**Database Design: Exercise 5**

**Task 1**

SurfScotland is a blog used by members to share information about surfing in Scotland. A relational database is used to store details of members and blog posts in two related tables called Member and Post.

* Members must register with SurfScotland and provide an email address before they are allowed to add posts to the blog
* Members must be aged 18 or over
* The number of words in each post is restricted to between 20 and 250 words

Sample data stored in each table is shown below.

Member Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Member ID** | **Last Name** | **First Name** | **Age in Years** | **Email** |
| 0001 | Davies | Jim | 27 | jimbo31@scotmail.co.uk |
| 0002 | McKay | Ann | 28 | mckaya218@hotmail.com |
| 0003 | Roberts | Carol | 35 | croberts123@teachers.com |
| 0004 | Singh | Hardeep | 24 | singh832@scotmail.co.uk |

Post Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Post ID** | **Title** | **Date** | **Member ID** | **Number of Words** |
| 0001 | Welcome to the SurfScotland blog | 01/082016 | 0001 | 228 |
| 0002 | Belhaven Bay Dunbar | 08/08/2016 | 0001 | 176 |
| 0003 | Coldingham Bay Scottish Borders | 13/08/2016 | 0001 | 58 |
| 0004 | Hebridean Surf Lewis | 15/08/2016 | 0002 | 145 |
| 0005 | Broch Open Surf Competition | 15/08/2016 | 0004 | 73 |

Copy and complete data dictionary for the SurfScotland database.

|  |
| --- |
| **Member table** |
| **Field** | **Key** | **Type** | **Field Length** | **Reqd** | **Validation** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**Task 2**

Create the Entity Relationship Diagram to represent the relationship between the Member and Post entities.

**Task 3**

Describe the type of relationship that exists between the Member and Post entities.

**Task 4**

MyPhotoSpace is an online photo gallery stores details of photos displayed on the site in two separate linked tables called Album and Photo.

To minimise data entry errors, MyPhotoSpace applies the following restrictions:

* Each album can store a maximum of 120 photos
* Five different categories of album are available on the gallery: animals, cars, castles, surfing and towns

Sample data stored in each table is shown below.

Album Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Album ID** | **Name** | **Category** | **Description** | **Number of Photos** |
| 121 | BMW Cars | Cars | Photos of BMW cars | 25 |
| 122 | Glenrothes | Towns | Photos from around Glenrothes | 4 |
| 123 | Scottish Castles | Castles | Photos of Scottish castles | 17 |

Photo Table

|  |  |  |  |
| --- | --- | --- | --- |
| **Photo ID** | **Album ID** | **Title** | **Image** |
| 23 | 122 | Thirsty Hippos | hippos\_pmckay.jpg |
| 24 | 122 | Glenrothes Irises | irises\_mharris.jpg |
| 31 | 123 | Newark Castle at Night | newark\_at\_night.png |
| 32 | 122 | Pond at Riverside Park  | riverside\_park\_pong.jpg |

Copy and complete data dictionary for the MyPhotoSpace database.

|  |
| --- |
| **Album table** |
| **Field** | **Key** | **Type** | **Field Length** | **Reqd** | **Validation** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**Task 5**

Create the Entity Relationship Diagram to represent the relationship between the Album and Photo entities.

**Task 6**

Describe the type of relationship that exists between the Album and Photo entities.

**Task 7**

The RetroClothing website uses a relational database to store details of items of women’s clothing for sale and the brand of each item in two separate tables called Item and Brand.

To minimise data entry errors, RetroClothing applies the following restrictions:

* The nationality of the brands used in the website are American, British or Italian
* The eras featured on the site are 1940, 1950s, 1960s and 1970s
* Item codes all have 7 characters
* Item size should be limited to 8, 10, 12, 14 and 16

Sample data stored in each table is shown below.

Item Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item Code** | **Description** | **Size** | **Era** | **Brand ID** |
| RSS1001 | Red swim suit | 10 | 1950s | B3 |
| FDP1002 | Floral dungarees playsuit | 10 | 1990s | B2 |
| BSC2103 | Brown swing coat | 16 | 1960s | B5 |
| CSP3204 | Circle skirt black white polka dot | 12 | 1950s | B4 |
| FPD3225 | Floral print hostess dress | 10 | 1970s | B5 |

Brand Table

|  |  |  |  |
| --- | --- | --- | --- |
| **Brand ID** | **Brand** | **Year Established** | **Nationality** |
| B1 | Valentino | 1965 | Italian |
| B2 | Mary Quant | 1970 | British |
| B3 | Rose Marie Reid | 1946 | American |
| B4 | Elmoor |  | British |
| B5 | Susan Small | 1942 | British |

Copy and complete data dictionary for the RetroClothing database.

|  |
| --- |
| **Item table** |
| **Field** | **Key** | **Type** | **Field Length** | **Reqd** | **Validation** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**Task 8**

Create the Entity Relationship Diagram to represent the relationship between the Item and Brand entities.

**Task 9**

Describe the type of relationship that exists between the Item and Brand entities.

T**ask 10**

The SportsStats website uses a relational database to store details of Scottish sports teams and players in two separate tables called Player and Team.

* All players have a unique Player ID that has 4 characters
* Players are given a star rating between 1 and 5
* The website features a limited number of sports: basketball, handball, hockey and netball

Sample data stored in each table is shown below.

Player table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Player ID** | **Team ID** | **Star Rating** | **First Name** | **Last Name** | **Date of Birth** |
| L18C | 111 | 4 | Lindy | Osborne | 14/01/1990 |
| F19F | 113 | 3 | Fred | Freddricks | 30/07/1987 |
| Y01D | 131 | 5 | Yasmine | Davies | 22/11/1992 |

|  |
| --- |
| Team table |
| **Team ID** | **Team Name** | **Sport** | **Manager** | **Coach** | **Home Town** |
| 111 | West Stars | Hockey | Chris Davidson |  | Paisley |
| 112 | Killie Shooters | Basketball |  | Liz Smillie | Ardrossan |
| 113 | Jumpin Jacks | Basketball | Dave Ford | Ali Mustapha | Dunbar |

Copy and complete data dictionary for the SportsStats database.

|  |
| --- |
| **Team table** |
| **Field** | **Key** | **Type** | **Field Length** | **Reqd** | **Validation** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**Task 11**

Create the Entity Relationship Diagram to represent the relationship between the Player and Team entities.

**Task 12**

Describe the type of relationship that exists between the Team and Player tables.