

# **Introduction to Database**

## **Lab Manual**



## **Database Design – MS Access**

**Session: SUMMER 2013**

**Faculty of Information Technology**

**UCP Lahore Pakistan**

## Table of Contents

Table of Contents .....	2
Objectives .....	3
SQL – DML (Data Manipulation Language) .....	<b>Error! Bookmark not defined.</b>
Lab Task 1 .....	<b>Error! Bookmark not defined.</b>
Grading .....	<b>Error! Bookmark not defined.</b>

## Objectives

- To learn concept of primary key and foreign key
- Identify the relationship between tables from given problem (in text)
- Define and design entity relationship in MS Access
- To learn DML and DDL

### Lab Task 1 – For Student

You have been hired as IT Manager in University of Central Punjab Lahore Pakistan. There is no electronic system for students, teachers, staff and administrators in UCP. All the work is done through papers and files. Your first task is to develop a database for an electronic system of UCP. Following is the description of routine task of teachers, staff, students and administrative of UCP.

**Students:** When students get admission in UCP, we store his information (e.g. NIC, name, age, phone number, address and educational background). After he gets admission, he must contact assistant registrar (administrator) for semester registration (Spring 2013 or fall 2013). Once he is registered in semester, the next step is to select the courses, being offered in that particular semester. The courses, which are offered, are pre-determined by the concerned faculty (IT, Management or Political Science etc.). Student cannot be registered in more than one semester at a time.

**Teacher:** when UCP hires teacher, it stores similar information about teacher as of student. One teacher belongs to one faculty only. If a teacher is hired in IT faculty, he will not teach any course in management faculty. Dean (administrator) is responsible to assign courses to each teacher. One teacher can teach many courses. But one course can only be taught by one teacher. Dean also allocates room to teachers to conduct their classes. There are three floors in UCP and each floor has 10 classes. Once a class has been allocated to teacher for his class (the class duration is 90 minute and classes runs from 8am till 10pm), same class cannot be allocated to any other teacher.

**Staff (administrator):** Staff can add information about teacher, students and other staff member. Staff can re-instate the student who has been withdrawn from course due to attendance or any other reason.

You are required to develop the database (back-end e.g tables, attributes and their relationship) in MS Access. You must identify proper relationship based on above problem description. If you want to make some assumption, you must document it in the solution.

## Lab Task 2 - Student

You have been hired as IT manager at Allama Iqbal International Airport (AIIA). There is no electronic system to carry out routine work at airport. Everything is maintained through papers and files. You are required to develop a database for AIIA. Following is the description of routine work at airport.

There are many flight companies, operating at airport such as Turkish airline, British airline, Etihad airline etc. Each company has different flights that fly from different origin to different destination. For example, Turkish airline fly from Lahore to Dubai daily at 8am and from Lahore to Denmark at 10am. British airline fly from Lahore to Dubai at 1pm and from Lahore to Paris at 2pm. Each flight company is responsible to hire airhostess and pilot to maintain the quality. Airhostess and pilot that belong to one flight company cannot work for another flight company. One flight company owns many jets such as Boeing 777 and Boeing 675 etc. One jet only belongs to one company.

There are 10 maintenance engineers, owned by each flight companies, to check the jet, before it takes off. The report, submitted by maintenance engineer, is very important and critical. It must be stored for later use.