SPREADSHEETS AND DATABASES

SPEAKING | INTRODUCTION

1 Work in small groups or in pairs and discuss the following questions:

1 What is a spreadsheet? And what is a database?

....

....

2 What can spreadsheets and databases be used for? Give a few examples.

....

....

3 What is the main difference between a spreadsheet and a database? (think about how data is stored, structured, manipulated, retrieved, etc.)?

....

....

4 Can you think of a few advantages and disadvantages of spreadsheets and databases when compared to one another?

....

....

LISTENING | PROPERTIES OF SPREADSHEETS AND DATABASES

2 **Spreadsheets and databases have different properties. In sentences 1-8 below, you can find some of the properties that characterize them. Read the statements carefully and decide whether they refer to a database (D), a spreadsheet (S) or both (B).**

1 Uses tabular form to store data and to make calculations. **S / D / B**

2 Can be used by multiple users. **S / D / B**

3 Different formats can be used to cells containing various types of data. **S / D / B**

4 Data contained in a certain field must be preset to be of a certain kind. **S / D / B**

5 The software shows an error message when the user enters data that does not match the one previously set. **S / D / B**

6 Record of data and calculations can easily be mistaken. **S / D / B**

7 Cannot handle more than one million rows of data. **S / D / B**

8 People can make changes that are visible to everyone. **S / D / B**

3 **Listen to a talk on the advantages and disadvantages of spreadsheets and databases and check your answers to the exercise above.**

4 **Listen to the recording again and complete the gaps in sentences 1-10 with ONE word according to what you hear.**

1 A spreadsheet is an electronic _____, an electronic version of paper accounting worksheets, created to facilitate people who need to store their accounting information in _____ form, digitally.

2 In a spreadsheet, every cell is treated as a unique _____, which can store any type of information.

3 Presetting the type of data contained in a certain field prevents _____ mistakes.

4 In a database, data is stored in a _____ of a table.

5 In a spreadsheet, different cells can contain calculations, such as functions and _____.

6 A database has a specific feature called _____ similar to the tables in which you do a calculation.

7 Data _____ is a strong advantage when working with databases.

8 Setting up relations between tables will boost the performance with which you can manipulate your _____.

9 Access permissions and user restrictions increase efficiency and data _____ when using databases.

10 For the easy _____ and updating of data efficiency, data consistency, data integrity, speed insecurity, relational databases are definitely the structure to opt for.

VOCABULARY | GEETING THE BASICS DOWN

5 **Choose the best option (A-C) to complete the sentences about spreadsheet below.**

1 A basic spreadsheet is a _____ of spaces for data.

a grid   b cage   c ladder

2 A spreadsheet consists of columns and _____ .

a lengths   b lines   c rows

3 A file containing one or more worksheets in a spreadsheet is called

a _____ .

a workout   b work   c workbook

4 Use the mouse pointer to select a single cell or _____ of cells.

a bunch   b group   c block

5 A cell which is selected and worked on in a spreadsheet is called the _____ cell.

a important   b active   c focus

6 Spreadsheets can perform mathematical ____ .

  a calculations b deductions c jobs

7 To get a worksheet perform a mathematical operation, you have to enter a ___ .

  a format   b form   c formula

8 A number in a spreadsheet cell is often called a ___ .

  a digit   b numeral   c value

9 To remove the contents of a cell is to ___ that cell.

  a clean   b wipe   c clear

10 To remove a complete row is to ___ that row.

  a wipe   b delete   c erase

11 Changing the fonts, colours, etc. of a spreadsheet is called ____ .

  a formatting   b forming   c reforming

6 Complete the following text with the words given in the box below.

fields	form	objects	primary key	query the database
record	report	retrieve a record	unique	

A database has several parts. These are called (**1**) _____ . The simplest of these is a table; most databases have at least two. Tables look like a spreadsheet. Each row in the table is a(n) (**2**) _____, containing information about one item, such as a person or something that the company sells. Each of these contains several (**3**) _____ with information about the item. For example, in a company's employee database, these might be family name, given name, phone number and so on. One important point is that one field in each row must be (**4**) _____ - the same data must not be in any other record. We call this field the (**5**) _____ . It can either be a staff ID number, for example, but it can't be a given name because many people have the same given name.

