

# 5.4 Data and information – Flat-file databases – Knowledge Organiser

Year 7 Topic number Hyperlink to planning

**Key prior learning is highlighted in green, but must be revisited and reinforced during this teaching sequence.**

## Overview

### Flat-File Databases



-Data is raw numbers and figures. Information is what we can understand from analysing data.

here are lots of different ways that we can collect, log and interpret data, including by using databases.



-Databases organise data so that it can be easily added to, amended, stored and accessed. Computer databases can allow large amounts of data to be sorted, filtered and edited more easily.

## Using a Computer Database

-Computer databases often contain large amounts of data. We can find the data that we need by using the 'search', 'filter' and 'sort' functions. Search functions allow us to type in the exact word/s that we are looking for. This can be useful if we are looking for a particular record.



-If we are looking for records that, we can filter out data by different fields. For example, we filter in the 'age' field for all students aged 23, then the database will then present only the students aged 23.

-We can also sort records by the data in particular fields. e.g. we may sort by the children's ages, from youngest to

Student ID	Last Name	Initial	Age
ST348-245	White	R.	21
ST348-246	Wilson	P.	19
ST348-247	Thompson	A.	18
ST348-248	Holt	R.	23
ST348-249	Armstrong	J.	37
ST348-250	Graham	S.	20
ST348-251	McFadden	H.	26
ST348-252	Jones	S.	22
ST348-253	Russell	W.	20
ST348-254	Smith	L.	19

## Types of Databases

Database: A database is a collection of organised data that is easily stored and used.

Databases often structure data in logical ways (e.g. in columns, rows and tables) so that it can be accessed by those who need it easily. Databases are made up of individual records, which contain information in different fields (categories).

-Paper Databases: Paper databases require the creator to manually write in individual records, and to sort the records in an appropriate order. Paper records can still be useful in small databases, but most large databases are now stored on computers.

-Computer Databases: Many computer programs allow us to create databases, e.g. *Microsoft Excel*.

Computer databases have become more popular than paper databases, as data can be easily and quickly added or removed, sorted, filtered, edited, or viewed at any time.

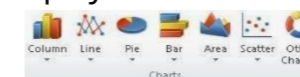
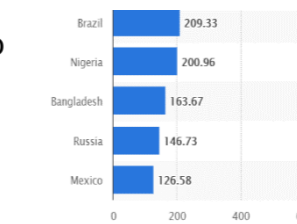
Student ID	Last Name	Initial	Age	Program
ST348-245	White	R.	21	Drafting
ST348-246	Wilson	P.	19	Science
ST348-247	Thompson	A.	18	Business
ST348-248	James	L.	23	Nursing
ST348-249	Peterson	M.	37	Science
ST348-250	Graham	S.	20	Arts
ST348-251	Smith	F.	26	Business
ST348-252	Nash	S.	22	Arts
ST348-253	Russell	W.	19	Nursing

## Presenting Data

-Data can be shown visually, by using graphs and charts. This allows users to quickly and easily find answers to the questions that they need. It helps the user to

easily see trends and to sequence information.

-Charts and graphs can be created by selecting the charts icon and selecting which fields to display in the x-axis and y-axis.



## Using Databases

-Remember that databases are used in order to quickly and easily find information. Databases are only able to do this if the data is organised logically into clear records and fields.

-Databases are used in most institutions across the world. Think about: medical records, school student information, flight logs and business accounts.

Payee	Amount	Tax	Subtotal	Costs No Deductible
ECON01 Linda Gordon	\$656.00	\$96.00	\$752.00	\$752.00
ECON02 Charles Huxley	\$652.20	\$83.20	\$735.40	\$735.40
ECON03 Brian Ferry	\$722.00	\$72.00	\$794.00	\$65.00
ECON04 Sarah Bernard	\$324.80	\$44.80	\$369.60	\$50.00
ECON05 Mary Johnson	\$174.00	\$24.00	\$198.00	\$20.00

Database Record Field **Sort** **Order** **Group** Value Criteria **Graph** **Chart** Axis Compare Filter