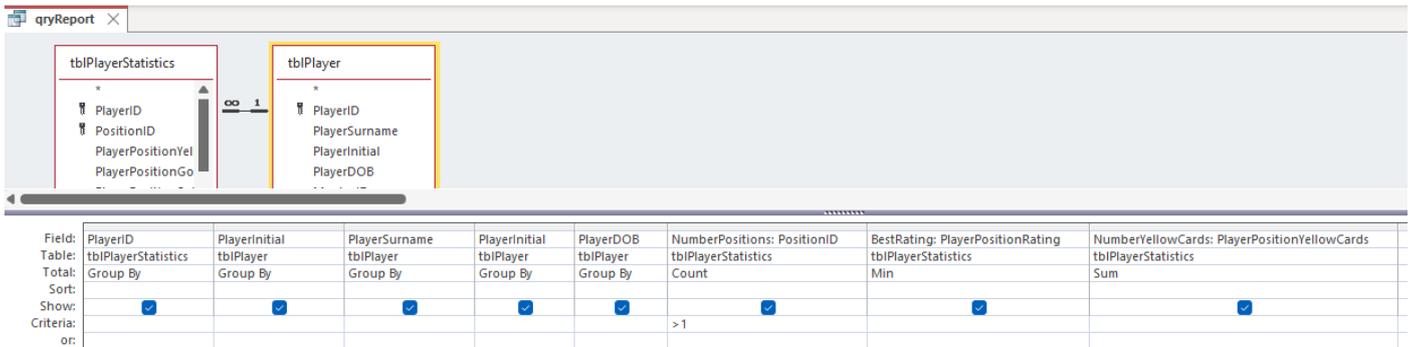
Display a suitable report title.

- For each player display:
- the surname
- the initial
- the date of birth.

Calculate and display:

- the number of positions they have played in
- the best rating they have achieved
- the total number of yellow cards they have received.

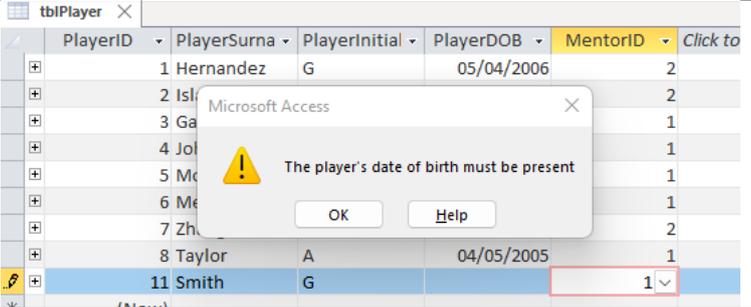
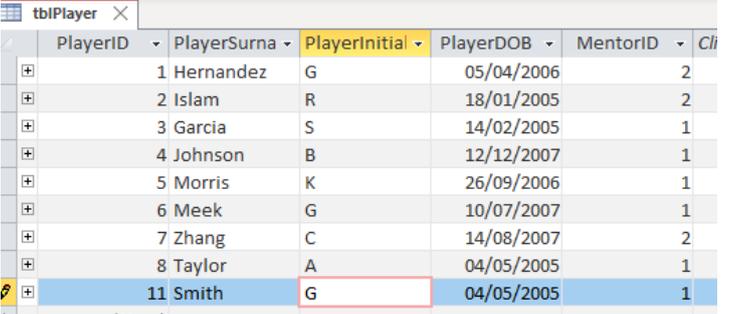
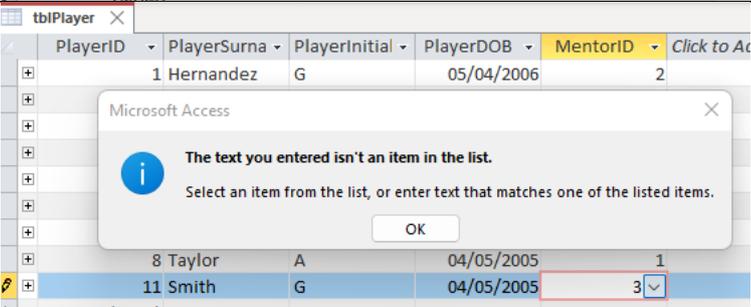
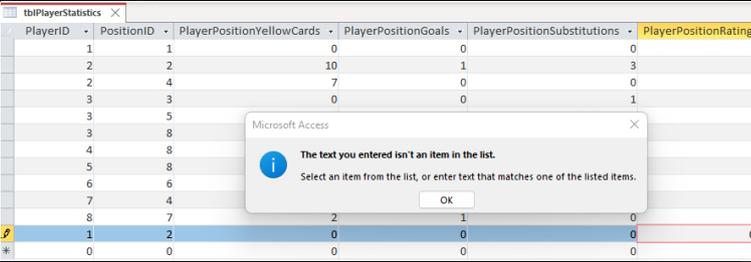
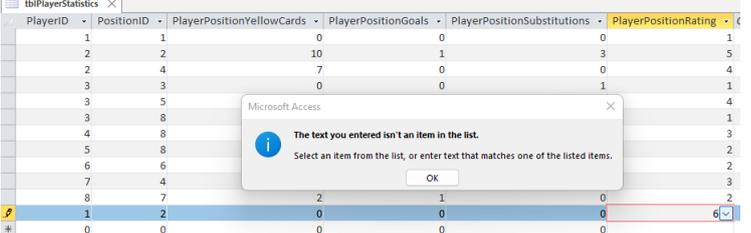
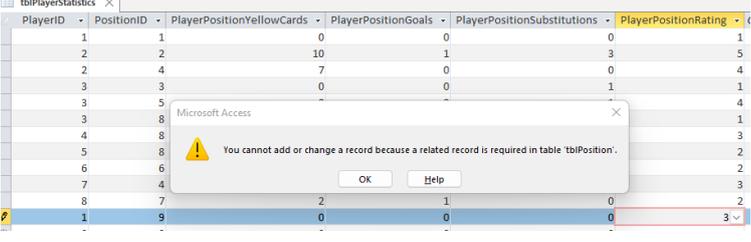
The report must fit on one page.



