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| المملكة العربية السعودية  وزارة التعليم العالي  كلية الحاسب |  | Kingdom of Saudi Arabia  Ministry of Higher Education  College of computer |

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| IS Project |
|  |
| Teacher: Nada Al\_Hothily |

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| By | | |
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| |  | | --- | | **Content** |  |  |  | | --- | --- | | Content | Page 2 | | Introduction | Page 3 | | Report | Page 3 | | Appendix 1 | Page 7 | | Appendix 2 | Page 14 | | | |

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| **Introduction** |

In this course we're asked to build a database from given requirements. The database is for a university that has many colleges, departments, courses, staff and etc. we've provided the ER diagram and edited the requirements to be more realistic in phase 1. In this phase, we're asked to insert some data to the tables, write some inquiries, create index to some or all tables, and then provide our opinions.

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| **Report** |

To be able to create useful index, I should first provide data to the tables. I've chosen three tables to insert data to which are noticeably relate to each other. The three tables are staff, college, department and staff\_department\_association. You can find insert queries in appendix 2. Also, ER diagram and create queries are provided too, appendix 1.

I've written two complex queries to retrieve data from the tables. One of them is the answer of the question "give me the names of staffs who are also college managers?". The second one is the answer of "give me the names of staffs who has ever worked in department d000000005? ".

|  |
| --- |
| 1: select DISTINCT staff.Name  from staff, Department  where department.Manager = staff.id and staff.id in (  select DISTINCT college.Manager  from College  ) |
| 2: select distinct staff.Name  from staff, staff\_department\_association  where staff\_department\_association.Department\_ID in (  select department.ID  from department  where department.ID = "d000000005"  ) |

I've created index to the column name in the table staff by executing the query

|  |
| --- |
| create index staff\_name on staff(Name); |

To see how this index affected the database, I've dropped it using the statement drop index staff\_name on staff. I thought the time cost to the inquiries wouldn't be high, because we have nearly 20 rows and our inquiries aren't complex enough because they retrieve data from at least 3 tables. My expectations held true since the time cost to the first inquiry is 0.0022. I've calculated the time cost thrice to get the average. Second time was 0.0026 and third time with 0.0031 cost. The average is 0.002633. I've repeated the same action to the other inquiry with average 0.0018.

|  |  |  |
| --- | --- | --- |
| First time: 0.0016 | Second time:0.0018 | Third time: 0.0020 |

I've created an index on the column name from staff since both queries select that column. Used statement is "create index staff\_name on staff(Name);". My expectation was that the cost will be less than the previous time, because the column name now is indexed in the database that makes searching through it much simpler. The below table shows what happened.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | First time: | Second time: | Third time: | Average: |
| First inquiry: | 0.0018 | 0.0015 | 0.0016 | 0.0016 |
| Second inquiry: | 0.0013 | 0.0013 | 0.0015 | 0.0013 |

The average of the first inquiry is 0.001633 which is less than the previous average by 0.001 and this is a noticeable decrease.

I've created another index to the same table but on the column id by executing the statement "create index staff\_id on staff(id);". By repeating all the steps above, I've obtained this data.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | First time: | Second time: | Third time: | Average: |
| First inquiry: | 0.0018 | 0.0015 | 0.0015 | 0.0016 |
| Second inquiry: | 0.0019 | 0.0013 | 0.0016 | 0.0016 |

