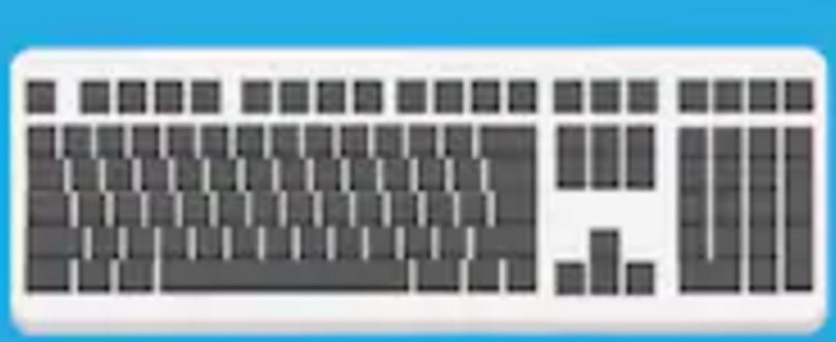
Lecture 6

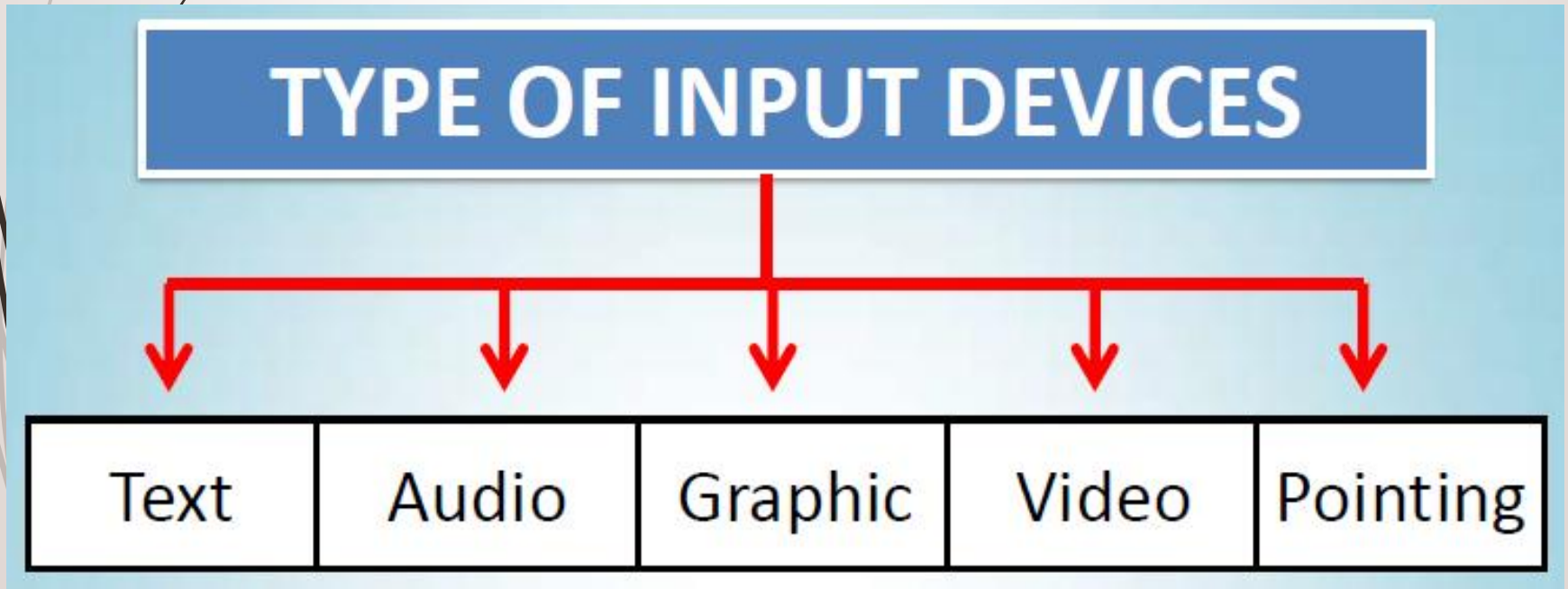
Computer and Information Technology



Computer Peripherals: Input Devices (Part One)

Defining Input Devices

Input devices are pieces of equipment used to provide data and control signals to an information processing system such as a computer, smart phone, tablet or any information processing appliance.
Example: Keyboards, Mouse, Scanners, Digital Cameras, Joysticks, and Microphones.



