

Database Objects

- I. **Query.** A query is a database object created by placing filters and selecting multiple criteria (comparison operators) to extract information from one or more tables. The resulting data becomes an object that can be saved, recalled, and used to perform other operations.
 - A. **Advantages of a Query**
 1. A query can be saved and used to perform other operations
 2. One table can be associated with multiple queries
 3. A query can perform specialized operations, such as performing calculations on field values, and place the results in a new column or datasheet
 - B. **Difference Between a Query and a Filter**
 1. A filter is a one-time deal. It allows application of a set of selection criteria and/or sorting instructions to the records in a table. It is a quick temporary tool that is created for one-time use in the context of a particular table.
 2. A query is reusable. It allows selection criteria and/or sorting instructions to be saved and reused.
 - C. **Comparison Operators used in Queries**
 1. Less than or equal to (<=)
 2. Greater than or equal to (>=)
 3. Not equal to (<>)
 4. Less than (<)
 5. Greater than (>)
 6. Equal to (=)
 - D. **Conditional Operators**
 1. **And** – reduces the number of records because both conditions must be met.
 2. **Or** – increases the number of records because one or the other condition must be met.
- II. **Form.** A form is a database object that is used to create a user-friendly format for data entry and retrieval. Forms may include drop-down menus, instructions, navigational controls, and graphics.
 - A. **Advantages of Forms**
 1. Expedite the search and data entry processes
 2. Easy to read and understand

3. Allow information to be censored

B. **Common Elements of Forms**

1. **Graphic elements**, such as lines, images, and shapes are stored in the form's design.
2. **Data** displayed on forms is derived from the fields in the underlying table or query or may be added by the user.
3. **Calculations** are performed by properties that are set by a user within the form's design.
 - a. Formulas similar to those written for spreadsheets can be embedded into the field of a form
 - b. Calculations to total the price for a purchase order by multiplying the quantity ordered by the price of a product, for example, can be performed in a form.
4. **Controls** allow the data to be manipulated.
 - a. Fields can be formatted so that they are hidden from view or so that users are prevented from editing.
 - b. Forms can be formatted to allow or prevent scrolling or prevent a user from using a scroll bar.
5. **Descriptive text** can be added to a form for the purpose of identifying fields and forms or adding captions or prompts.
6. **Subforms** are forms within and related to a main form through a common field.
 - a. For example, a grocery store form contains the customer name and contact information on the main form and is linked by the customer's ID number to a subform.
 - b. The subform contains the purchase orders placed by the customer.

III. Report. A report object is used to organize, summarize, and print some or all of the data from one or more database tables or queries. It is used to present data in an attractive format with user selected fonts, colors, shading, borders, graphics, and other enhancements. It can be used to communicate yearly sales reports, catalog inventory, prepare labels, or produce envelopes and receipts.

A. **Advantages of Reports**

1. Reports can group data from multiple tables, used the data in calculations, and add headings and other format enhancements to clarify database information.
2. Reports can be saved and updated.
3. Reports can be printed in landscape or portrait orientation.

B. Common Elements of Reports

1. **Lines and borders** used for decoration
2. **Controls** – text boxes for displaying numbers, names, or labels.
3. **Labels** – used to display descriptive text that identifies a text box.
4. **Text boxes** – used to display data and may contain expressions for data calculation.
5. **Calculated field/column** – created when a formula is used.
6. **Report header** – appears once at the beginning of a report and usually contains items such as the company name, address, and logo.
7. **Page header** – appears at the top of every page and usually contains field names.
8. **Detail section** – contains the report details or content information
9. **Report footer** – appears once at the end of a report.
10. **Page footer** – appears on every page and usually contains page numbers.