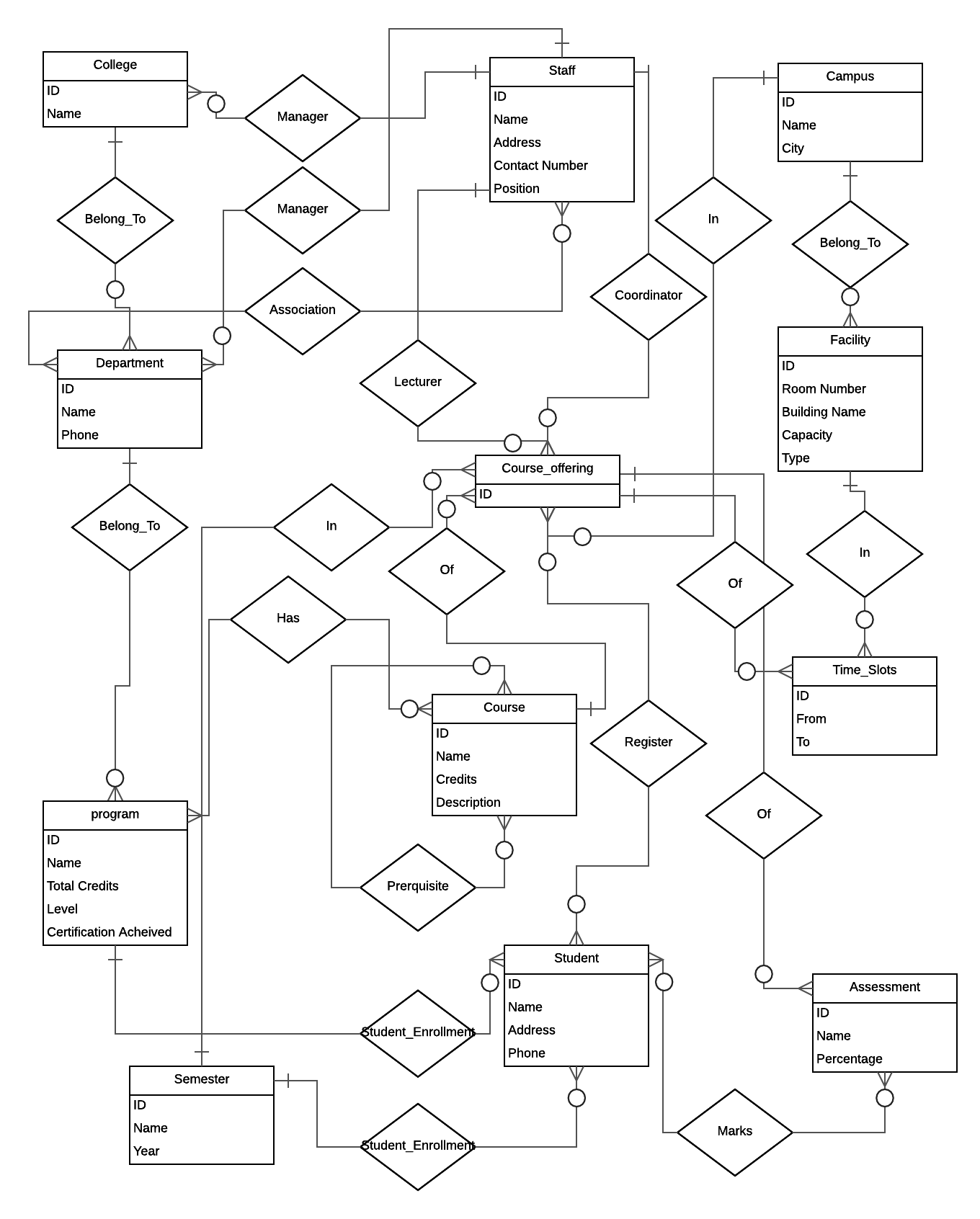
I've seen that the created index has no effect on the cost. I think the cause is that in inquiry 2, there's no use of the column staff\_id.

