

*SQL BASICS*

Training Assignments

|  |  |
| --- | --- |
| Program Code | BSQL |
| Version | 3.1 |
| Effective Date | 01/11/2016 |

**Hanoi, 11/2016**

RECORD OF CHANGES

\*A - Added M - Modified D - Deleted

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Contents

[For the following assignments: 3](#_Toc14120348)

[Day 1. Lesson 1: Database Basics 3](#_Toc14120349)

[Assignment 1\_Opt1: Student Management 3](#_Toc14120350)

[1. Exercise 1 3](#_Toc14120351)

[2. Exercise 2 4](#_Toc14120352)

|  |  |
| --- | --- |
|  | **CODE: BSQL\_Assignment1\_Opt1**  **TYPE: n/a**  **LOC: n/a**  **DURATION: 120 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 BSQL\_Assignment<i>\_AccountName.zip (for instance: BSQL\_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.

# Day 1. Lesson 1: Database Basics

## Assignment 1\_Opt1: Student Management

1. Exercise 1

**Barem**: a-30%, b-30%

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

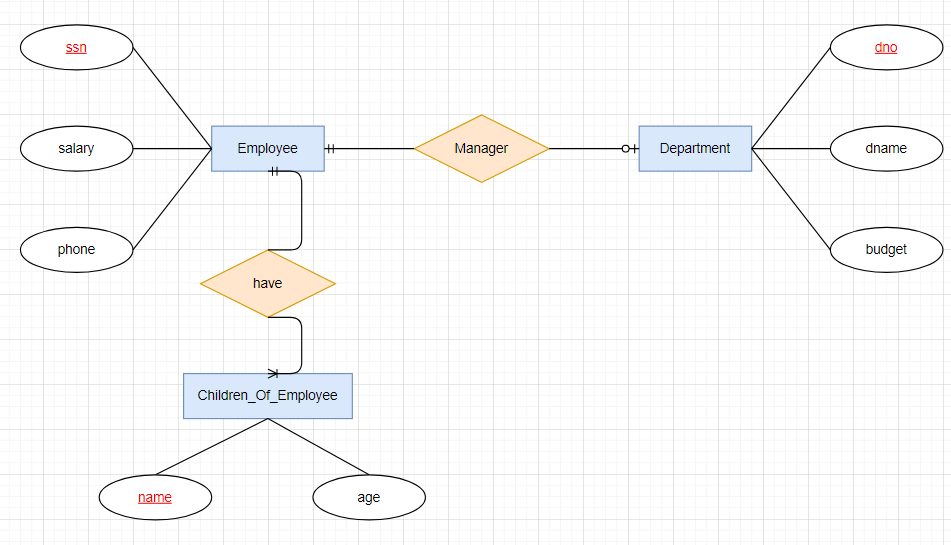
**Problem Description**:

A company database needs to store information about **employees** (identified by *ssn, with salary and phone as attributes),* **departments** *(identified by dno,* with *dname and budget as attributes), and* **children of employees** *(with name and age* as attributes).

Employees *work in departments; each department is managed by an* employee; a child must be identified uniquely by *name when the parent (who is an* employee; assume that only one parent works for the company) is known. We are not interested in information about a child once the parent leaves the company.

**Questions to answer**:

1. Draw an ER diagram that captures this information.



1. Convert from ER diagram to relational schema.

**Children\_Of\_Employee**

|  |  |  |
| --- | --- | --- |
| name | age | ssn |

**Employee:**

|  |  |  |
| --- | --- | --- |
| ssn | Salary | phone |

**Department:**

|  |  |  |
| --- | --- | --- |
| dno | dname | budget |

**Emp\_Dep:**

|  |  |
| --- | --- |
| ssn | dno |

**Estimated Time to complete**: 60 mins

1. Exercise 2

**Barem**: 40%

**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#)

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

**Questions to answer**:

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

**Student:**

|  |  |  |  |
| --- | --- | --- | --- |
| **SSN** | **Name** | **Major** | **Bdate** |

**Course :**

|  |  |  |
| --- | --- | --- |
| **Course** | **Cname** | **Dept** |

**Enroll:**

|  |  |  |  |
| --- | --- | --- | --- |
| **SSN** | **Course** | **Quarter** | **Grade** |

**Book\_Adoption:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course** | **Quarter** | **Book** | **Book\_ISBN** |

**Text:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Book\_ISBN** | **Book\_Title** | **Publisher** | **Author** |

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

**--THE END--**