**Exercise**

**T-SQL**

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# Introduction

This document is a specification for the exercise problems for the topic, T-SQL. It tests the student's level of knowledge and understanding of the topic.

This document consists of a set of problems that the student needs to solve and submit to the trainer, in the format specified in the Deliverable section of this document.

This exercise is to be performed only after the theory and workshop sessions of the topic; hence the student would have enough knowledge and confidence on the topic. Ideally, the student should be able to solve the problems himself; however, he/she can seek the assistance of the trainer or lab assistant in case he is stuck with a specific problem.

# Objectives

The objectives of this exercise are to test the student's understanding and knowledge on the topic, and to allow him to re-iterate his understanding by applying that knowledge in a software problem, so that he can use it in the future endeavors.

# Problem: University System

Consider the tables listed below of University System.

|  |  |
| --- | --- |
| **Table - University** | |
| UID (primary key) | int |
| Name | varchar (20) |
| Chancellor | varchar (20) |

|  |  |
| --- | --- |
| **Table - College** | |
| CID (primary key) | int |
| University (foreign key references UID in University table) | int |
| Dean (foreign key references DeanID from Dean table) | int |
| Name | varchar (20) |

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| --- | --- |
| **Table - Dean** | |
| DeanID (primary key) | int |
| Name | varchar (20) |
| DateOfBirth | DateTime |

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| **Table - Department** | |
| DID (primary key) | int |
| College ( foreign key references CID in College table) | int |
| Name | varchar (20) |

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| --- | --- |
| **Table - Professor** | |
| PID (primary key) | int |
| Department ( foreign key references DID in Department table) | int |
| Name | varchar (20) |

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| --- | --- |
| **Table - Course** | |
| CourseID (primary key) | int |
| Department ( foreign key references DID in Department table) | int |
| Name | varchar (20) |
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| --- | --- |
| **Table - Subject** | |
| SubjectID (primary key) | int |
| Course ( foreign key references CourseID in Course table) | int |
| Professor (foreign key references PID in professor table) | int |
| Name | varchar(20) |

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| --- | --- |
| **Table - Student** | |
| StudentID (primary key) | int |
| Department ( foreign key references DID in Department table) | int |
| Name | varchar (20) |
| DateofEnrollment | smalldatetime |
| TelephoneNumber | varchar(20) |

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| --- | --- |
| **Table - Student\_Registration** | |
| Student (foreign key references StudentID in Student table) | int |
| Subject ( foreign key references SubjectID in Subject table) | int |
|  |  |

# Questions:

1. Write stored procedures for insert ,update, delete data to the above tables.
2. Write stored procedures for retrieve details of students of computer science department.
3. Write user defined function to implement auto increment of id fields of all the tables.
4. Write userdefined function to list Dean and University of various colleges
5. Write userdefined function to generate automatic code for college eg:For college,CID will start from COL 00001
6. Write userdefined function to list colleges under ‘cambridge university’
7. Create a new table temp\_student with same structure as student table and write triggers to insert updated/deleted data of table student to temp\_student.

# Deliverable

The queries and answers for the questions are to be saved in a SQLSERVER2008.

# Demo

The student should describe the queries to the instructor on a PC.

# Conclusion

The completion of this exercise should re-iterate the student's confidence on T-SQL. Please make sure you have gained enough confidence to move on.