

Database Software - Theory

Unit R012 - Understanding tools, techniques, methods and processes for technological solutions

Introduction

- **Databases** are used to **store** and **process data** and text.
- They allow **entry**, storage, **editing** and processing of data.
- A database is typically used by a **business** to store data such as:
 - **Customer details**
 - **Stock details**

Introduction

- A **database** is made up of **table(s)**
- A **table** is made up of **records**
- A **record** is a **collection** of **fields**
- A **field** holds **one** item of **data**

Introduction

- A database uses **form(s)** as a way to **present** data.
- These allow data to be **presented** in an **easier** to **understand format** to the user.
- They may also include **buttons** to **move** between **records**, **add/delete records**.

Introduction

- As a database stores a large amount of information, there may be times when the data needs to be **queried**.
- This means to **search** the **data**.
- The results of the data can be presented in a **report**.
- This too allows a table or the results of a query data to be **outputted** to the user in an **easier** to **understand format**.

Introduction

- A database allows **validation** to be set on different fields.
- This makes sure that data is **sensible** and **reasonable** and **reduces** the **risk** of the **wrong format** of data being entered by the user.
- Types of validation check are:
 - **Presence Check**
 - **Format Check**
 - **Length Check**
 - **Range Check**
 - **Input Masks**

Advantages of Databases

Advantages of Databases
Large amounts of data can be stored
Data can be added or edited when needed.
Data can be filtered or queried to find relevant results.
Data can be sorted by specific fields.
Passwords can be set to maintain database security
Can be integrated with other software (Word Processing software) to send personalised letters.
Validation can be set on fields to ensure data is entered in the correct format and to minimise input errors.
Reports can be generated to show the results of queries
Can be saved/backed up to prevent damage/data loss
Can be shared electronically.

Disadvantages of Databases

Disadvantages of Databases

Knowledge and skill with databases are needed to set one up.

If more than one table is used then relationships need to be created.

Security procedures need to be implemented if sensitive information is held.

Errors in data entry, validation or queries can affect the results

Examples of Database Use

Database Examples
Holding personal data. E.g. About customers
Sending personalised letters using mail merges
Suggesting products based upon what has been bought in the past.
Stock levels in a shop
Keeping track of all models by car manufactures in case of any recalls/keeping track of service history.
Keeping income tax records in the Government.