Unit 3 – Computer Application- Introduction

- As computer systems become more intelligent, they are used in a wider variety of work situations where previously it was necessary to employ people.
- Hospitals can increasingly use computers where highly trained people were required to deal with life threatening situations.

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- Computers can also be used in airports where highly trained experts were previously required to ensure safety and the police can make more use of computers to detect and investigate increasingly sophisticated crimes.
- One of the uses considered in this unit is police **speed traps** used to catch drivers that are breaking the official speed limit.

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- A small processor, known as a **microprocessor**, calculated the speed of the car from the changes in the radio waves and triggered an ordinary camera with a flashgun to take a photograph of the car if it was speeding.
- The details were stored on a **smart card**
  - **Smart card:** A plastic card with a built-in computer system that can store large amounts of data.

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- When the smart card was taken back to the police station, the driver's details were obtained from the **DVLC** (Driver and Vehicle Licensing Centre) **database** i.e. the central computerized records of all licensed drivers and vehicles.

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- Newer systems prevents 'surfing' i.e. where the driver only slows down as they pass through the speed trap, by using two computerized units with digital cameras placed at a fixed distance apart.
- Each unit records the time that a vehicle passes it, as well as photographing and identifying the car license number using **OCR software**
  - **OCR software**: **Optical character recognition** software that changes picture images of letters and numbers into digital form for use by a computer system.

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- The computer then uses the difference in recorded times to calculate the speed of the vehicle.
- The registration numbers of vehicles exceeding the speed limit are immediately **downloaded** (copied from server computer) to the computer at police headquarters where each vehicle is matched with the DVLC database
- Standard letters are then printed off addressed to the vehicle owners using **mailmerge**.

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- There are many ways in which computer systems can be used in large supermarkets, particularly for financial calculations and in stock control using **EPOS tills** (electronic point of sale cash tills).
- Each item on a supermarket shelf has a **barcode label** with a **barcode** (a standard set of vertical bars of varying thickness used to identify products) printed on it.

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- The barcode number system giving standard price and item code numbers used throughout Europe is known as **EAN** (European Article Number).
- The barcodes are read by scanner devices called **barcode readers** that are attached to the EPOS tills.
- When a checkout operator moves the barcode label across the scanner, the label is scanned and the barcode number for that item is read.

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- The scanner signals are converted to a **digital** form (where the changing signal is either off or on) and sent to the supermarket branch computer.
- The branch computer checks the digital EAN code against a computer **database** (a type of application program used for storing information so that it can be easily searched and stored) that holds a record of each type of item.

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- In this way the item and the price of the item can be identified and the sale of the product can be recorded by the computer.
- The item and the price are shown on the EPOS till display and printed on a paper receipt.

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- Computers are also used to provide cash to users and to process bank cards such as Visa cards using **ATM** (automatic teller machine – the type of machine used by banks for enabling customers to withdraw money from their bank accounts)

Unit 3 – Computer Application

- **Writing**
  - Description the use of computer application in a particular area.