**Database Design Coursework Template**

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**Scenario Topic Name:** Local Gym

**Scenario**

There is a local gym that provides a variety of activities (e.g. Badminton, Swimming, Gym) as well as a Spa area. Anyone can register for this gym with 3 monthly tiers available, and advantages for each of them: Basic, Standard and Premium. The Standard membership allows members to book free gym access, 10 free activities per month, whereas the Premium membership includes this plus 5 more free activities and free spa access. The Basic members requires members must pay to book gym, activities and the spa. When members register for the gym they will instantly be given a unique membership number, their profile must consist of their name, date of birth, email, contact number, credit card and address. Members are also able to register using another members membership number as a referral. Each booking will have a unique number, and it will detail the member who booked it, the activity and whether the booking has passed or not.

**Example queries** (Minimum 5 – list, who, which, how many, most, fewest etc. - check that your models have the attributes needed to answer the queries)

How many members have a Premium membership?

List all members that have been referred by another member.

What is the most common activity booked by members?

Which member uses the spa more?

How much money does the gym make from Basic Members in March?

**Entity Relationship Model** (insert a jpg image of your model exported from Visual Paradigm in the space below).

A diagram of a server

Description automatically generated

**Relational Model Tables**

* Copy and paste the table below for as many relational tables as you need
* Replace the placeholder names (table-name1, attribute-name5 etc) with the table and attribute names you derived from your ER model
* List primary key attributes first
* Add new rows to the tables (in the correct place) as needed
* Delete any unnecessary rows (attribute rows and foreign key rows if not used)
* Primary keys are to be specified in the format PRIMARY KEY (attribute-name1, attribute-name2, etc)
* Foreign keys are to be specified in the format ‘FOREIGN KEY (attribute-name) REFERENCES table-name (attribute-name)

|  |  |
| --- | --- |
| **Relational table specification** | **Marker’s corrections (Do not write in this column)** |
| **Table name:** Members |  |
| **Attributes** |  |
| member\_id |  |
| membership\_name |  |
| referral\_member\_id |  |
| name |  |
| date\_of\_birth |  |
| gender |  |
| email |  |
| contact\_number |  |
| credit\_card |  |
| billing\_address |  |
| **PRIMARY KEY** (member\_id) |  |
| **FOREIGN KEY** (membership\_name) REFERENCES Membership (membership\_name) |  |
| **FOREIGN KEY** (referral\_member\_id) REFERENCES Members (member\_id) |  |

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| --- | --- |
| **Relational table specification** | **Marker’s corrections (Do not write in this column)** |
| **Table name:** Membership |  |
| **Attributes** |  |
| membership\_name |  |
| monthly\_fee |  |
| start\_date |  |
| end\_date |  |
| **PRIMARY KEY** (membership\_name) |  |

|  |  |
| --- | --- |
| **Relational table specification** | **Marker’s corrections (Do not write in this column)** |
| **Table name:** BasicMembership |  |
| **Attributes** |  |
| membership\_name |  |
| paid\_activity\_access |  |
| paid\_spa\_access |  |
| paid\_gym\_acces |  |
| **PRIMARY KEY** (membership\_name) |  |
| **FOREIGN KEY** (membership\_name) REFERENCES Membership (membership\_name) |  |

|  |  |
| --- | --- |
| **Relational table specification** | **Marker’s corrections (Do not write in this column)** |
| **Table name:** StandardMembership |  |
| **Attributes** |  |
| membership\_name |  |
| free\_activities\_per\_month |  |
| paid\_spa\_access |  |
| free\_gym\_acces |  |
| **PRIMARY KEY** (membership\_name) |  |
| **FOREIGN KEY** (membership\_name) REFERENCES Membership (membership\_name) |  |

|  |  |
| --- | --- |
| **Relational table specification** | **Marker’s corrections (Do not write in this column)** |
| **Table name:** PremiumMembership |  |
| **Attributes** |  |
| membership\_name |  |
| free\_activities\_per\_month |  |
| spa\_access |  |
| free\_gym\_acces |  |
| **PRIMARY KEY** (membership\_name) |  |
| **FOREIGN KEY** (membership\_name) REFERENCES Membership (membership\_name) |  |

|  |  |
| --- | --- |
| **Relational table specification** | **Marker’s corrections (Do not write in this column)** |
| **Table name:** Bookings |  |
| **Attributes** |  |
| booking\_id |  |
| member\_id |  |
| activity\_name |  |
| booking\_date |  |
| status |  |
| **PRIMARY KEY** (booking\_id, member\_id) |  |
| **FOREIGN KEY** (member\_id) REFERENCES Members (member\_id) |  |
| **FOREIGN KEY** (activity\_name) REFERENCES Activities (activity\_name) |  |

|  |  |
| --- | --- |
| **Relational table specification** | **Marker’s corrections (Do not write in this column)** |
| **Table name:** Activities |  |
| **Attributes** |  |
| activity\_name |  |
| fee |  |
| **PRIMARY KEY** (activity\_name) |  |

**Marker’s Comments** (Do not write in this section)

**Important:** Please note that marker’s corrections to your relational tables are there to help you construct a working database for the second coursework. They are not the determinant of your mark. For more information on how your work is assessed see the coursework specification and grade related criteria.

**Coursework Mark** (100 marks available):