| Statistics For Players With More Than One Position | | | | | |
|--|---------|---------------|---------------------|-------------|------------------------|
| Surname | Initial | Date of Birth | Number of Positions | Best Rating | Number of Yellow Cards |
| Islam | R | 18/01/2005 | 2 | 4 | 17 |
| Garcia | S | 14/02/2005 | 3 | 1 | 8 |

(d) PDF (**NOTE:** The report is for illustration purposes only. There needs to be a pdf copy of the database report.)

Activity 4 – Structure testing

| Test No | Test data | Expected results | Add screenshot(s) of the results of this test (and any retests) Ensure you show the test data used in the screenshot(s) |
|---------|--|--|--|
| 1 | PlayerID:generated PlayerSurname:Smith PlayerInitial: G PlayerDOB: left blank MentorID:1 | Error message saying “The player’s date of birth must be present” |  |
| 2 | PlayerID:generated PlayerSurname:Smith PlayerInitial: g PlayerDOB: 04/05/2005 MentorID:1 | Initial to be converted to uppercase G |  |
| 3 | PlayerID:generated PlayerSurname:Smith PlayerInitial: G PlayerDOB: 04/05/2005 MentorID:3 | Error message to say the item is not in the list and to select an item from the list |  |
| 4 | PlayerID: 1 PositionID:2 YellowCards:0 Goals:0 Substitutions:0 Rating:0 | Error message to say the item is not in the list and to select an item from the list |  |
| 5 | PlayerID: 1 PositionID:2 YellowCards:0 Goals:0 Substitutions:0 Rating:6 | Error message to say the item is not in the list and to select an item from the list |  |
| 6 | PlayerID: 1 PositionID:9 YellowCards:0 Goals:0 Substitutions:0 Rating:3 | Error message to say the record cannot be added as a related record is required in tblPosition |  |