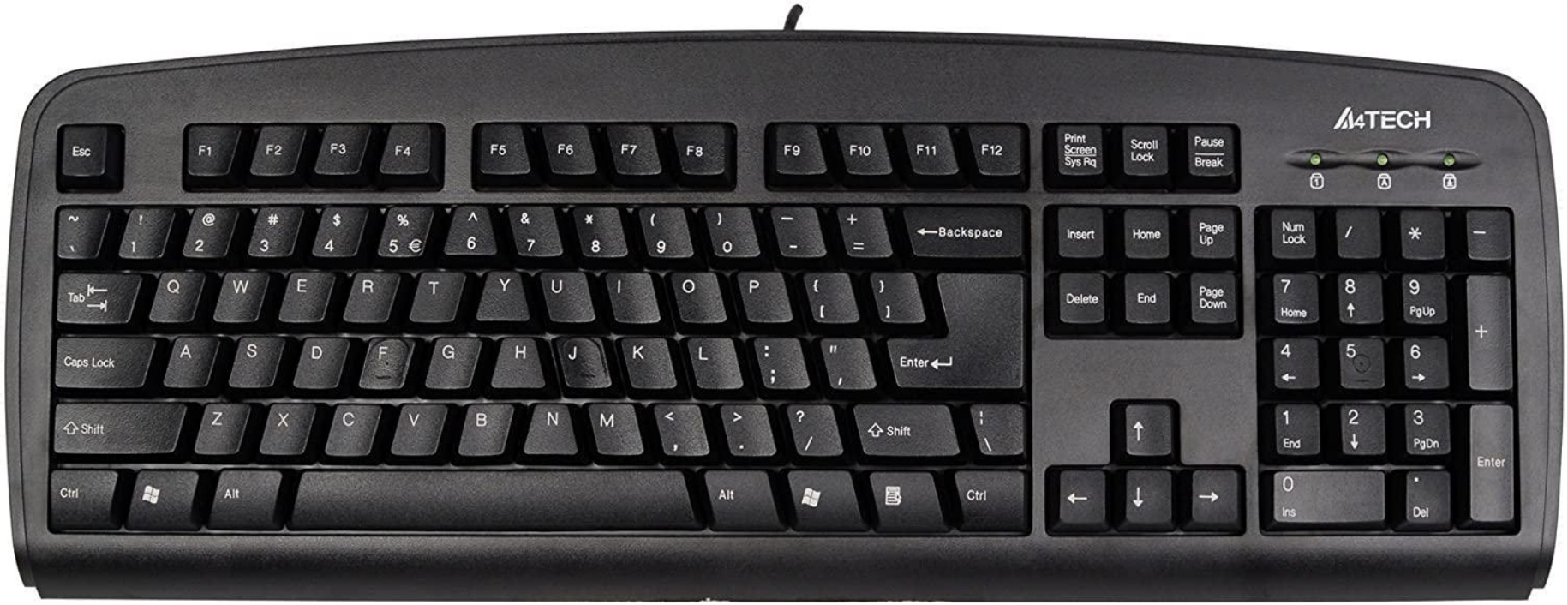
Input Type = Text Device = Keyboard

Keyboard is the most common and very popular input device which helps to input data to the computer. The layout of the keyboard is like that of traditional typewriter, although there are some additional keys provided for performing additional functions.