Another type of object is a(n) (**6**) _____, which is used for entering data into tables. A third object type is a(n) (**7**) _____. This can show data from more than one table and at the same time it looks good and it is suitable for printing.
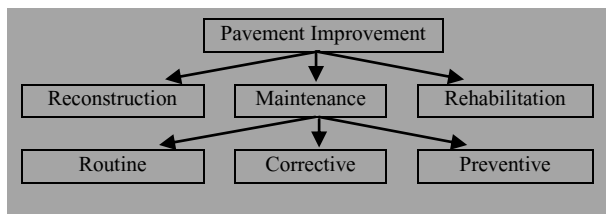
There are several ways to get data out of the database. One is simply to (**8**) _____ - for example, if we want to check the data in a single record, such as an employee's phone number. If we want to combine information from several tables or to do something with the data such as add up financial information from several records, we can (**9**) _____ .
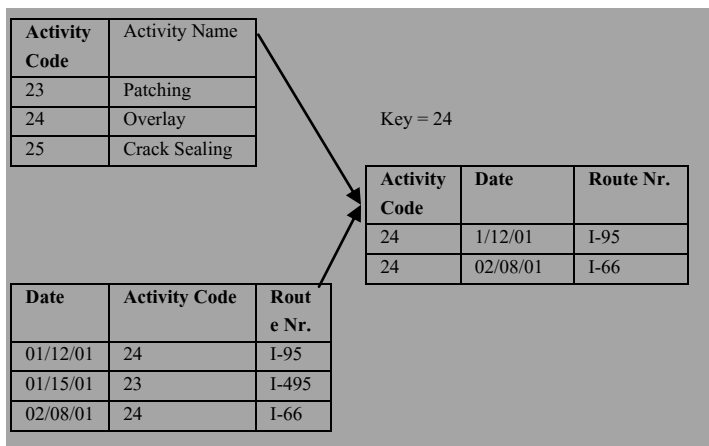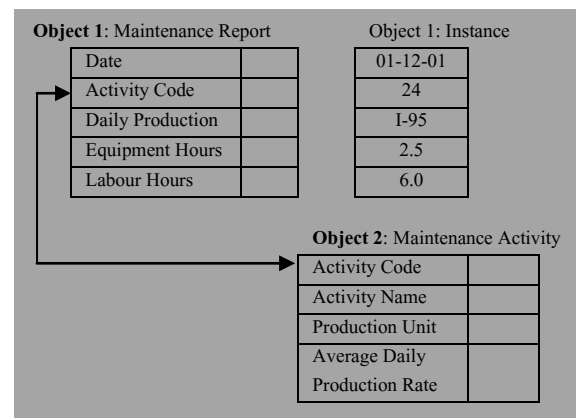
READING & VOCABULARY | DATABASE DESIGN

7 What different types of database management systems are you familiar with? Can you describe the main differences between them?

8.. The pictures below show different logical data models commonly used in databases. Can you recognize them?

	Route Nr.	Miles	Activity
Record 1	I-95	12	
Record 2	I-495	05	
Record 3	SR-301	33	

1 _____

Pavement Improvement
— Reconstruction — Maintenance — Rehabilitation
Maintenance — Routine — Corrective — Preventive

