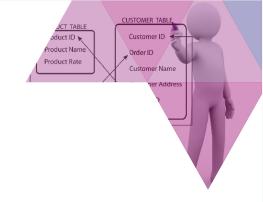# Unit 3
DATA WORLD

In this unit you will

▶ learn and practice vocabulary for database development and use

▶ practice creating a simple paper based database

Part 1: What is a Database?

'A **database** is a collection of data or information which is held together in an organised or logical way.'

1a Class Discussion

▶ What kind of databases do you know?
▶ Have you ever created a database? If yes, what for?
▶ Who uses databases?
▶ What do they use them for?

1b Check the meaning

Check the meanings of the **highlighted** words in the text.

Databases

Address and telephone books, and Yellow Pages are examples of paper based databases. Your parents' or grandparents' **generation** might still keep these paper based databases. In address books, addresses were stored in logical order of 'name', and in yellow pages, telephone numbers were ordered in **logical order** of 'profession' e.g. gardener, builder, plumber.

These days, when we use the term 'database' we generally think of a computerised database. There are many examples of computerised databases, some of which you might be using at home or school. **Search engines** such as **Google** need a **vast** computerised database which they search using your entered **keywords** in order to find the right websites for you.

Tables, records and fields

Databases **store** data or information in tables, just like the one below with the names of cartoon characters. Each table contains a lot of records. A r... person or one thing. In the table below, all of the information about each cartoon character is stored in a '**row**' or 'record'. The table allows you to see all of the records stored in the database. Tables can store many records, from a few dozen for a small database up to millions for a large company database. Each piece of information in a record is called a '**field**'. A 'field' is one piece of data or information about a person or thing.

First Name	Last Name	Address	City	Age
Mickey	Mouse	123 Fantasy Way	Anaheim	73
Bat	Man	321 Cavern Ave	Gotham	54
Wonder	Woman	987 Truth Way	Paradise	39
Donald	Duck	555 Quack Street	Mallard	65
Bugs	Bunny	567 Carrot Street	Rascal	58
Wiley	Coyote	999 Acme Way	Canyon	61
Cat	Woman	234 Purrfect Street	Hairball	32
Tweety	Bird	543	Itotltaw	28

Adapted from <http://www.teach-ict.com/ks3/year7/data_handling/miniweb/pg5.htm>

1c Answer the questions

Answer the following questions according to the text and the table:

1. What paper-based databases are mentioned in the text?

2. How do you find information using Google?

3. Where is data stored in a database?

4. How many records are there in the above table?

5. How many records can you have in a table?

6. What are the different fields in the above table?

Part 2: What are databases for?

2a Class Discussion

▶ Why do schools keep databases?
▶ What records and fields do you think are stored on the database at your school?
▶ Look at the image and think of reasons why a company should have a customer database.

2b Fill in the blanks

Use the following words to fill in the blanks in the text. Use your glossary to check words you don't know.

applications   searched   **information**   security   **records**
multi-access   **sorted**   access   **data**

Why use a database?

▶ Databases can store very large numbers of .... (1) (they take up little space).
▶ It is very quick and easy to find .... (2)
▶ It is easy to add new .... (3) and to edit or delete old data.
▶ Data can be .... (4) easily, e.g 'find all Ford cars'.
▶ Data can be .... (5) easily, for example into 'date first started school' order.
▶ Data can be imported into other .... (6), for example a mail-merge letter to a customer saying that an MOT test is due.
▶ More than one person can .... (7) the same database at the same time -................... (8).
▶ .... (9) may be better than in paper files.

2c Check the meaning

*Check the meanings of the **highlighted** words in your glossary.*

People and Databases

When a database holds details about people, it's likely to **include** their first name, surname and their date of birth. In addition to this, **special** information is stored depending on the database's **intended** use.

a. The police have details of all known **criminals** in a database
b. Schools use a database to store details about their students
c. A hospital will store details of all its **patients** in a database
d. The **Government** uses a database to store records of the people living in the country
e. A database is used to **keep track** of all the drivers

2d Match

Match the following information with the different types of databases mentioned in the text. One example is given:

1. People's ID (identity) card numbers. **- d**
2. Driving licence numbers and names.
3. When a person first went to the hospital.
4. Names of caught thieves.
5. Number of days a student did not go to school.
6. Names of all people with speeding tickets.
7. What time a baby is born.
8. People's social security numbers.

2e Group Work

Work as a group and draw a table to create a database for your class. Decide on what fields to have, and then enter the data for your group in the table.

