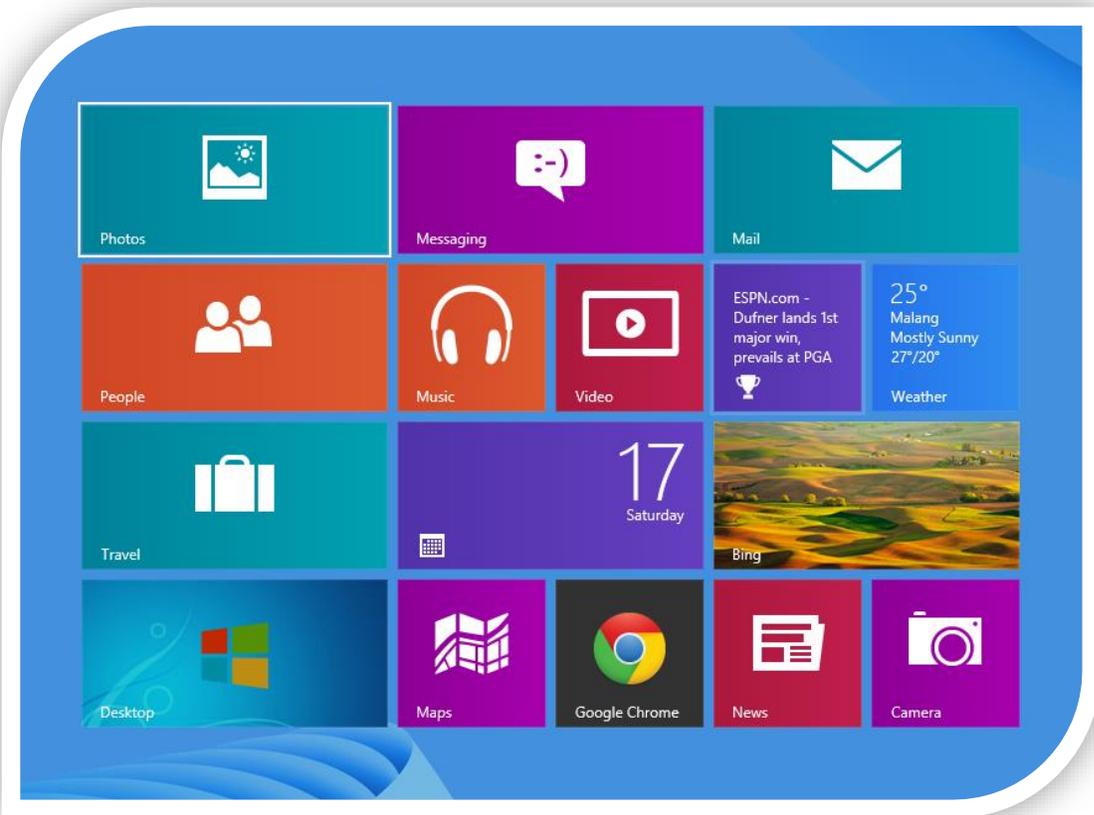


# Computer Applications

## STARTER

**A. Work in groups. List as many uses as you can for computers in one of these areas:**

1. Supermarkets
2. Hospitals
3. Airports
4. Police Headquarters



**Figure 1: Computer Application**

Let's read

B. Read the text and understand the vocabulary contextually then fill the meanings of vocabularies in the box.

DATA MINING

Data mining is simply filtering through large amounts of raw data for useful information that gives businesses a competitive edge. This information is made up of meaningful patterns and trends that are already in the data but were previously unseen.

The most popular tool used when mining is artificial intelligence (AI). AI technologies try to work the way the human brain works, by making intelligent guesses, learning by example, and using deductive reasoning. Some of the more popular AI methods used in data mining include neural networks, clustering, and decision trees. Neural networks look at the rules of using data, which are based on the connections found or on a sample set of data. As a result, the software continually analyses value and compares it to the other factors, and it compares these factors repeatedly until it finds patterns emerging. These patterns are known as rules. The software then looks for other patterns based on these rules or sends out an alarm when a trigger value is hit.

Clustering divides data into groups based on similar features or limited data ranges. Clusters are used when data isn't labeled in a way that is favorable to mining. For instance, an insurance company that wants to find instances of fraud wouldn't have its records labeled as fraudulent or not fraudulent. But after analyzing patterns within clusters, the mining software can start to figure out the rules that point to which claims are likely to be false.

Decision trees, like clusters, separate the data into subsets and then analyze the subsets to divide them into further subsets, and so on (for a few more levels). The final subsets are then small enough that the mining process can find interesting patterns and relationships within the data.

Once the data to be mined is identified, it should be cleansed. Cleansing data frees it from duplicate information and erroneous data. Next, the data should be stored in a uniform format within relevant categories or fields. Mining tools can work with all types of data storage, from large data warehouses to smaller desktop databases to flat files. Data warehouses and data marts are storage methods that involve archiving large amounts of data in a way that makes it easy to access when necessary.

When the process is complete, the mining software generates a report. An analyst goes over the report to see if further work needs to be done, such as refining parameters, using other data analysis tools to examine the data, or even scrapping the data if it's unusable. If no further work is required, the report proceeds to the decision makers for appropriate action. The power of data mining is being used for many purposes, such as analysing Supreme

Court decisions, discovering patterns in health care, pulling stories about competitors from newswires, resolving bottlenecks in production processes, and analyzing sequences in the human genetic makeup. There really is no limit to the type of business or area of study where data mining can be beneficial.