Part B

Activity 6 – Interface

Referee form

| LevelNumber | |
|-----------------|-----------------|
| Format | Data |
| Control Source | LevelNumber |
| Row Source | tblRefereeLevel |
| Row Source Type | Table/Query |
| Bound Column | 1 |
| Limit To List | Yes |

| RefereeEmail | |
|-----------------|-----------------------------------|
| Format | Data |
| Control Source | RefereeEmail |
| Text Format | Plain Text |
| Input Mask | |
| Default Value | |
| Validation Rule | Like "*?@*.*?*" |
| Validation Text | PlESE enter a valid email address |

```

❏ If IsNull([RefereeSurname]) Then
    MessageBox
        Message The surname must be input
        Beep Yes
        Type None
        Title

❏ Else If IsNull([RefereeEmail]) Then
    MessageBox
        Message You must enter a referee's email address
        Beep Yes
        Type None
        Title

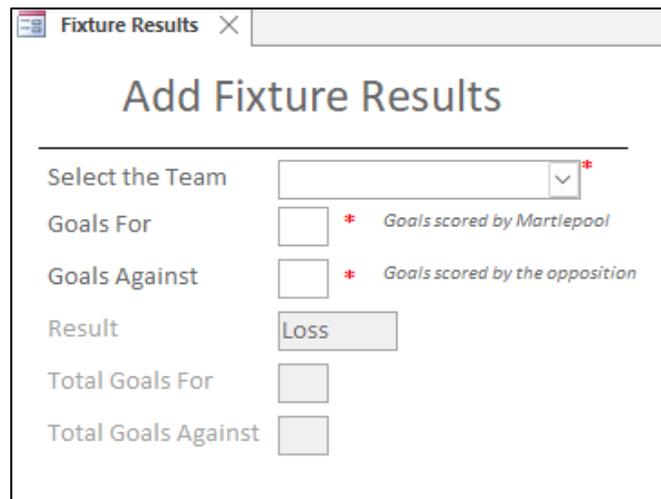
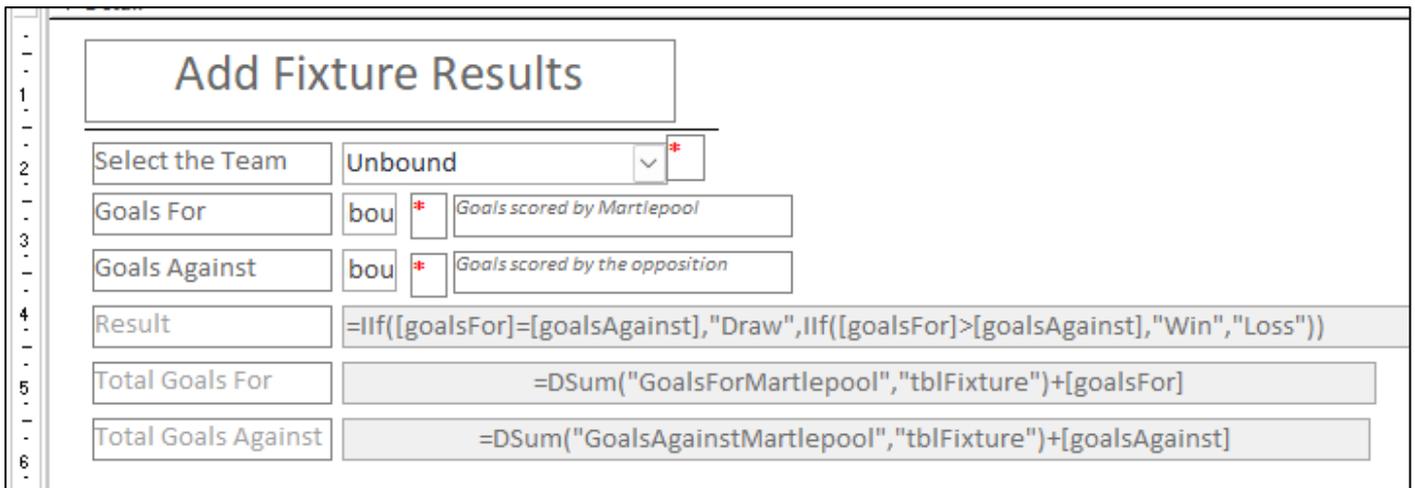
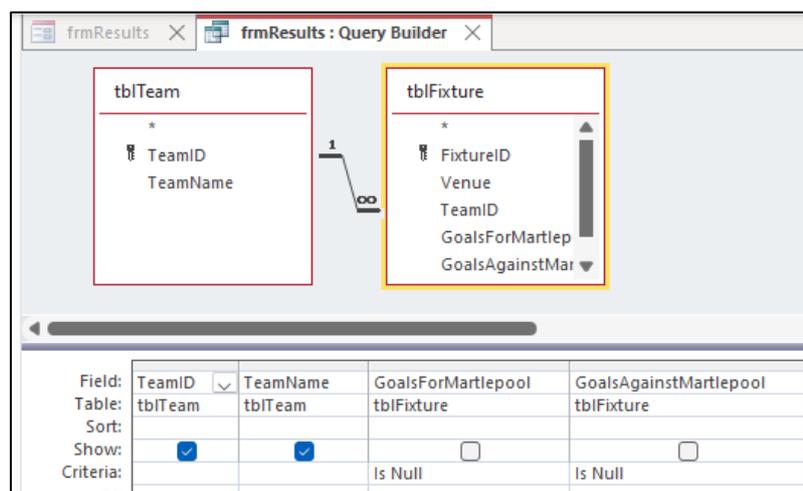
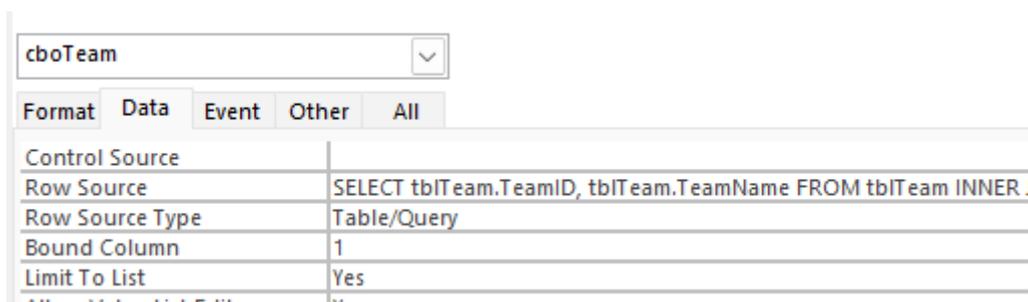
❏ Else If IsNull([LevelNumber]) Or [LevelNumber]<5 Or [LevelNumber]>7 Then
    MessageBox
        Message The level must be between 5 and 7
        Beep Yes
        Type None
        Title

❏ Else
    RunMenuCommand
        Command SaveRecord
    MessageBox
        Message The referee details has been saved
        Beep Yes
        Type None
        Title
    GoToRecord
        Object Type
        Object Name
        Record New
        Offset

End If

