COMSATS University Islamabad

# Applications of Information and Communication Technologies

## Lab No. 04

## Introduction to MS Access Database

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# PART 01:

# Introduction to MS Access DB:

## Objective:

The **purpose** of this lab is to explore how to utilize Microsoft Access for designing, updating, and administering databases. Specifically, the emphasis is on:

- Inputting data into tables
- Sorting and filtering data for queries
- Updating existing data
- Designing forms to input and present data in an intuitive manner

## Equipment:

The following equipment are used

- MS Excel
- MS Word

## Lab Task 1:

## Create database of your lab project. Create tables for each activity. Apply the following queries on the tables:

### Steps Involved in the Lab Task:

**Step 1:**

**Define tables** to store data related to various activities.

- Go to the "Create" tab and choose "Table Design."
- Define fields (columns) and their respective data types. For example:
  - Student-ID (AutoNumber, Primary Key)
  - Student-Name (Short Text)
  - Course (Short Text)
  - Marks (Number)
- Save the table with a suitable name, such as "Student Records."

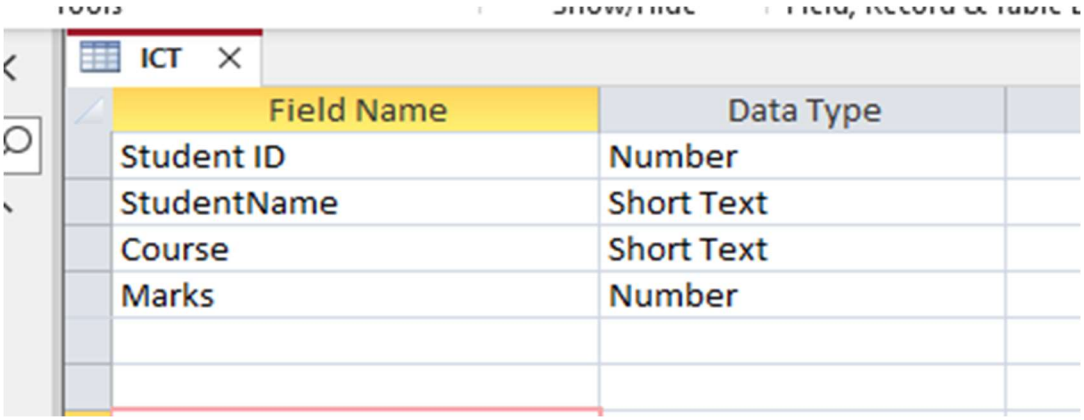


*Figure 1 This illustrates adding fields and their respective data types.*

## **Step 2:** Insert Data into the Tables

- **Task:** Populate the tables with records.
- Open the desired table by switching to "Datasheet View."
- Manually input the data into the table by entering values into the rows.
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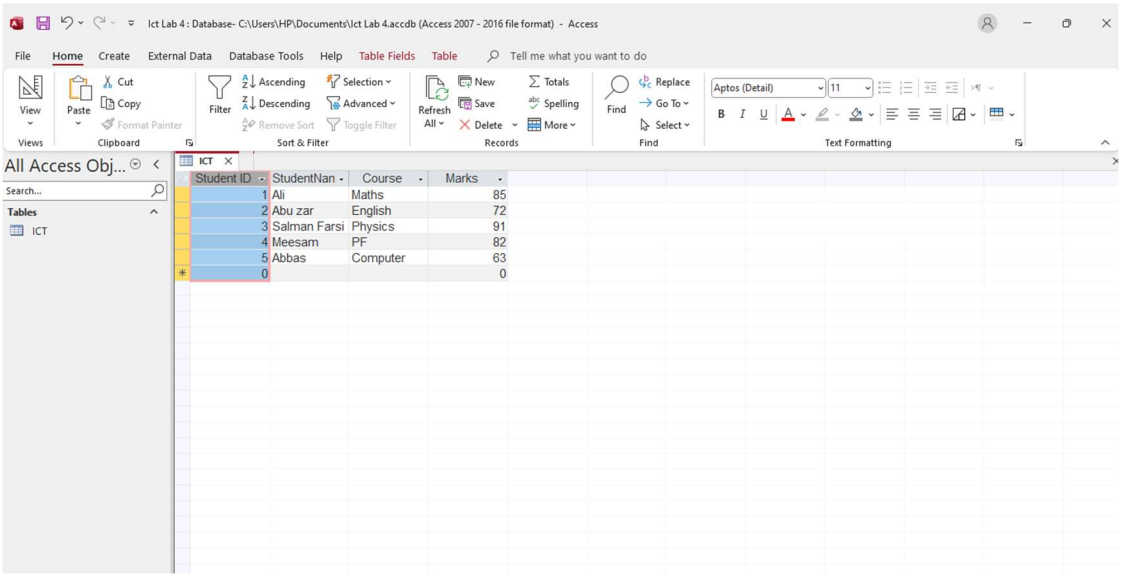