By executing another statement "create index department\_id on department(ID)". I've obtained these data:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | First time: | Second time: | Third time: | Average: |
| First inquiry: | 0.0016 | 0.0018 | 0.0016 | 0.0016 |
| Second inquiry: | 0.0012 | 0.0013 | 0.0009 | 0.0011 |

From the three indexes I've created, I conclude that the index decrease cost of time. From the first index which was on staff(name), both inquires time cost decreased from 0.0026 and 0.0018 to 0.0016 and 0.0013. because in both inquiries select statement include staff's name. From the second index which was on staff' id, didn't has a noticeable difference. From the third index, there's a noticeable decrease on average of the second inquiry that's because the inner SELECT select department id.

|  |
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| **Appendix 1** |



|  |
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| Mapping in The 3rd Norm |

College

|  |  |  |
| --- | --- | --- |
| ID | Name | Manager |

Department

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | Name | Phone\_Number | Manager | College\_ID |

Staff

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | Name | Address | Contact\_Number | Position |

Staff\_Department\_Association

|  |  |  |  |
| --- | --- | --- | --- |
| Staff\_ID | Department\_ID | Start\_Date | End\_Date |

Program

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ID | Name | Total\_Creidts | Level | Certification\_Achieved | Department |

Campus

|  |  |  |
| --- | --- | --- |
| ID | Name | City |

Facility

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ID | Campus\_ID | Room\_NO | Building\_Name | Capacity | Type |

Semester

|  |  |  |
| --- | --- | --- |
| ID | Name | Year |

Course

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Name | Credits | Description |

Course\_Program

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Course\_ID | Program\_ID | Start\_Date | End\_Date | Type |

Prerequisite\_Courses

|  |  |
| --- | --- |
| Course\_ID | Prerequisite\_Course\_ID |

Course\_Offering

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ID | Course\_ID | Semester\_ID | Campus\_ID | Coordinator\_ID | Lecturer\_ID |

Assessment

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Course\_Offering\_ID | Name | Percentage |

Student

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Name | Address | Phone |

Student\_Course\_Registration

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Student\_ID | Course\_offering\_ID | Enrollment\_Date | Final\_Mark | Final\_Grade |

Time\_Slots

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | Course\_Offering\_ID | Facility\_ID | From | To |

Student\_ Enrollment

|  |  |  |  |
| --- | --- | --- | --- |
| Student\_ID | Program\_ID | Semester\_ID | Date |

Student\_Assessment\_Scores

|  |  |  |
| --- | --- | --- |
| Student\_ID | Assessment\_ID | Marks |

Username

|  |  |  |
| --- | --- | --- |
| Student\_ID | Username | Password |

Queries

create table Staff

(ID char(10) ,

Name varchar(200) unique not null,

Address varchar(200),

Contact\_Number varchar(200),

Position varchar(200),

PRIMARY KEY (ID)

);

create table College

(ID char(10) ,

Name varchar(200) unique not null,

Manager char(200) references Staff(ID),

PRIMARY KEY (ID)

);

create table Department

(ID char(10) ,

Name varchar(200) unique not null,

Phone\_Number varchar(200),

Manager char(200) references Staff(ID) ,

College\_ID char(10) references College(ID),

PRIMARY KEY (ID)

);

create table Staff\_Department\_Association

(Staff\_ID char(10) REFERENCES Staff (ID),

Department\_ID char(10) REFERENCES Department (ID),

Start\_Date datetime not null ,

End\_Date datetime not null,

PRIMARY KEY (Staff\_ID , Department\_ID)

);

create table Program

(ID char(10) ,

Name varchar(200) unique not null,

Total\_Creidts int not null,

Level varchar(200) not null,

Certification\_Achieved varchar(200) not null,

Department\_ID char(10) REFERENCES Department (ID),

PRIMARY KEY (ID)

);

create table Campus

(ID char(10) ,

Name varchar(200) unique not null,

City varchar(200) not null,

PRIMARY KEY (ID)

);

create table Facility

(ID char(10) ,

Campus\_ID char(10) REFERENCES Campus (ID),

Room\_NO varchar(10) not null,

Building\_Name varchar(200) not null,

Capacity varchar(200) not null,

Type varchar(200) not null,

PRIMARY KEY (ID)

);

create table Semester

(ID char(10) ,

Name varchar(200) not null,

Year varchar(200) not null,

PRIMARY KEY (ID)

);

create table Course

(ID char(10) ,

Name varchar(200) unique not null,

Credits int,

Description varchar(200) unique not null,

PRIMARY KEY (ID)

