Definitions and Concepts for CAIE Computer Science IGCSE

Topic 9: Databases

Database: A structured collection of data that can be easily stored, searched, and updated.

Table: A collection of related data entries. This data is held in rows and columns, like a spreadsheet.

Record: A single row in a database table, representing a complete set of related data about a single item.

Field: A single column in a database table, representing a specific field type or characteristic of the data within each record.

Validation: The process of ensuring data within fields and records adheres to predefined rules to maintain data integrity.

Text / Alphanumeric: Stores letters, numbers, and symbols, but not used for calculations.

Character: Stores a single letter, digit, or symbol.

Boolean: Stores one of two values only: TRUE/FALSE, which can be used to mean Yes/No.

Integer: Whole numbers only (positive or negative), no decimal part.

Real: Numbers that may include a decimal/fractional part.

Date/Time: Stores calendar dates and/or times in a standard format.

Primary Key: A field (or a combination of fields) in a database table that can be used to uniquely identify each record in that table. Its values must be unique and not null.

SELECT (SQL): An SQL command used to retrieve data from one or more tables in a database.

FROM (SQL): An SQL clause used with the SELECT statement to specify the table(s) from which the data is to be retrieved.

WHERE (SQL): An SQL clause used to specify a condition for filtering the records returned by a query, retrieving only those that meet the condition.

ORDER BY...ASC | DESC (SQL) : An SQL clause used to sort the result set of a query in ascending (ASC) or descending (DESC) order based on one or more columns (fields).

SUM (SQL): A SQL command to add up all the values in a numeric field.

COUNT (SQL): A SQL command to count the number of rows that meet a condition (or all rows if no condition is given).

AND (SQL): A Boolean operator commonly used as part of WHERE clauses to specify that multiple conditions need to be met.

OR (SQL): A Boolean operator commonly used as part of WHERE clauses to specify that one or more conditions (out of multiple) must be met.