2f Match

Match the database images with the titles:
a) product orders database,
b) music album database,
c) product information database,
d) bookshop products database,
e) customer contact database

2g Analyze

What is the purpose of each of these databases?
Database 1:

Database 2:

Database 3:

Database 4:

Database 5:

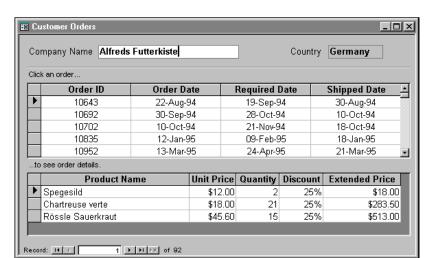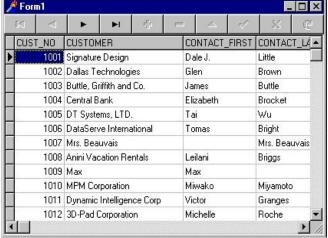| BookList : Table			
ISBN	**Author**	**Title**	**Cost**
1001	James Herbert	The Fog	£4.30
1002	James Herbert	The Rats	£2.59
6666	J D Salinger	The Catcher in the Rye	£3.10
6767	J K Rowling	The Harry Potter Books	£9.50
7777	A A Milne	Winnie the Poo	£2.60
8888	Rudyard Kipling	The Jungle Books	£3.40
9999	Jonathan Swift	Gullliver's Travels	£2.30
			£0.00

Record: 23 of 23

Database 1

Database 2

Database 3

Database 4

Database 5

Part 3 Data Types
3a Class Discussion

▶ What different types of data (information) can you think of?
▶ How is different type of data entered into a database?
▶ What kind of a database does the image show?

DATABASE PLANNING
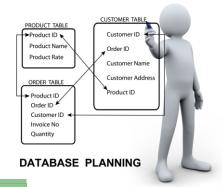
3b Match

*Match the **highlighted** words in the text with their Turkish equivalents below:*

para birimi	**seçenek**	**veri türü**	**sağlamak**
izin vermek	**tam sayı**	**otomatik olarak**	**kısıtlamak**
veritabanı kurmak	**varolmak**	**ondalık sayı**	**orta**

Data Types

When you are about to **set up a database**, you need to think about the '**data type**' which you will use for each field. The most common data types are:

Data Type	Examples
Alphanumeric or Text This **allow**s you to type in text, numbers and symbols	**First name: James** **Surname: Smith** **Address: 73, High Street** **Postcode: CV34 5TR** **Car Registration: EP06 5TV** **Telephone Number: 01926 123456***
Number This allows a **whole number** or a **decimal number**. Only numbers can be entered, no letters or symbols	15 21.35
Currency This **automatically** formats the data to have a £ or $ or Euro symbol in front of the data and also **ensure**s there are two decimal places.	£5.75 $54.99
Date/Time This **restricts** data entry to 1-31 for day and 1-12 for month. It checks that a date can actually **exist**, for example, it would not **allow** 31/02/06 to be entered.It formats the data into long, **medium** or short date/time	Long Date: 20 February 2006 Medium Date: 20-Feb-06 Short Date: 20/02/06 Long Time: 18:21:35 Medium Time: 06:21 PM Short Time: 18:21
Autonumber This datatype will **automatically** increase by 1 as records are added to the database	Record 1: 1 Record 2: 2 Record 3: 3
Logical, Boolean, Yes/No This datatype is often referred to as different things, you may hear it called 'logical', or 'boolean' or 'yes/no'.All it means is that the data is restricted to one of only two **choice**s	Yes/No Male/Female Hot/Cold On/Off

3c Check your comprehension

Answer the following questions according to the text:

1. Why is a telephone number NOT a number data type?

2. If you have autonumber as data type, what happens when you enter a new record?

3. Why can you NOT enter 31/02/06 as a date?

4. If you have the two options of 'teacher' and 'student' to enter into your school database what data type would you use?

5. What kind of data is the price of a product?

6. What kind of data type is '115.75'?

7. What kind of date is '10/07/14'?

8. If a bank has a database for customers - which include the customers' names and surnames, their gender (cinsiyet), date of birth, adress and telephone numbers - what data types does the database have for these fields?

Part 4 Revision
4a Crossword puzzle

Complete the puzzle with the English words for the following:

Across

1. **kayıt**
3. **tablo**
7. **hasta**
8. **erişim**
11. **devlet**
12. **güvenlik**
13. **sağlamak**
14. **alan**

Down

2. **suçlu**
4. **uygulama**
5. **anahtar kelime**
6. **izin vermek**
9. **içermek**
10. **veri**
12. **özel**

4b Use the following words to fill in the gaps

store   search

fields   automatically

record   access

logical order   sort

applications

1. It is very easy to .... for information in a database.
2. More than one person can .... a database at the same time.
3. There can be millions of .... in a big company database.
4. Information from a database can be used with other ....
5. Name, address, telephone number are different .... in a database.
6. Police can .... DNA information on their database.
7. Employee information can be organised in .... of name.
8. You can easily .... student information by grade, e.g. Grade 12.
9. Autonumber .... increases when a new record is added.

4c Name the data types

Name the data types for each of the fields of the following record from a databa

first name	surname	male/female	date of birth	telephone number	monthly salary	married/single	children
David	Wyatt	Male	02/05/1975	044 763 5489	€ 2,000.00	Married	2

4d Answer the questions

1. What kind of a number is 12?
2. What kind of a number is 12.55?
3. How many decimal places are there in 12.55?
4. What is the long date for 12/04/08?
5. What is the medium time for 15:55:25?

4e Translate

1. **kağıt üstünde tutulan veritabanı**
2. **bilgisayar sisteminde tutulan veritabanı**
3. **bir veritabanına çoklu erişim**
4. **bir veritabanının amaçlanan kullanımı**
5. **bir okul ögrenci devamsızlığını (absenteeism) bir veritabanı ile takip edebilir.**