Topic 8: Databases

EAL keyword sheet - Cambridge International AS & A Level Computer Science 9618. Write the word in your own language in the last column.

Keyword	Meaning	Example sentence	In my language
database	An organised store of data.	*The school keeps student data in a database.*	
flat-file database	A database with a single table.	*A flat-file database can repeat data.*	
relational database	A database with several related tables.	*Relational databases reduce data redundancy.*	
table	A set of records made of fields.	*The Customer table has 100 records.*	
entity	Something about which data is stored, e.g. a student.	*Student is an entity.*	
attribute / field	A property of an entity: a column in a table.	*Surname is an attribute.*	
record / tuple	A row in a table: all the data about one entity.	*Each record holds one customer.*	
primary key	A field that uniquely identifies each record.	*CustomerID is the primary key.*	
candidate key	A field that could be chosen as the primary key.	*Email may be a candidate key.*	
secondary key	A field used for searching which is not the primary key.	*A secondary key can speed up searches.*	
foreign key	A field in one table that is the primary key in another table.	*The foreign key links Orders to Customers.*	
relationship	A link between two tables: one-to-one, one-to-many, many-to-many.	*One customer can have many orders.*	
referential integrity	Making sure a foreign key always matches a primary key.	*Referential integrity stops orphan records.*	
normalisation	Organising data to remove redundancy. Includes 1NF, 2NF and 3NF.	*Normalisation splits large tables.*	
data redundancy	Unnecessary repeating of data.	*Redundancy wastes storage.*	
data consistency	Data is the same everywhere it is stored.	*Redundancy can cause inconsistency.*	

Keyword	Meaning	Example sentence	In my language
ER diagram	Entity-relationship diagram: shows entities and the links between them.	*I drew an ER diagram for the library.*	
DBMS	Database management system: software that manages databases.	*MySQL is a DBMS.*	
data dictionary	A description of the data: field names, data types and sizes.	*The data dictionary lists all fields.*	
logical schema	The structure of the database, independent of the DBMS.	*The logical schema shows tables and relationships.*	
access rights	Permissions that decide what each user can do.	*Teachers have write access.*	
backup and recovery	Copying data and restoring it after a failure.	*A DBMS offers recovery after a crash.*	
SQL	Structured query language: used to define and query databases.	*SQL is used to retrieve data.*	
DDL	Data definition language: commands that create or change structures, e.g. CREATE TABLE.	*DDL creates the table.*	
DML	Data manipulation language: commands that query or change data, e.g. SELECT, INSERT.	*DML updates the records.*	
SELECT ... FROM ... WHERE	SQL command to choose fields from a table with a condition.	*SELECT Name FROM Students WHERE Age = 17*	
INSERT / UPDATE / DELETE	SQL commands to add, change and remove records.	*UPDATE Students SET Age = 18*	
JOIN	Combines data from two tables.	*INNER JOIN links Orders and Customers.*	
GROUP BY / ORDER BY	SQL commands to group rows / sort the results.	*ORDER BY Score DESC*	
aggregate function	A function that calculates one value from many: SUM, COUNT, AVG, MIN, MAX.	*COUNT(*) gives the number of records.*	