);

create table Course\_Program

(Course\_ID char(10) ,

Program\_ID char(10),

Start\_Date datetime not null ,

End\_Date datetime not null,

Type varchar(200),

FOREIGN KEY (Course\_ID) REFERENCES Course (ID),

FOREIGN KEY (Program\_ID) REFERENCES Program (ID),

primary key (Course\_ID, Program\_ID)

);

create table Prerequisite\_Courses

(

Course\_ID char(10) REFERENCES Course (ID),

Prerequisite\_Course\_ID char(10) REFERENCES Course (ID),

PRIMARY KEY (Course\_ID, Prerequisite\_Course\_ID)

);

create table Course\_Offering

(ID char(10) ,

Course\_ID char(10)REFERENCES Course (ID),

Semester\_ID char(10)REFERENCES Semester (ID),

Campus\_ID char(10)REFERENCES Campus (ID),

Coordinator\_ID char(10) REFERENCES Staff (ID),

Lecturer\_ID char(10) REFERENCES Staff (ID),

PRIMARY KEY (ID)

);

create table Assessment

(ID char(10) ,

Course\_Offering\_ID char(10) REFERENCES Course\_Offering (ID),

Name varchar(200) unique not null,

Percentage varchar(200) not null,

PRIMARY KEY (ID) );

create table Student

(ID char(10) ,

Name varchar(200) not null,

Address varchar(200) not null,

Phone varchar(200) not null,

PRIMARY KEY (ID) );

create table Student\_Course\_Registration

(Student\_ID char(10) REFERENCES Student (ID),

Course\_offering\_ID char(10) REFERENCES Course\_Offering (ID),

Enrollment\_Date datetime,

Final\_Mark int,

Final\_Grade char(2),

primary key (Student\_ID, Course\_offering\_ID)

);

create table Time\_Slots

(ID char(10) ,

Course\_offering\_ID char(10) REFERENCES Course\_Offering (ID),

Enrollment\_Date varchar(200),

Facility\_ID char(10) REFERENCES Facility (ID),

start\_From datetime,

until datetime,

PRIMARY KEY (ID) );

create table Student\_Enrollment

(

Student\_ID char(10) REFERENCES Student (ID),

Program\_ID char(10) REFERENCES Program (ID) ,

Semester\_ID char(10) REFERENCES Semester(ID),

Date datetime,

primary key (Student\_ID, Program\_ID, Semester\_ID)

);

create table Student\_Assessment\_Scores

(Student\_ID char(10) ,

Assessment\_ID char(10) ,

Marks varchar(200),

FOREIGN KEY (Student\_ID) REFERENCES Student (ID),

FOREIGN KEY (Assessment\_ID) REFERENCES Assessment(ID),

primary key (Student\_ID, Assessment\_ID)

);

create table Username

(Student\_ID char(10) ,

Username varchar(10) unique not null,

Password varchar(10) not null,

FOREIGN KEY (Student\_ID) REFERENCES Student (ID),

primary key (Username)

);

Queries: View

CREATE FUNCTION dbo.smarks

( @username varchar(10), @password varchar(10))

RETURNS TABLE

RETURN

select c.name, s2.name as semester, s2.year, scr.Final\_Mark, scr.Final\_Grade

from Student\_Course\_Registration as scr, Student as s, Course\_Offering as co, Semester as s2, Course as c, Username as u

where s.ID = scr.Student\_ID and co.ID = scr.Course\_Offering\_ID and co.Course\_ID = c.ID and co.Semester\_ID = s2.ID and u.ID = s.ID and u.Username = @username and u.Password = @password

create view vTranscript as

select \*;

from dbo.smarks('username','password')