2 _____

Activity Code	Activity Name
23	Patching
24	Overlay
25	Crack Sealing

Key = 24

Activity Code	Date	Route Nr.
24	1/12/01	I-95
24	02/08/01	I-66

Date	Activity Code	Route Nr.
01/12/01	24	I-95
01/15/01	23	I-495
02/08/01	24	I-66

3 _____

Object 1: Maintenance Report

Date	
Activity Code	
Daily Production	
Equipment Hours	
Labour Hours	

Object 1: Instance

01-12-01
24
I-95
2.5
6.0

Object 2: Maintenance Activity

Activity Code	
Activity Name	
Production Unit	
Average Daily Production Rate	

Preventive Maintenance
— Rigid Pavement — Flexible Pavement
Rigid Pavement — Small Repair — Joint Seal
Flexible Pavement — Crack Seal — Patching

5 _____

4 _____

9 **Read the short excerpts on the different database models shown in the pictures 1-5 above. Using the information provided in the excerpts, check / complete your answers to the task above.**

| A	In the 1970s, the relational database was developed, to deal with data in more complex ways. In this database model, data is stored in *relations*, more commonly known as *tables*. Tables, records (sometimes known as *tuples*), and fields (sometimes known as *attributes*) are the basic components. Each individual piece of data, such as the last name or a telephone number is stored in a table field and each record comprises of a complete set of data for a particular table. A record, or row, in the table comprises the complete set of field data in that context. Each record can be identified by, and accessed through a unique identifier called a *primary key*.
B	The hierarchical model was designed to allow structured relationships that would facilitate data retrieval. Within an inverted tree structure, relationships in the hierarchical model are parent-child and one-to-many. Each parent table may be related to multiple child tables, but each child table can only be related to a single parent table. Although this model allows for fast data retrieval, its rigid structure causes some problems. For example, you can't add a child table that is not linked to a parent table and if a record is deleted in a parent table, all the records linked to it in child tables will be deleted as well.
C	Object-oriented database management systems were created in the early 1980s. In an object-oriented database, information is represented in the form of objects as used in object-oriented programming. Object databases are different from relational databases, which are table-oriented. They allow object-oriented programmers to develop the product, store them as objects and replicate or modify existing objects to make new objects within the database. Because the database is integrated with the programming language, the programmer can maintain consistency within one environment, in that both the database model and the programming language will use the same model of representation. Relational databases, by way of contrast, maintain a clearer division between the database model and the application.
D	Also based on an inverted tree structure, the next approach to database design was the network model. This model allowed more complex connections than the hierarchical mode: several inverted trees might share branches, for example. However, it also had its limitations: for example, a user would need a clear understanding of the database structure to be able to get information from the data. Moreover, if a set structure was changed, any reference to it from an external program would have to be changed as well.
E	The earliest computer databases were based on a flat file model, in which records were stored in text format. In this model, no relationships are defined between records. Without defining such relationships, data can only be accessed sequentially. This type of database model works well for situations in which you want to process all the records, but not for situations in which you want to find specific words within the database.

10 **The diagram below gives lists the main steps involved in data processing. Read each step (A-H) and decide what term is used to talk about each step.**

data coding	data collection	data sorting
data tabulation	data validation	data entry

A _____ Gather the raw data which you want to process.

B _____ Arrange and systemize the data.

C _____ Clean the data and double check for faults and inconsistencies.

D _____ Enter the data into the system.

E _____ Arrange the data into table format so that it can be analyzed.

F _____ Create categories to organize the data into relevant groups.

11 **Read the steps again and put the data processing steps into the correct order.**

1 [ ] → 2 [ ] → 3 [ ] → 4 [ ] → 5 [ ] → 6 [ ]
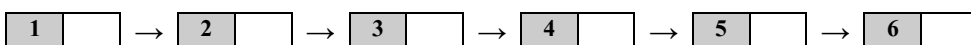
GRAMMAR | INVERSION

THEORY

The term *inversion* covers two different grammatical operations:

i) using a question form of the main verb: *e.g. Never **have I enjoyed** myself more!*

ii) changing normal positions of verb and subject: *e.g. Along the street **came a strange procession.***