```

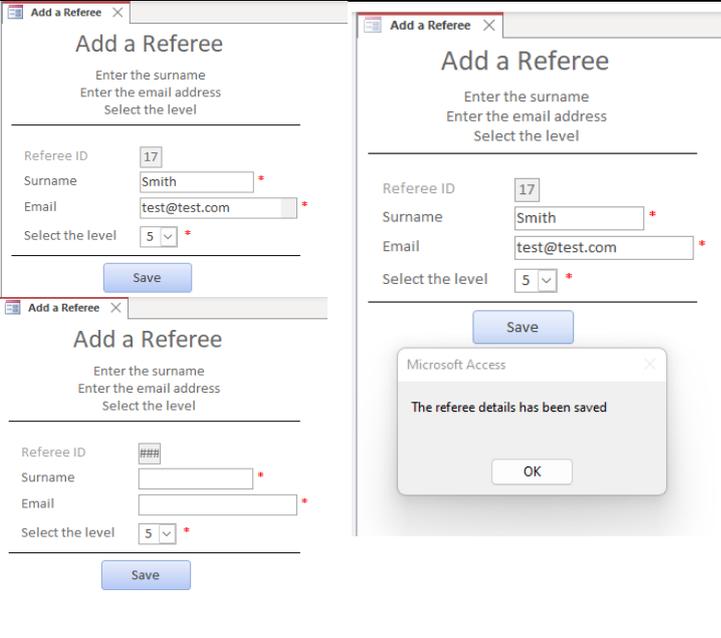
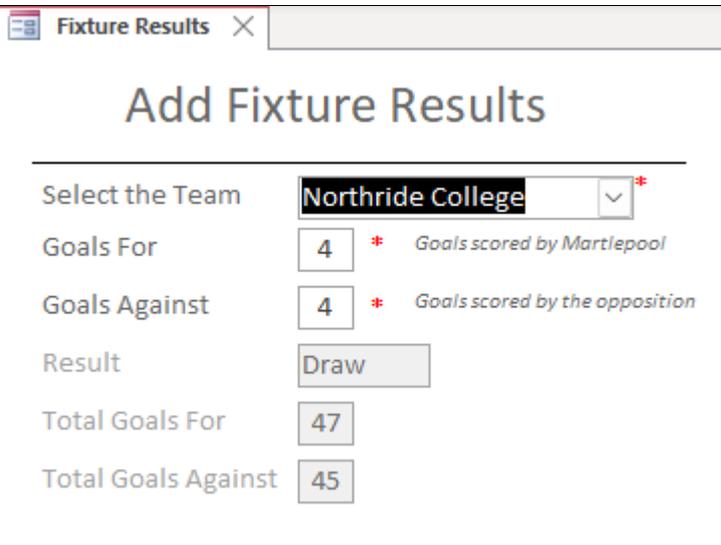
Fixture results form