**Appendix 2**

Insert Quiries

|  |
| --- |
| INSERT INTO `student` VALUES ("s000000001","Mohammad","Unizah","0554123658");  INSERT INTO `student` VALUES ("s000000002","Ali","Unizah","0554121111");  INSERT INTO `student` VALUES ("s000000003","Khalid","Buraidah","0344123611");  INSERT INTO `student` VALUES ("s000000004","Ahmad","Ras","0554155411");  INSERT INTO `student` VALUES ("s000000005","Salim","ras","0554123874");  INSERT INTO `student` VALUES ("s000000006","Murad","Unizah","0554123633");  INSERT INTO `student` VALUES ("s000000007","Tareq","Unizah","0554123555");  INSERT INTO `student` VALUES ("s000000008","Abdallah","buraidah","0554158763");  INSERT INTO `student` VALUES ("s000000009","Abdarhaman","buraidah","0554452174");  INSERT INTO `student` VALUES ("s000000010","Terky","bedaye'e","0554125874");  INSERT INTO `student` VALUES ("s000000011","Abdalaziz","bedaye'e","0554175548");  INSERT INTO `student` VALUES ("s000000012","Fahad","Unizah","0554155578");  INSERT INTO `student` VALUES ("s000000013","Salman","bedaye'e","0554155548");  INSERT INTO `student` VALUES ("s000000014","Suliman","Buraidah","0554155558");  INSERT INTO `student` VALUES ("s000000015","Lo'ay","Buraidah","05541212458");  INSERT INTO `student` VALUES ("s000000016","Yusuf","Buraidah","0554123658");  INSERT INTO `student` VALUES ("s000000017","Salim","ras","0554112388");  INSERT INTO `student` VALUES ("s000000018","Salih","Unizah","0554863258");  INSERT INTO `student` VALUES ("s000000019","Amjad","Buraidah","0554865458");  INSERT INTO `student` VALUES ("s000000020","Majid","Bukeyreyah","0554546858");  INSERT INTO `student` VALUES ("s000000021","Ibrahim","Unizah","0554128965");  INSERT INTO `student` VALUES ("s000000022","Iyas","Bukeyreyah","0554128745");  INSERT INTO `student` VALUES ("s000000023","Hamad","Bukeyreyah","0554128635");  INSERT INTO `student` VALUES ("s000000024","Khalaf","Buraidah","0554128632");  INSERT INTO `student` VALUES ("s000000025","Rami","Buraidah","0554127145");  INSERT INTO `student` VALUES ("s000000026","Zayd","Buraidah","0554125432");  INSERT INTO `student` VALUES ("s000000027","Shadi","Bukeyreyah","0554123333");  INSERT INTO `student` VALUES ("s000000028","Shaahin","Buraidah","0554123218");  INSERT INTO `student` VALUES ("s000000029","Talal","Bukeyreyah","0555151658");  INSERT INTO `student` VALUES ("s000000030","Aadel","Buraidah","0554423658"); |
| INSERT INTO `course` VALUES ("BBus000001","Accounting",4,"Accounting 011");  INSERT INTO `course` VALUES ("BSc0000001","Animal Health",3,"Animal Health 012");  INSERT INTO `course` VALUES ("BBus000002","Banking",4,"Banking 123");  INSERT INTO `course` VALUES ("BSc0000002","Biological Sciences",3,"Biological Sciences 114");  INSERT INTO `course` VALUES ("MBiosec001","Biosecurity",2,"Biosecurity 023");  INSERT INTO `course` VALUES ("MBA0000001","Business Administration",2,"Business Administration 002");  INSERT INTO `course` VALUES ("BBus000003","Business Law",4,"Business Law 014");  INSERT INTO `course` VALUES ("BSc0000003","Chemistry",5,"Chemistry 145");  INSERT INTO `course` VALUES ("BSc0000004","Computer Science",4,"Computer Science 554");  INSERT INTO `course` VALUES ("BSc0000005","Conservation and Wildlife Biology",2,"Conservation and Wildlife Biology 111");  INSERT INTO `course` VALUES ("MDS0000001","Development Studies",2,"Development Studies 214");  INSERT INTO `course` VALUES ("PhD0000001","Doctor of Philosophy",3,"Doctor of Philosophy 210");  INSERT INTO `course` VALUES ("BBus000004","Economics",4,"Economics 211");  INSERT INTO `course` VALUES ("BEHons0001","Electrical Power Engineering Honours",4,"Electrical Power Engineering Honours 447");  INSERT INTO `course` VALUES ("ME00000001","Engineering",5,"Engineering 003");  INSERT INTO `course` VALUES ("BSc0000006","Environmental Science",2,"Environmental Science 121");  INSERT INTO `course` VALUES ("BBus000005","Finance",4,"Finance 010");  INSERT INTO `course` VALUES ("MFoodSec01","Food Security",3,"Food Security 414");  INSERT INTO `course` VALUES ("BA00000001","Games Art and Design",3,"Games Art and Design 412");  INSERT INTO `course` VALUES ("BA00000002","History ",3,"History 008"); |