The structures are normally only used in formal speech and writing. Note that all of the adverbials can be used without inversion if they come in the normal position: *e.g. I have **never** seen a more obvious case of cheating.* (normal position) / ***Never have I seen** a more obvious case of cheating!*

Inversion tends to occur:

• after negative adverbials when these are used at the beginning of a clause of a sentence: *never, rarely, seldom, hardly, barely, scarcely, no sooner,*

12 Choose the best option, A, B or C, to complete the sentence.

1	_____ how serious the situation was.	a	Little did anyone realize	**b**	Little realized anyone	**c**	Little did anyone realize
2	Just as the players took their places in the court, ___	**a**	did the rain pour down	**b**	down poured the rain	**c**	did pour down the rain
3	At no time ___ on the plane in any danger.	a	were the passengers	b	the passengers were	c	were they the passengers
4	Strange ___, I actually enjoy working underground.	a	as does it sound	b	sound though it is	c	as it may sound
5	Jane ___ the train but also lost her luggage.	a	not only did she miss	b	not only missed	c	not only did miss
6	___ is this piece of equipment to be removed from the building.	a On no account	b	Hardly	c	Rarely

13 Complete the second sentence so that it has a similar meaning to the first sentence, using the word given. Do not change the word given.

1 It was only when the office phoned me that I found out about the meeting.

find

Not until _____ about the meeting.

2 The facts were not all made public at the time.

later

Only _____ all made public.

3 The response to our appeal was so great that we had to take on more staff.

response

Such _____ to our appeal that we had to

take on more staff.

4 Harry broke his leg, and also injured his shoulder.

but

Not only _____ also injured his shoulder.

5 The police didn't suspect at all that the judge was the murderer.

did

Little _____ as being the murderer.

6 The bus driver cannot be blamed for the accident in any way.

held

In _____ responsible for the accident.

7 As soon as I got home, I realized I'd left my bag in the shops.

had

No sooner _____ I realized I'd left my bag in the shops.

8 It was only when I asked a passer-by that I realized where I was.

did

Not until _____ where I was.

WRITING & LANGUAGE WORK | LETTER / EMAIL OF COMPLAINT

14 Working together with a partner, reflect on the following questions and try to answer them in the most appropriate way.

1 What are the main parts of a letter of complaint? How is it structured?

....

....

2 What style do you think would be the most accurate to adopt when writing your letter of complaint?

....

....

3 Do you think it is ever appropriate to use strong language in a letter of complaint?

....

....

15 Complete the sentences typically used in a letter / email of complaint with the pairs of words given in the box below.

appreciate / replaced	attention / problem	complain / quality	connection / attitude
delivered / urgently	dissatisfaction / received	entitled / replacement	matter / inconvenience
purchased / standard	refund / further	terms / treatment	unless / cancel

1 I am writing in _____ with the negative _____ of a member of your staff.

2 I hope that you will deal with this _____ promptly as it is causing me considerable _____.

3 The equipment I ordered has still not been _____, despite my phone call to you last week to say it is needed.

4 Although you advertise yourself as a top-quality brand, the product I _____ was well below the _____ I expected.

5 I am writing to draw your _____ to a _____ in your customer services section.

6 I would _____ it if the faulty goods could be _____ as soon as possible.

7 I wish to complain in the strongest possible _____ about the _____ I received from a member of your staff.

8 I believe that I am _____ to an immediate _____.

9 I am writing to express my strong _____ with the goods I _____ this morning.

10 _____ I receive the goods by the end of this week, I will have no choice but to _____ my order.

11 I am writing to _____ about the _____ of a product I purchased online from your website.

12 I insist on a full _____, otherwise I will be forced to take the matter _____.

16 Read the sentences from the exercise above, and decide which part of a letter of complaint do they represent (i.e. *Opening, Complaint, Request for Action, Closing*)

17 Some expressions are often used in letters / emails of complaints. Take a look at the expressions in 1-10 below and complete each with ONE appropriate expression.