Input Type = Text Device = Keyboard

S.No	Keys & Description
1	**Typing Keys** These keys include the letter keys (A-Z) and digit keys (09) which generally give the same layout as that of typewriters.
2	**Numeric Keypad** It is used to enter the numeric data or cursor movement. Generally, it consists of a set of 17 keys that are laid out in the same configuration used by most calculators.
3	**Function Keys** The twelve function keys are present on the keyboard which are arranged in a row at the top of the keyboard. Each function key has a unique meaning and is used for some specific purpose.
4	**Control keys** These keys provide cursor and screen control. It includes four directional arrow keys. Control keys also include Home, End, Insert, Delete, Page Up, Page Down, Control(Ctrl), Alternate(Alt), Escape(Esc).
5	**Special Purpose Keys** Keyboard also contains some special purpose keys such as Enter, Shift, Caps Lock, Num Lock, Space bar, Tab, and Print Screen.

Input Type = Text Device = Keyboard



Anti-RSI

Input Type = Text Device = Keyboard

Ergonomic

Input Type = Text Device = Keyboard

Input Type = Text Device = Keyboard

Ergonomic

Input Type = Text Device = Keyboard

Laser Projected

(Bluetooth)

Input Type = Text code
Device = Barcode reader

Bar Code Reader is a device used for reading bar coded data (data in the form of light and dark lines). Bar coded data is generally used in labelling goods, numbering the books, etc. Unique numeric codes can be coded into lines of varying thickness and spacing and can be read by projecting a LASER light onto that dark bars. This is a very fast method to input numeric codes into a computer.

QR Code

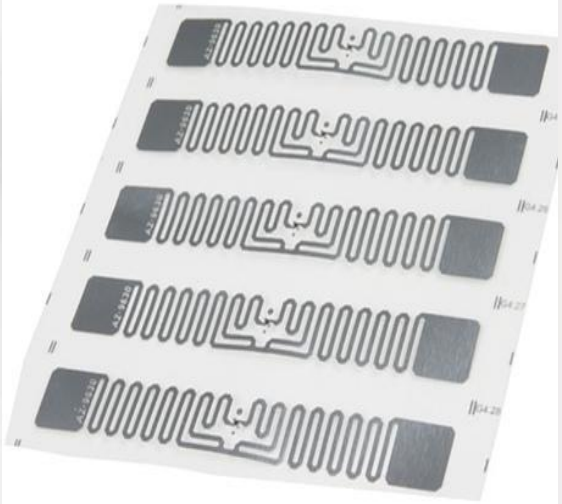
Input Type = Text code
Device = MICR

Magnetic Ink Character Reader (MICR)

MICR input device is used in banks as there are large number of cheques to be processed every day. The bank's code number and cheque number are printed on the cheques with a special type of ink that contains particles of magnetic material that are machine readable once magnetized. MICR can read text written with magnetic ink even with all the write overs and bank seals.