| Property | Value |
|-----------------|---|
| Control Source | |
| Row Source | SELECT tblTeam.TeamID, tblTeam.TeamName FROM tblTeam INNER... |
| Row Source Type | Table/Query |
| Bound Column | 1 |
| Limit To List | Yes |

Activity 7 – Interface testing

| Test No | Test data | Expected results | Add screenshot(s) of the results of this test (and any retests) Ensure you show the test data used in the screenshot(s) |
|---------|---|---|--|
| 1 | RefereeID: generated Surname: left blank Email: test@test.com Level: 5 | Error message to say "The surname must be input" | <p>The screenshot shows the 'Add a Referee' form. The Referee ID is 16, Surname is blank, Email is test@test.com, and Level is 5. A red asterisk is next to the Surname field. A Microsoft Access dialog box is displayed with the message: 'The surname must be input' and an OK button.</p> |
| 2 | RefereeID: generated Surname: Smith Email: test.com Level: 5 | Error message to say "Please enter a valid email address" | <p>The screenshot shows the 'Add a Referee' form. The Referee ID is 16, Surname is Smith, Email is test.com, and Level is 5. Red asterisks are next to the Surname and Email fields. A Microsoft Access dialog box is displayed with an information icon and the message: 'Please enter a valid email address' and an OK button.</p> |
| 3 | RefereeID: generated Surname: Smith Email: test@test.com Level: 4 | Error message to say The item is not in the list and the user must select an item from the list | <p>The screenshot shows the 'Add a Referee' form. The Referee ID is 16, Surname is Smith, Email is test@test.com, and Level is 4. Red asterisks are next to the Surname and Email fields. A Microsoft Access dialog box is displayed with an information icon and the message: 'The text you entered isn't an item in the list. Select an item from the list, or enter text that matches one of the listed items.' and an OK button.</p> |

| | | | |
|-------|--|--|--|
| 4 | RefereeID: generated Surname: Smith Email: test@test.com Level: 5 | The data is saved in tblReferee. A message is displayed to say the details have been saved and the form clears ready for the next data entry |  <p>The screenshot shows two instances of the 'Add a Referee' form. The top instance has the following data entered: Referee ID: 17, Surname: Smith, Email: test@test.com, and Level: 5. A 'Save' button is visible. The bottom instance shows the form after saving, with the Referee ID field containing '###'. A 'Microsoft Access' dialog box is overlaid on the bottom instance, displaying the message 'The referee details has been saved' and an 'OK' button.</p> |
| 5,6,7 | Team: Northside College Goals For: 4 Goals Against: 4 | Result to be automatically displayed as a draw Total Goals For: 43+4=47 Total Goals Against: 41+4=45 |  <p>The screenshot shows the 'Add Fixture Results' form. The 'Select the Team' dropdown is set to 'Northside College'. The 'Goals For' field is 4, with a note '* Goals scored by Martlepool'. The 'Goals Against' field is 4, with a note '* Goals scored by the opposition'. The 'Result' dropdown is set to 'Draw'. The 'Total Goals For' field is 47, and the 'Total Goals Against' field is 45.</p> |