1 to write in _____ with something   **6** to be below the expected _____

2 to need something _____   **7** to complain in the strongest possible _____

3 to take the matter _____   **8** to express strong _____ with something

4 to demand a full _____   **9** to demand an immediate _____

5 to draw sb's _____ to sth.   **10** to cause sb. considerable _____

18 <u>Linking words and phrases</u> are used in complaints to express your case clearly and carefully. Complete the table with the words / phrases from the box.

Above all	As a result	Even though	Finally	Firstly	~~Furthermore~~	However
In addition	In conclusion	In fact	In particular	In reality		In spite of the fact
Nevertheless		Taking everything into consideration				Therefore

Adding another point:	**1**	Furthermore / ....
Listing points	**2**	....
Making a contrast (like *but*)	**3**	....
Making a contrast (like *although*)	**4**	....
Giving the consequence (like *so*)	**5**	....
Giving the most important example	**6**	....
Saying what the real situation is	**7**	....
Introducing the final paragraph	**8**	....

19 From the linking words discussed in the exercise above, which TWO phrases are not followed immediately by a comma, and can come in the middle of sentences as well as at the beginning?

....

20 Underline the most appropriate words or phrases in the email.

...

I am writing to complain about the poor service we have received from your company. (**1**) *Firstly / Therefore,* the goods you sent were not the ones we ordered. Our order dated 16 September clearly stated that we wanted 1,000 tablets. (**2**) *In particular / However,* we only received 800. (**3**) *Nevertheless / Furthermore* , we asked you to print our company logo in the top left corner at the back of the tablets and you have printed it in the centre.

To make matters worse, your staff were very unhelpful when I called. (**4**) *Even though / Above all*, no-one took responsibility to sort out the problem - I was simply passed from person to person. (**5**) *In fact / In addition*, after 30 minutes I have up in frustration and ended the call.

The whole matter was treated by your staff as though it was completely unimportant, (**6**) *In spite of the fact that / therefore* we have been your customers for more than five years. (**7**) *In particular / As a result*, we are considering stopping all future business with your company.

Taking everything into consideration / in reality, we must insist on an immediate replacement order, to reach here within 14 working days, at no cost to ourselves.

21 **Imagine you are Greg Olson, the manager of a smaller online store. Your company has hired a company to design the database so that you could store and manage all the data regarding customers, goods, etc. However, once you start using the database designed by the company, you are receiving constant error messages and the data cannot be updated. You also suspect that the database has been badly designed. Write a letter of complaint to Data Tech to complain about this issue. Make sure to express your dissatisfaction with the service provided by them and request an immediate solution and redesign of your database.**

Tip: You can take a look at the sample letter of complaint on the next page to help you plan and write your letter.

SAMPLE FORMAT FOR A LETTER OF COMPLAINT

[Your Address]*
[Your City, State, Zip Code]*

[Date]

[Name of Contact Person]
[Title]
[Company Name]
[Street Address]
[City, State, Zip Code]

Dear **[Contact Person]**,

[Subject - indicate the product / service addressed in your complaint]

I am writing to complain about **[state the matter, e.g. faulty installation of a product, dissatisfaction with a service, etc.]**

I am dissatisfied with your **[name service / product]** because **[describe the problem(s) encountered]**. I have already attempted to resolve this problem by **[describe attempts and action taken]**. Enclosed are copies of my records **[include copies of receipts, cancelled checks, contracts and any other relevant documents]**.

Unfortunately, the problem remains unresolved. Therefore I am hereby requesting that you **[state the specific action you want - e.g. money back, repair, exchange, etc.]**

I look forward to your reply and resolution to my problems. I will wait **[set a time limit]** before seeking third-party assistance.

Please contact me at the above email address or by phone **[provide a home or office phone number with area / country code]**.

Sincerely / Your sincerely,

[Your name]
[Account number]

Enclosed: **[List the documents enclosed / attached]**