*Figure 2 Here we input sample student records.*

## **Step 3:** Retrieve Data from the Tables

- **Task:** Apply filters to extract specific information from the tables.
- In the "Datasheet View," choose the column you wish to filter.
- Right-click the field and select "Filter by Selection" or "Filter by Form" to display the desired records.

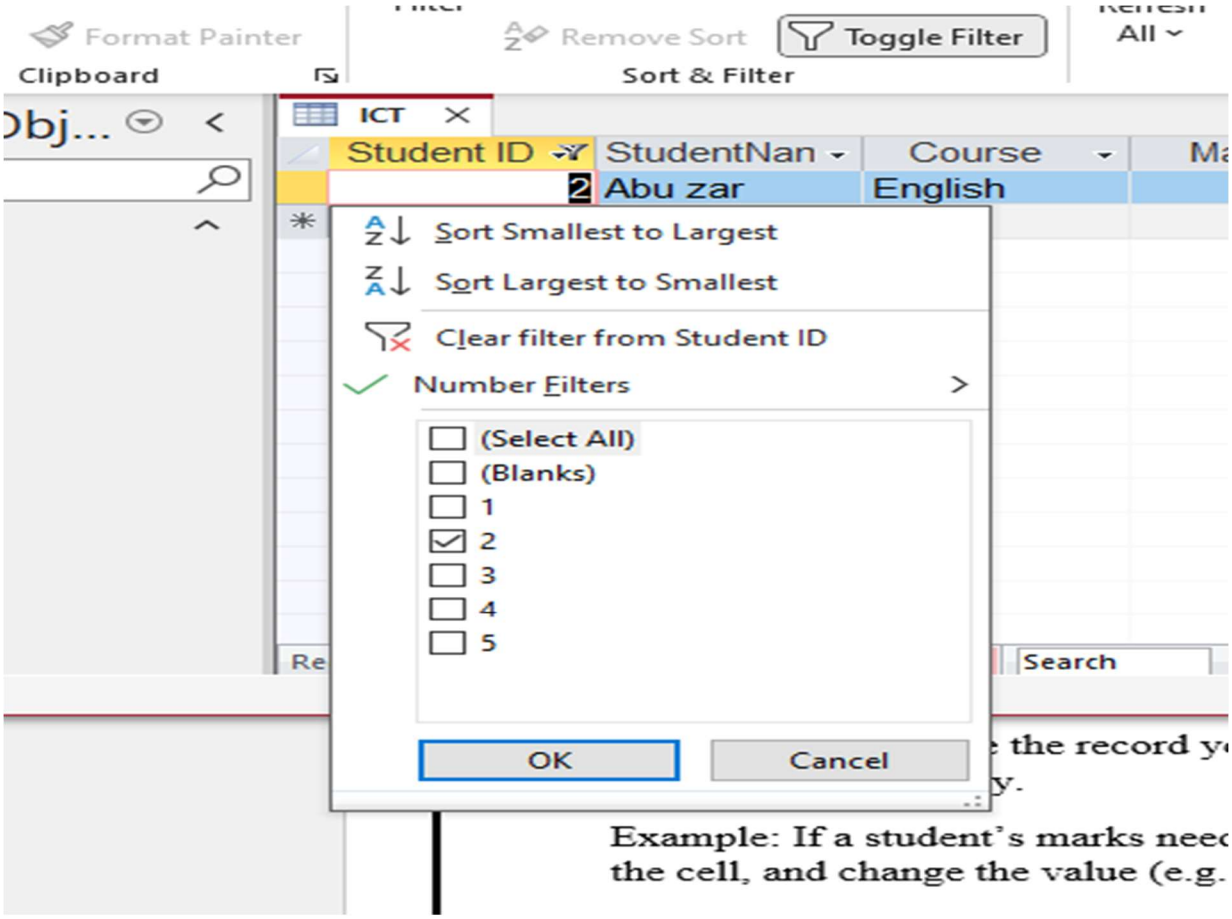
- Example: To filter students who scored above 80 marks, select the Marks column and apply the filter.
  Use the sorting and filtering options in the ribbon to further refine the displayed data.
- 


