Data Management

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This lesson has been created by effini in partnership with The Data Lab.

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1. Data Management & Governance

1) Fill in the missing gap.

> Data management is the activities involved in treating data as a **valuable asset/resource** .

2) Complete the sentence starting with "Data governanc" using the following phrases:

"directly managing the data"   "providing guidance to make sure data is managed

Data governance is about **providing guidance to make sure data is managed well**
and data management is about **directly managing the data**

3) Name three benefits to an organisation of managing data.

Any 3 of:

1. it helps organisations make better decisions
2. it improves data security
3. it improves productivity and effiency

4) Are the following statements true or false?

Statement	True/False?
1. The first stage in a data lifecycle is where data is stored.	FALSE
2. Data quality is important throughout the whole data lifecycle.	TRUE
3. 'Data governance' is another term for 'data privacy'.	FALSE
4. Data governance is shown at the centre of the DAMA Wheel because it is the foundation of the other areas.	TRUE

1. The first stage in a data lifecycle is 'data creation' (when data is first created or collected).
3. *Data privacy* is concerned with the rights of individuals to have control over how their personal data is collected and used. *Data governance* is concerned with providing guidance to all of the other areas of data management to ensure data is managed well. This includes providing guidance on *data security* . One of the goals of data security is to ensure that all data privacy regulations and policies are complied with.

2. Data Security, Quality and Document and Content Management

1) Are the following examples of **Data Security**, **Data Quality** or **Document and Content Management**?

1. In the GP's practice, the administrators use a checklist to ensure that patients data being entered into the system is accurate, complete and up-to-date.

Data Quality

2. After a number of printed documents were lost, Jessica suggests to her line manager that the company needed a way to avoid this happening again in the future.

Document and Content Management

3. Minesh insists that his employees use encryption and multi-factor authentication on their computers to reduce the chances of hackers accessing the company's IT systems.

Data Security

Section 2.2 (apply)

2) According to a report*, 84% of CEOs (people leading their organisations) globally are concerned about the quality of the data they're basing their decisions on.

Here are some examples of decisions a CEO may make.

1. decide to spend money on something that isn't profitable (or is very risky).
2. decide to expand the business into a new area/country
3. decide not to expand the business into a new area/country
4. decide to develop a new product or service
5. decide not to develop a new product or service
6. decide to employ/dismiss staff

a) If the CEO has based their decision on low-quality data, which of the above decisions may lose

> *** decide to spend money on something that isn't profitable**
> *** decide to expand the business into a new area/country**
> *** decide to develop a new product or service**
> *** decide to employ/dismiss staff**

b) Which of the decisions above may miss the opportunity to make money?

> *** decide not to expand the business into a new area/country**
> *** decide not to develop a new product or service**

2. Data Security, Quality and Document and Content Management

3) Think of a course/subject you have taken, which has an exam at the end to test your understanding.

Imagine that the only learning resources (e.g. printed handouts) for it are issued by your teacher, but that these resources had not been updated for years and are out of date. You only discover this when you sit down to take the exam.

It's at this point you realise that what you have learned from the resources does not match what you are being testing on in the exam.

What might the consequences be of this failure of document management?

It is likely that you won't do as well in the exam compared to if you have been issued the correct, up-to-date learning resources. This may have an affect on your grades and consequently your chances of getting into your choice of course at college or university.

3. Data Architecture, Modelling and Design

1) Data architecture is the | **plan** | for the data management resources that an organisation should build to meet its needs.

2) A data model is useful for | **communicating** | what data an organisation has, how it fits together and how it relates to things in the real world.

3) What does a data architect do?

> **A data architecture plans/designs the data architecture for a business.**

4) In the example given in the slides for the small e-commerce company, what could the consequence(s) of the reporting database being missed from the data architecture be?

> **If the reporting database was missing, the business wouldn't be able to produce reports on sales and orders. This would prevent the business from having a good understanding of what's happening with sales and orders from its website.**

5)

If you were to create a data model for a school, what data should it include e.g., 'pupil' and 'class'?

> **Examples include: department, teacher, course, subject, or lesson. Any data that relates to entities in a school are acceptable.**

6) For the data that you have listed in **Question 5**, select two items (e.g. 'pupil' and 'class').

For each of these items, write some statements about the relationship the item has to other items in your data model.

For example:

1. a class can have multiple pupils
2. a class can have one or more teachers
3. a class can have only one school

3. Data Architecture, Modelling and Design

Examples:

pupil:

1. a pupil can have only one school
2. a pupil can have many teachers
3. a pupil can have many classes

teacher:

1. a teacher can have one or more schools i.e. a teacher may teach in a single school; and a teacher may teach in multiple schools (e.g. a supply teacher) - this assumes the definition of a teacher is someone who is actively teaching in at least one school.
2. a teacher can have one or more classes
3. a teacher can have one headteacher (assuming a school has a single headteacher)

4. Data Storage and Operations, Integration and Interoperability

1) Which of the following are *not* a type of data storage?

database/website/data warehouse/email/data model

> **website, email and data model**

2) Are the following statements true or false?

Statement	True/False?
1. 'Content' is the data that is stored in a document.	TRUE
2.Documents contain structured data.	FALSE
3.Data stored in databases needs to be managed but data stored in documents doesn't.	FALSE
4. Most organisations have lots of documents, including emails and printed documents.	TRUE

3) Adam spends £5,000 on a new database and a separate reporting software package for the his small holiday business. He is planning to use the reporting software to create reports using data stored in the database. He wants to use the data to help him make better business decisions.

a) Which of the following are important considerations for Adam when choosing a new database? Put an ' **X**' beside those that he should consider.

cost.	X
customer support for using it.	X
over 1000 users can access it at the same time.	
ease-of-use.	X
colour.	
it can hold records for over 5,000,000 customers.	
it can integrate with other software systems.	X

Notes:

1. There's no need for the database to be able to be accessed by 1000 users at a time as Adam only has a small business.

2. Colour isn't relevant.

3. There's no need for the database to be able to hold millions of customer records as Adam only has a small business.

4. Data Storage and Operations, Integration and Interoperability

b) Which of the following are important considerations for Adam when choosing a new reporting software package? Put an '**X**' beside those that he should consider.

rate the kind of reports and charts Adam needs it to.	**X**
rate with other software systems such as databases.	**X**
ease-of-use.	**X**
it can print out over 1000 charts per second.	
cost.	**X**

Notes:

1. There's no need for the software to be able to print lots of reports concurrently as Adam only has a small business.

c) Unfortunately Adam has not checked that the reporting software he has bought can integrate with the database. It can't - the reporting software and database are unable to communicate with one another.

What are the possible consequences of this for Adam's business?"

Adam will not be able to use the reporting software to directly access the database. He may be able work around this (much like the theatre example given in the slides) but this is inefficient. If he is not able to access the data stored in the database from the reporting software, he may not be able to use the data to make better decisions. This may have an impact on him being able to grow the business or make it more profitable.