GLOSSARY			
Simply	:	Look for	:
Made up	:	Favorable	:
As a result	:	Fraudulent	:
Compare	:	Figure	:
Rules	:	Likely	:

**C. Find the answers to these questions from the above text.**

1. What tool is often used in data mining?
2. What a method is used for the following processes?
  - a. Separate data into subsets and then analyze the subsets to divide them into further
  - b. Subsets for a number of levels.
  - c. Continually analyze and compare data until patterns emerge.
  - d. Divide data into groups based on similar features or limited data ranges.
3. What term is used for the patterns found by neural networks?
4. When are clusters used in data mining?
5. What types of data storage can be used in data mining?

**D. Mark the following statements as True (T) or False (F):**

- a. Data mining is a process of analysing known patterns in data.
- b. Artificial intelligence is commonly used in data mining.
- c. In data mining, patterns found while analysing data are used for further analysing the data.
- d. Data mining is used to detect false insurance claims.
- e. Data mining is only useful for a limited range of problems.

**Let's speak**

**Read the text below then retell by using your own words.**

	<p><b>DATA STORES</b> You must first have data to mine. Data stores include one or several data bases or data warehouses.</p> <p><b>CLEANSE DATA</b> Data must be stored in a consistent format and free from errors and redundancies.</p> <p><b>SEARCH DATA</b> Actual mining occurs when data is combed for patterns and trends. Rules for patterns are noted.</p> <p><b>ANALYZE REPORTS</b> Someone must analyze mining results for validity and relevance.</p> <p><b>REPORT FINDINGS</b> The mining results can then be reviewed and interpreted, and a plan of action determined.</p>
-----------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

## LANGUAGE WORK

### Present passive

Study these sentences.

- 1 The radar sends out a beam of radio waves.
- 2 The information is stored on a smart card.

**In 1 the verb is active and in 2 it is passive, the Present passive. Why is this so? What difference does it make? In 1 the agent responsible for the action is included - the radar.**

**In 2 the agent is not included although we know what it is - the microprocessor. The passive is often used to describe the steps in a process where the action is more important than the agent and where the agent is already known to the reader. If we need to add the agent, we can do so like this:**

- 3 The information is stored on a smart card by the micro processor.

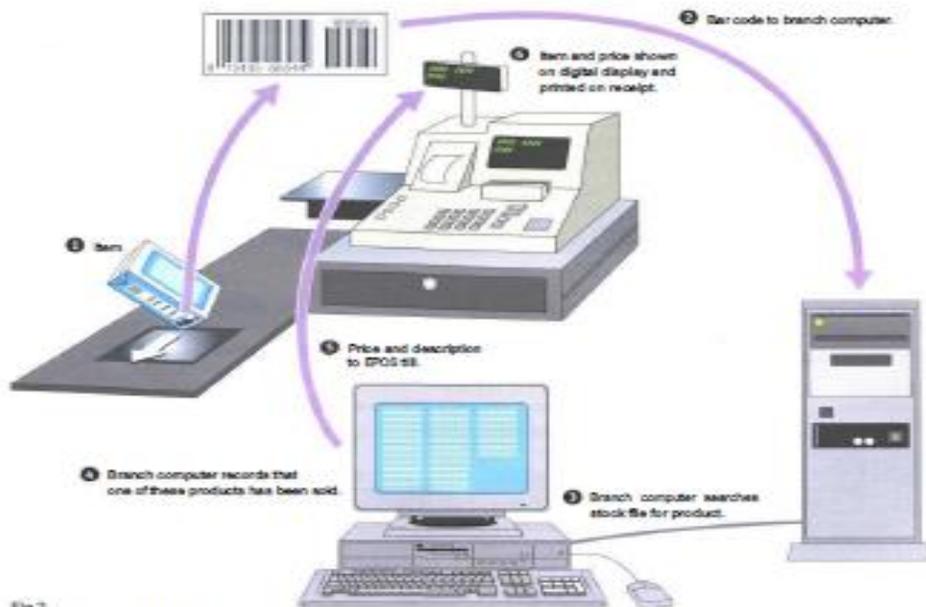
**E. Describe the operation of the new speed trap by converting each of these statements to the Present passive. Add information on the agent where you think it is necessary.**

1. The first unit records the time each vehicle passes.
2. It identifies each vehicle by its number plates using OCR software.
3. It relays the information to the second unit.
4. The second unit also records the time each vehicle passes.
5. The microprocessor calculates the time taken to travel between the units.
6. It relays the registration numbers of speeding vehicles to police headquarters.
7. A computer matches each vehicle with the DVLC database.
8. It prints off a letter to the vehicle owners using mailmerge.

Let's write

**F. With the help of the following diagram, sequence these steps in the operation of an EPOS till. Then write a description of its operation in the Present passive.**

- a. The scanner converts the barcode into electrical pulses.
- b. The branch computer sends the price and description of the product to the EPOS till.
- c. The scanner reads the barcode.
- d. The branch computer records the sale of the product.
- e. The till shows the item and price.
- f. The checkout operator scans the item.
- g. The scanner sends the pulses to the branch computer.
- h. The till prints the item and price on the paper receipt.
- i. The branch computer searches the stock file for a product matching the barcode EAN.



**Figure 2: EPOS till**

