

*SQL Essential*

Training Assignments

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| Program Code | SQLE |
| Version | 3.1 |
| Effective Date | 01/11/2016 |

**Hanoi, 11/2016**

RECORD OF CHANGES

\*A - Added M - Modified D - Deleted

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| --- | --- | --- | --- | --- |
| Date | Changes | A\* M, D | Contents | Version |
| 14-Oct-2016 | Create | A | Add the new assignments. | v1.0 |
| 14-Oct-2018 | Update | M | Template. | v1.1 |
| 01-Jun-2019 | Update | M | Update Objective | v1.2 |
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| --- | --- |
|  | **CODE: Assignment1\_Opt3**  **TYPE: n/a**  **LOC: n/a**  **DURATION: 180 MINUTES** |

# For the following assignments:

* Print out respectively the screenshots to show the query results.
* Pack screenshots and SQL scripts or your answers into the zip file named Assignment<i>\_AccountName.zip (for instance: Assignment1\_NamNT.zip) then handle to the evaluator via email ([XYZ@fsoft.com.vn](mailto:XYZ@fsoft.com.vn) ) or follow the guidance of the class admin.

# Lesson 1: Database Basics

## Assignment 1\_Opt3: Pharmacy Management

1. Exercise 1

**Barem**: 30%

**Objective**: K4SD (Understand basic database knowledge (DBMS, RDBMS, ERD))

**Problem Description**:

The following is a description of some data requirements for a chain of pharmacies.

* A pharmaceutical company manufactures one or more drugs, and each drug is manufactured and marketed by exactly one pharmaceutical company.
* Drugs are sold in pharmacies. Each pharmacy has a unique identification. Every pharmacy sells *one or more drugs*, but some pharmacies do not sell every drug.
* Drug sales must be recorded by prescription, which are kept as a record by the pharmacy. A prescription clearly identifies the drug, physician, and patient, as well as the date it is filled.
* Doctors prescribe drugs for patients. A doctor can prescribe one or more drugs for a patient and a patient can get one or more prescriptions, but a prescription is written by only one doctor.

Pharmaceutical companies *may have* long-term contracts with pharmacies and a pharmacy can contract with zero, one, or more pharmaceutical companies. Each contract is uniquely identified by a contract number.

**Questions to answer**:

Draw the appropriate entity-relationship (E-R) diagram.

**Estimated Time to complete**: 60 mins.

1. Exercise 2

**Barem**: 30%

**Objective**: K4SD (Understand basic database knowledge (DBMS, RDBMS, ERD))

**Problem Description**:

Consider the following relations for a database that keeps track of student enrollment in courses and the books adopted for each course (Primary Key is mark post-fix with #):

**STUDENT**(SSN#, Name, Major, Bdate)

**COURSE**(Course#, Cname, Dept)

**ENROLL**(SSN#, Course#, Quarter, Grade)

**BOOK\_ADOPTION**(Course#, Quarter, Book\_ISBN#)

**BOOK**(Book\_ISBN#, Book\_Title, Publisher, Author)

**Questions to answer**:

Draw a relational schema diagram specifying the foreign keys for this schema.

**Estimated Time to complete**: 60 mins.

1. Exercise 3

**Barem**: 20%

**Objective**: K4SD (Understand basic database knowledge (DBMS, RDBMS, ERD))

**Problem Description**:

Below table will have less than 1 million records. It contains information:

|  |  |
| --- | --- |
| **Column** | **Description** |
| ID | Primary Key of the table, each time a record is inserted into the table this column is incresed by 1. |
| Name | A string in English |
| Code | An alphanumeric code that has five characters |
| ModifiedDate | The datetime of the last modification. |

**Questions to answer**:

You have to choose approxiate data types for these columns in order to minimize the amount of space used to store each row.

**Estimated Time to complete**: 30 mins

1. Exercise 4

**Barem**: 20%

**Objective**: K4SD (Understand basic database knowledge (DBMS, RDBMS, ERD))

**Problem Description**:

Below table will have more than 1 million records. It contains information:

|  |  |
| --- | --- |
| Column | Description |
| ID | Primary Key of the table, each time a record is inserted into the table this column is incresed by 1. |
| Name | A string in any language. |
| BirthDate | Date of birth |
| Gender | Integer, 0: Male, 1: Female, NULL: Unknown |
| IsDeletedFlag | 0 means active, 1 means deleted. |

**Questions to answer**:

You have to choose approxiate data types for these columns in order to minimize the amount of space used to store each row.

**Estimated Time to complete**: 30 mins.

**-- THE END --**