Faculty of Computers and Information
Information Systems Department

Assignment 1 SQL

To be delivered individually as hard copy (printed) on 12-08-2014 to your lab TA

Maximum grade is 10 to be scaled to 5

1) Provide DDL statements to create the following data base "Use suitable data types for fields and provide primary, and foreign keys"4 grades

- Author (<u>authorID</u>, firstname, lastname)
- Publisher (<u>publisherID</u>, name)
- Book (<u>bookID</u>, isbn, title, price, publisherID)
- Book_Author (<u>bookID, authorID</u>)

```sql
CREATE TABLE publisher(
      publisherID int PRIMARY KEY,
      name varchar(50) NULL,
)


CREATE TABLE Author(
      authorID int PRIMARY KEY,
      firstname varchar(20) NULL,
          lastname varchar(20) NULL
      )


CREATE TABLE Book(
      bookID int PRIMARY KEY,
      isbn varchar(15) NULL,
      title varchar(50) NULL,
      price money NULL,
      publisherID int NULL

CONSTRAINT FK_Book_publisher FOREIGN KEY(publisherID)
      REFERENCES publisher (publisherID)


      )

CREATE TABLE Book_Author(
      bookID int NOT NULL,
authorID int NOT NULL
CONSTRAINT PK_Book_Author PRIMARY KEY  (bookID, authorID),

CONSTRAINT FK_Book_Author_Author FOREIGN KEY(authorID)
REFERENCES Author (authorID),

CONSTRAINT FK_Book_Author_Book FOREIGN KEY(bookID)
REFERENCES Book (bookID)
)
```

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2) Provide DML syntax for the following simple selection
   a. List the full details of all books ordered by price descending.

```
SELECT
Book.bookID,Book.isbn,Book.title,Book.price,Book.publisherID
FROM Book
ORDER BY Book.price DESC
```

   b. List the full details of all books where the title includes the word 'database' and isbn start with '2014'.

```
SELECT
Book.bookID,Book.isbn,Book.title,Book.price,Book.publisherID
FROM Book
WHERE
Book.title LIKE 'database' AND
Book.isbn LIKE '2014%'
```

3) Provide DML syntax for the following Joins + nested queries (Multiple Possible solutions available this is just one of them)
   a. List the title, price, and publisher name of each book.

```
SELECT Book.title,Book.price,publisher.name
FROM Book INNER JOIN publisher
ON Book.publisherID = publisher.publisherID
```

   b. Show the total price and the number of books wrote by 'Ameen'.

```
SELECT Sum(Book.price) as totalPrice,Count(Book_Author.authorID) as
NumOFBooks
FROM Book
INNER JOIN Book_Author ON Book_Author.bookID = Book.bookID
INNER JOIN Author ON Author.authorID = Book_Author.authorID AND
Author.firstname = 'ameen'
```

   c. List the full details of all books written by an author with the last name 'Ameen'.

```
SELECT Book.bookID,Book.isbn,Book.title,Book.price,Book.publisherID
FROM Book
INNER JOIN Book_Author ON Book_Author.bookID = Book.bookID
INNER JOIN Author ON Author.authorID = Book_Author.authorID
WHERE Author.firstname = 'ameen'
```

   d. List the authors' details who published with the publisher 'Nahdet-Masr'. 2 grades

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```sql
SELECT Author.authorID,Author.firstname,Author.lastname
FROM Book
INNER JOIN Book_Author ON Book_Author.bookID = Book.bookID
INNER JOIN Author ON Author.authorID = Book_Author.authorID
INNER JOIN publisher ON Book.publisherID = publisher.publisherID
WHERE publisher.name = 'Nahdet-Masr'

Another solution

SELECT Author.authorID,Author.firstname,Author.lastname
FROM Book
INNER JOIN Book_Author ON Book_Author.bookID = Book.bookID
INNER JOIN Author ON Author.authorID = Book_Author.authorID
WHERE Book.publisherID IN (SELECT publisherID FROM publisher WHERE
publisher.name = 'Nahdet-Masr'
)

Another solution

SELECT Author.authorID,Author.firstname,Author.lastname
FROM Author
INNER JOIN Book_Author ON Author.authorID = Book_Author.authorID
INNER JOIN Book ON Book_Author.bookID = Book.bookID
INNER JOIN publisher ON Book.publisherID = publisher.publisherID
WHERE publisher.name = 'Nahdet-Masr'
```