




Data Capture



Keyboard data entry

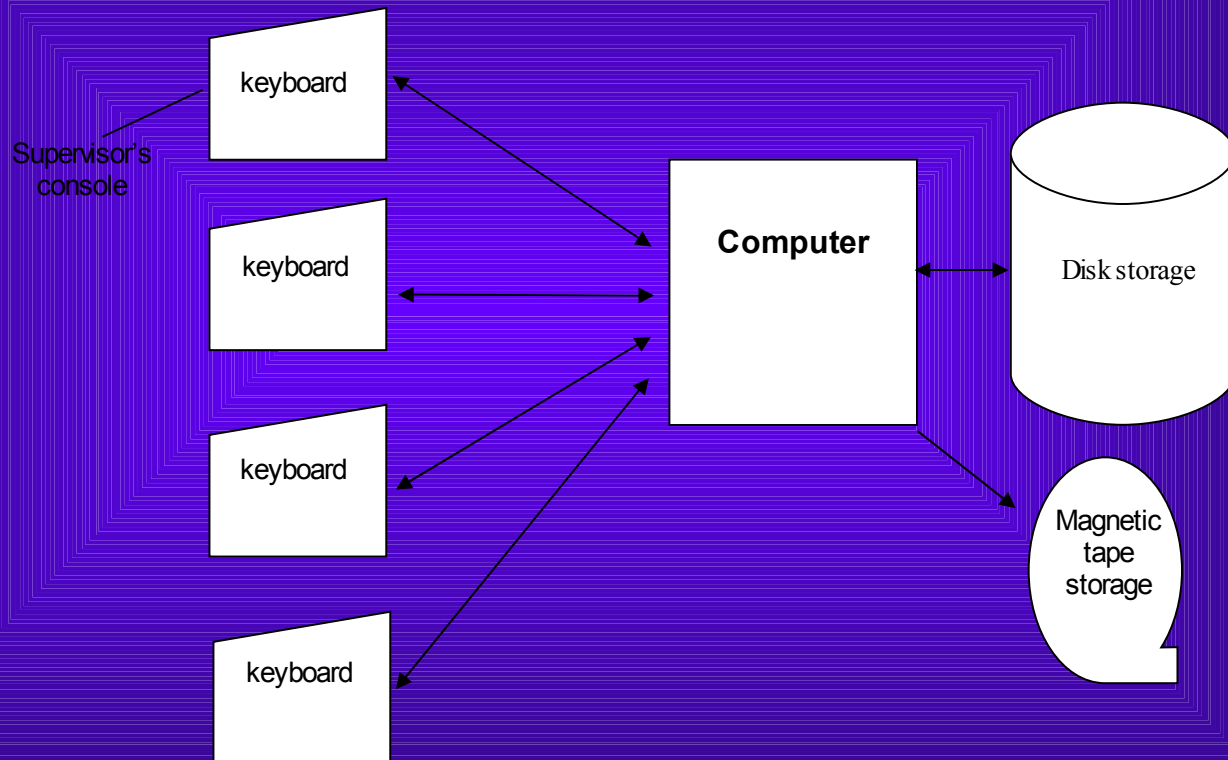
- ◆ the most common input device
- ◆ suitable for a wide range of applications
 - entering programs
 - typing all kinds of documents using a word processor
 - entering personal details of customers or patients at a hospital, etc.



Keyboard data entry – Disadvantages

- ◆ Data entered at a keyboard is commonly copied from a source document, and as such
 - It is easy to make *transcription* errors – that is, copy the data wrongly from the document
 - It is time-consuming
 - Data entry operators who enter data all day every day are prone to *repetitive strain injury (RSI)*, a condition which renders them unable to do any further data entry

Key-to-disk systems





Voice data entry

- ◆ The user speaks the text into a microphone
- ◆ Special software interprets the text and displays it on a screen
- ◆ Text may be edited using the keyboard and exported to a word processing package such as Word.
- ◆ The accuracy of the voice recognition system is improved by ‘training’ it to a particular user’s voice



Scanners and OCR

- ◆ An optical scanner can be used to scan graphical images and photographs
- ◆ Software can then be used to edit or touch up the images
- ◆ Scanners can also be used to read typed or even hand-written documents



Scanners and OCR (continued)

- ◆ **OCR (Optical Character Recognition) software can then be used to interpret the text and export it to a word processor or data file**
- ◆ **Scanners are also used to input large volumes of data on preprinted forms such as credit card payments, where the customers account number and amount paid are printed at the bottom of the payment slip.**



Magnetic Ink Character Recognition (MICR)

- ◆ All banks use MICR for processing cheques.
- ◆ Along the bottom of a cheque the bank's sort code, customer account number and cheque number are encoded in special characters in magnetic ink.
- ◆ The amount of the cheque is encoded in magnetic ink when it is handed in at a bank.

The cheques can then be processed extremely fast by high-speed MICR devices that read, sort and store the data on disk.



MICR(continued)

- ◆ MICR has several advantages for processing cheques:
 - It is hard to forge the characters
 - The characters can be read even if the cheque is crumpled, dirty or smudged
 - The characters are readable by humans, unlike bar codes



Other data capture methods

- ◆ Magnetic stripe
- ◆ Smart cards
- ◆ Optical Mark Recognition (OMR)
- ◆ Bar code reader or scanner
- ◆ Hand-held input devices
- ◆ Digitiser (Graphics tablet)



Benefits of using bar codes

- ◆ **Fast-selling items** automatically reordered to meet demand
- ◆ **Slow-selling items** can be identified preventing build-up of unwanted stock
- ◆ **Effects of repositioning a given product** within a store can be monitored
- ◆ **Historical data** can be used to predict seasonal fluctuations very accurately



Other uses of bar codes

◆ Warehousing

- bar coded containers of raw materials are stored in racks of bins which are also bar coded.

◆ Transport and distribution

- individual packages are bar coded

◆ Manufacturing

- work in progress tracked using bar codes



More uses of bar codes

- ◆ **Marketing**

- bar coded multiple choice questionnaires

- ◆ **Medical**

- bar codes used to identify blood and other samples

- ◆ **Libraries**

- used to record loans and track stock

- ◆ **Banking, insurance and local government**

- for document control and retrieval.