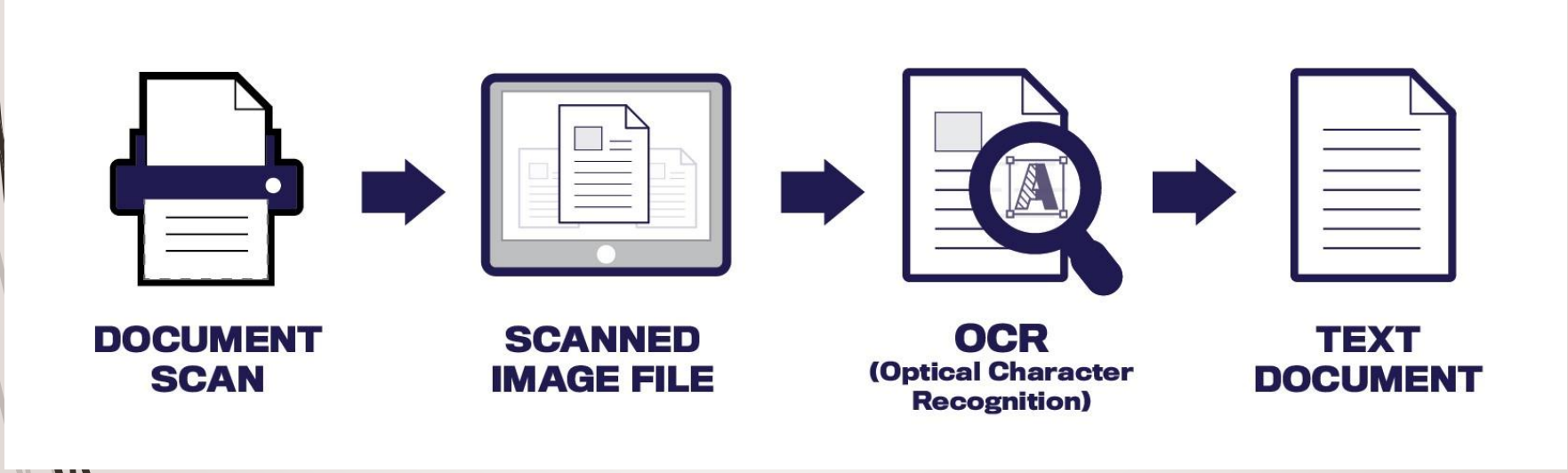
Input Type = Text code
Device = RFID Scanner

RFID stands for Radio Frequency Identification . An RFID Reader is a radio frequency transmitter and receiver that can read and write information to an RFID tag. RFID Readers can also be fixed or portable. RFID scanner uses of radio waves to power up specialized RFID tags which then return their unique code to be picked up by the scanner. These tags can be very small, cheap to manufacture, re-usable and requires no LOS. Only proximity to the scanner is enough.



Input Type = Text
Device = OCR

Optical character recognition/reader or OCR is the electronic conversion of images of typed, handwritten or printed text into machine-encoded text, whether from a scanned document, a photo of a document, a scene-photo or from subtitle text superimposed on an image.



Input Type = Text
Device = OCR

At first, a document is scanned by any type of image scanner and an image file is produced. And then the OCR software uses its character recognition engine and artificial intelligence (AI) to recover the written text from it and generates a text file or in some cases a document file with all the text formattings.