*Figure Demonstrating data filtering and data retrieval using queries.*

## **Step 4:** Update Data in the Tables

- **Task:** Edit existing data in the tables.
- Open the relevant table in "Datasheet View."
- Locate the record you wish to modify and directly edit the data in the corresponding field.
- Example: To update a student's marks, navigate to the Marks column, click on the cell, and change the value (e.g., from 85 to 90).
  The changes are saved automatically in MS Access.
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## **Step 5**: Create Forms for Each Activity

- **Task:** Design forms to facilitate easier data entry and management.

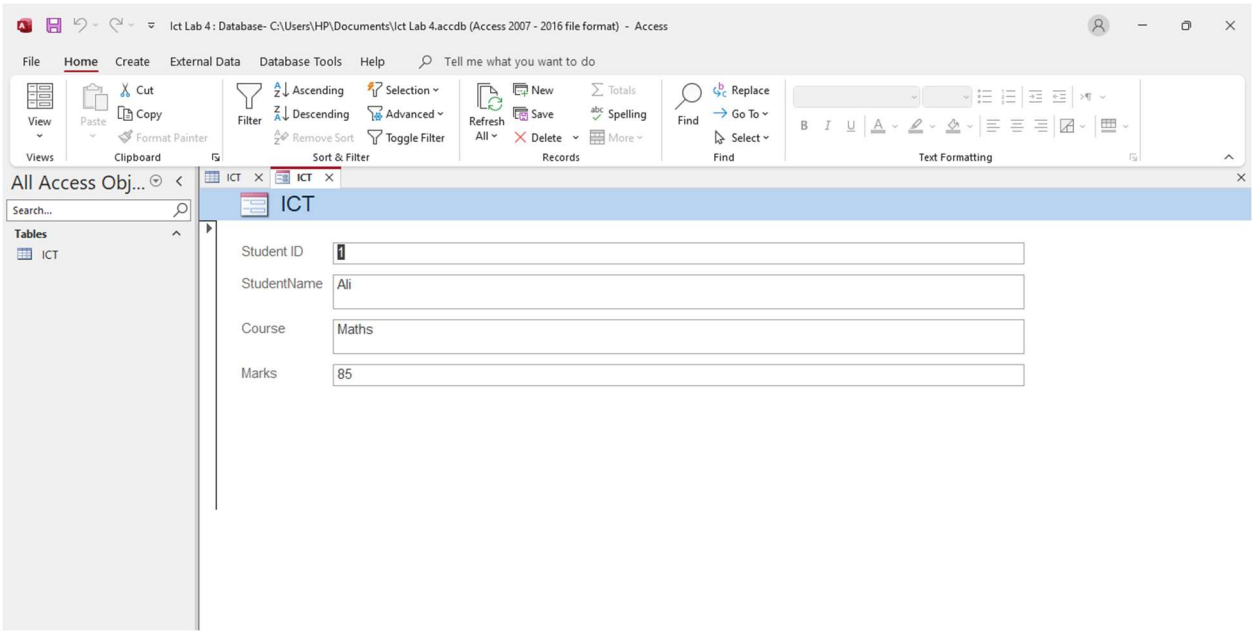
- Go to the "Create" tab and select "Form" from the toolbar.
- Choose the table (e.g., "Student Records") for which you want to generate the form.
- 


*Figure 3 Demonstrating the form generated from the entered data.*

## Conclusion:

In this lab, we successfully created and managed a database using Microsoft Access. By defining tables, entering data, retrieving filtered records, and modifying existing entries, we gained a foundational understanding of database management.