| INSERT INTO `staff` VALUES ("st00000001","Khalid","Buraidah","0541412385","managerial");  INSERT INTO `staff` VALUES ("st00000002","Ayham","Buraidah","0541236785","lecturer");  INSERT INTO `staff` VALUES ("st00000003","Adib","Unizah","0541556785","lecturer");  INSERT INTO `staff` VALUES ("st00000004","Adham","ras","0541236785","lecturer");  INSERT INTO `staff` VALUES ("st00000005","Salem","Unizah","0555556785","lecturer");  INSERT INTO `staff` VALUES ("st00000006","Hashim","Buraidah","0541443785","managerial");  INSERT INTO `staff` VALUES ("st00000007","Hammam","Buraidah","0544236785","managerial");  INSERT INTO `staff` VALUES ("st00000008","Nadim","Buraidah","0541236777","managerial");  INSERT INTO `staff` VALUES ("st00000009","Meshari","ras","0541236771","lecturer");  INSERT INTO `staff` VALUES ("st00000010","Met'eb","Buraidah","0541236787","lecturer");  INSERT INTO `staff` VALUES ("st00000011","nawaf","Unizah","0541236785","lecturer");  INSERT INTO `staff` VALUES ("st00000012","mohanad","Buraidah","0541446785","lecturer");  INSERT INTO `staff` VALUES ("st00000013","majid","Buraidah","0541122785","lecturer");  INSERT INTO `staff` VALUES ("st00000014","malik","bedaye'e","0541226785","managerial");  INSERT INTO `staff` VALUES ("st00000015","Ahmad","Unizah","0544136785","managerial");  INSERT INTO `staff` VALUES ("st00000016","Hadi","Buraidah","0541386785","managerial");  INSERT INTO `staff` VALUES ("st00000017","Karrim","bedaye'e","0541288785","lecturer");  INSERT INTO `staff` VALUES ("st00000018","Yaser","Buraidah","0541299785","lecturer");  INSERT INTO `staff` VALUES ("st00000019","Aaref","Unizah","0541239365","lecturer");  INSERT INTO `staff` VALUES ("st00000020","Hamad","Unizah","0541239999","managerial"); |
| INSERT INTO `college` VALUES ("c000000001","Apollo College","st00000020");  INSERT INTO `college` VALUES ("c000000002","Augusta Technical Collegee","st00000016");  INSERT INTO `college` VALUES ("c000000003","Babson College","st00000015");  INSERT INTO `college` VALUES ("c000000004","Bellevue College","st00000014");  INSERT INTO `college` VALUES ("c000000005","Broward College","st00000006");  INSERT INTO `college` VALUES ("c000000006","Collins College","st00000007"); |
| INSERT INTO `department` VALUES ("d000000001","Department of Computer Science","0541444125","st00000001","c000000001");  INSERT INTO `department` VALUES ("d000000002","Department of Information Technology","0541112125","st00000001","c000000001");  INSERT INTO `department` VALUES ("d000000003","Department of Engineering","0441232125","st00000001","c000000001");  INSERT INTO `department` VALUES ("d000000004","Department of Human Science","0541232541","st00000001","c000000001");  INSERT INTO `department` VALUES ("d000000005","Department of Business","0541231115","st00000001","c000000001");  INSERT INTO `department` VALUES ("d000000006","Department of Design","0541232222","st00000001","c000000001");  INSERT INTO `department` VALUES ("d000000007","Department of Chemical and Biological Engineering","0541233655","st00000001","c000000001");  INSERT INTO `department` VALUES ("d000000008","Department of Biology","0541654125","st00000001","c000000001");  INSERT INTO `department` VALUES ("d000000009","Department of Psychology","0541222122","st00000001","c000000001");  INSERT INTO `department` VALUES ("d000000010","Department of Computer Science","0544444125","st00000016","c000000002");  INSERT INTO `department` VALUES ("d000000011","Department of Information Technology","0341112125","st00000016","c000000002");  INSERT INTO `department` VALUES ("d000000012","Department of Engineering","0341232125","st00000014","c000000004");  INSERT INTO `department` VALUES ("d000000013","Department of Human Science","0341232541","st00000015","c000000003");  INSERT INTO `department` VALUES ("d000000014","Department of Business","0341231115","st00000006","c000000005");  INSERT INTO `department` VALUES ("d000000015","Department of Design","0341232222","st00000007","c000000006");  INSERT INTO `department` VALUES ("d000000016","Department of Chemical and Biological Engineering","0341233655","st00000014","c000000004");  INSERT INTO `department` VALUES ("d000000017","Department of Biology","0341654125","st00000015","c000000003");  INSERT INTO `department` VALUES ("d000000018","Department of Psychology","0341222122","st00000007","c000000006"); |