Flatbed Scanner for OCR

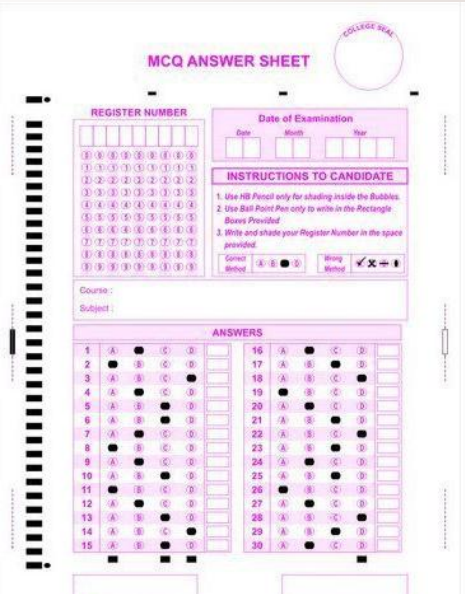
Input Type = Text
Device = OCR

Handheld OCR

Sheet fed Scanner for OCR

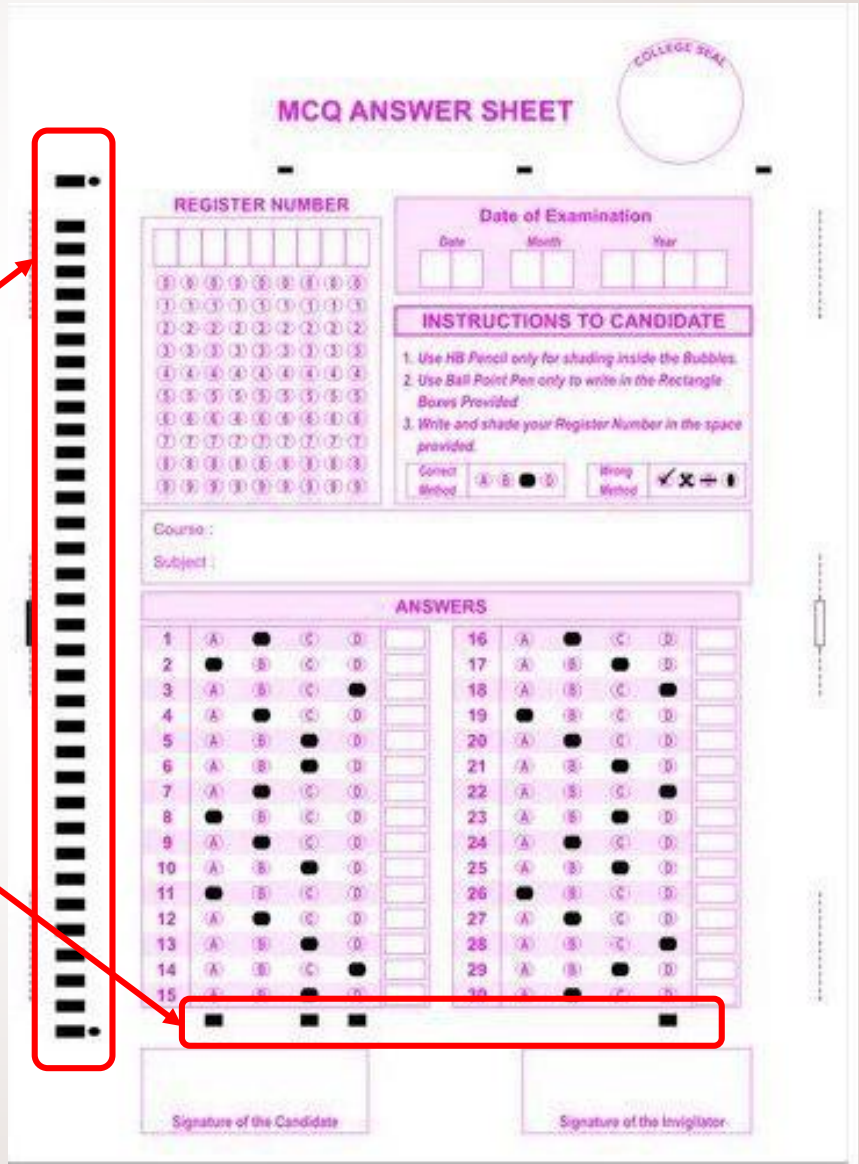
Input Type = Vote/Tally/Option
Device = OMR

OMR stands for Optical Mark Recognition. This popular recognition technology is used for collecting data from “fill-in-the-bubble” forms such as educational tests, surveys, assessments, evaluations, and many other multiple choice forms. It requires a special type of form with pre-printed marks which are used to detect the position of user made black circles by the use of relative positioning algorithm.



Input Type = Vote/Tally/Option
Device = OMR

Pre-Printed Marks



OMR vs. OCR

OMR	OCR
Optical Mark Recognition	Optical Character Recognition or Reader
It can only read the position of user made marks to identify MCQ choices or votes.	It can read hand written, typed of printed text in its supported languages.
Using its recognition engine, OMR machines inputs votes, answers to MCQs into computer database automatically.	OCR generates text or document files from images or scanned documents automatically.
OMR requires special form with pre-printed marks so that it can use relative positioning technique and algorithm to pin point marking locations.	OCR uses character recognition engine and advanced AI to recognize hard to detect writings.

End of Part 1

Stay Home, Stay Safe

Always put on a mask when you are in public!