# Worksheet 5 Defining and updating tables using SQL

**Task 1**

# 1. The table below shows common data types:

|  |  |  |
| --- | --- | --- |
| **Data type** | **Description** | **Example** |
| CHAR(n) | Character string of fixed length n | ProductCode CHAR(6) |
| VARCHAR(n) | Character string variable length, max. n | Surname VARCHAR(25) |
| BOOLEAN | TRUE or FALSE | ReviewComplete BOOLEAN |
| INTEGER, INT | Integer | Quantity INTEGER |
| FLOAT | Number with a floating decimal point | Length FLOAT (10,2) (maximum number of digits is 10 and maximum number after decimal point is 2) |
| DATE | Stores Day, Month, Year values | HireDate DATE |
| TIME | Stores Hour, Minute, Second values | RaceTime TIME |
| CURRENCY | Formats numbers in the currency used in your region | EntryFee CURRENCY |

# (a) Write an SQL statement to create a table for a table called Member, which has the following fields:

MemberID 4 characters (Primary key, compulsory field)

Firstname max 12 characters (compulsory field)

Surname max 20 characters (compulsory field)

DateJoined Date dd/mm/yy (compulsory field)

SubPaid Yes/No (optional field)

CREATE TABLE Member

(MemberID CHAR(4) NOT NULL,

Firstname VARCHAR(12) NOT NULL,

Surname VARCHAR(20) NOT NULL,

DateJoined DATE NOT NULL,

SubPaid BOOLEAN,

PRIMARY KEY(MemberID)

);

(b) Write an SQL statement to amend the table to add a new column for Category, a Boolean data type

ALTER TABLE Member

ADD Category BOOLEAN;

(c) Write an SQL statement to delete the column SubPaid

ALTER TABLE Member

DROP SubPaid;

(d) Write an SQL statement to change the maximum length of the Firstname field to 15 characters

ALTER TABLE Member

MODIFY COLUMN Firstname VARCHAR(15);

**Task 2**

# 

2. Three linked tables are defined as follows:

Product

ProductComponent

Component

Product (ProductID, Description, Price)

ProductComponent (*ProductID, CompID*, Quantity)

Component (CompID, CompDesc, Cost)

When there are three linked tables, the linking table is defined as follows:

CREATE TABLE ProductComponent

(

ProductID CHAR(4) NOT NULL,

CompID CHAR(6) NOT NULL,

Quantity INTEGER,

FOREIGN KEY ProductID REFERENCES Product(ProductID),

FOREIGN KEY CompID REFERENCES Component(CompID),

PRIMARY KEY (ProductID, CompID)

)

Write the SQL statements to create the table **Component**. CompDesc is to be a maximum of 25 characters, and Cost is a currency field. All fields are compulsory.

CREATE TABLE Component(

CompID CHAR(4) NOT NULL,

CompDesc VARCHAR(25) NOT NULL,

Cost CURRENCY NOT NULL,

PRIMARY KEY(CompID)

);

**Task 3**

3. (a) Write an SQL statement to insert a new record into the Member table described in Task 1a. The new record is to have the following data values:

MemberID M046

Firstname William

Surname Oldfield

DateJoined 23/06/2016

SubPaid No

INSERT INTO Member(MemberID, Firstname, Surname, DateJoined, SubPaid) VALUES(“M046”, “William”, “Oldfield”, 23062016, FALSE);

(b) Write an SQL statement to update this record, the first name is to be changed to “Bill” and the subscription has now been paid.

UPDATE Member

SET Firstname = “Bill” AND SubPaid = TRUE

WHERE MemberID = “M046”;

(c) Write an SQL statement to delete the record for member M025.

DELETE FROM Member

WHERE MemberID = “M025”;