| INSERT INTO `staff\_department\_association` VALUES ("st00000014","d000000016","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000007","d000000018","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000015","d000000017","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000007","d000000015","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000006","d000000014","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000015","d000000013","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000014","d000000012","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000016","d000000011","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000016","d000000010","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000001","d000000009","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000001","d000000008","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000001","d000000007","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000001","d000000006","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000001","d000000005","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000001","d000000004","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000001","d000000003","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000001","d000000002","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000001","d000000001","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000002","d000000003","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000003","d000000003","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000004","d000000003","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000005","d000000001","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000009","d000000002","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000010","d000000002","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000011","d000000014","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000012","d000000014","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000013","d000000005","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000017","d000000005","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000018","d000000006","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000019","d000000007","2016/05/12","2017/02/03");  INSERT INTO `staff\_department\_association` VALUES ("st00000002","d000000011","2015/05/12","2016/05/12");  INSERT INTO `staff\_department\_association` VALUES ("st00000003","d000000011","2015/05/12","2016/05/12");  INSERT INTO `staff\_department\_association` VALUES ("st00000004","d000000016","2015/05/12","2016/05/12");  INSERT INTO `staff\_department\_association` VALUES ("st00000005","d000000014","2015/05/12","2016/05/12");  INSERT INTO `staff\_department\_association` VALUES ("st00000009","d000000009","2015/05/12","2016/05/12");  INSERT INTO `staff\_department\_association` VALUES ("st00000010","d000000009","2015/05/12","2016/05/12");  INSERT INTO `staff\_department\_association` VALUES ("st00000011","d000000008","2015/05/12","2016/05/12");  INSERT INTO `staff\_department\_association` VALUES ("st00000012","d000000005","2015/05/12","2016/05/12");  INSERT INTO `staff\_department\_association` VALUES ("st00000013","d000000015","2015/05/12","2016/05/12");  INSERT INTO `staff\_department\_association` VALUES ("st00000017","d000000013","2015/05/12","2016/05/12");  INSERT INTO `staff\_department\_association` VALUES ("st00000018","d000000013","2015/05/12","2016/05/12");  INSERT INTO `staff\_department\_association` VALUES ("st00000019","d000000013","2015/05/12","2016/05/12"); |