

# Ch : 2

Input Devices

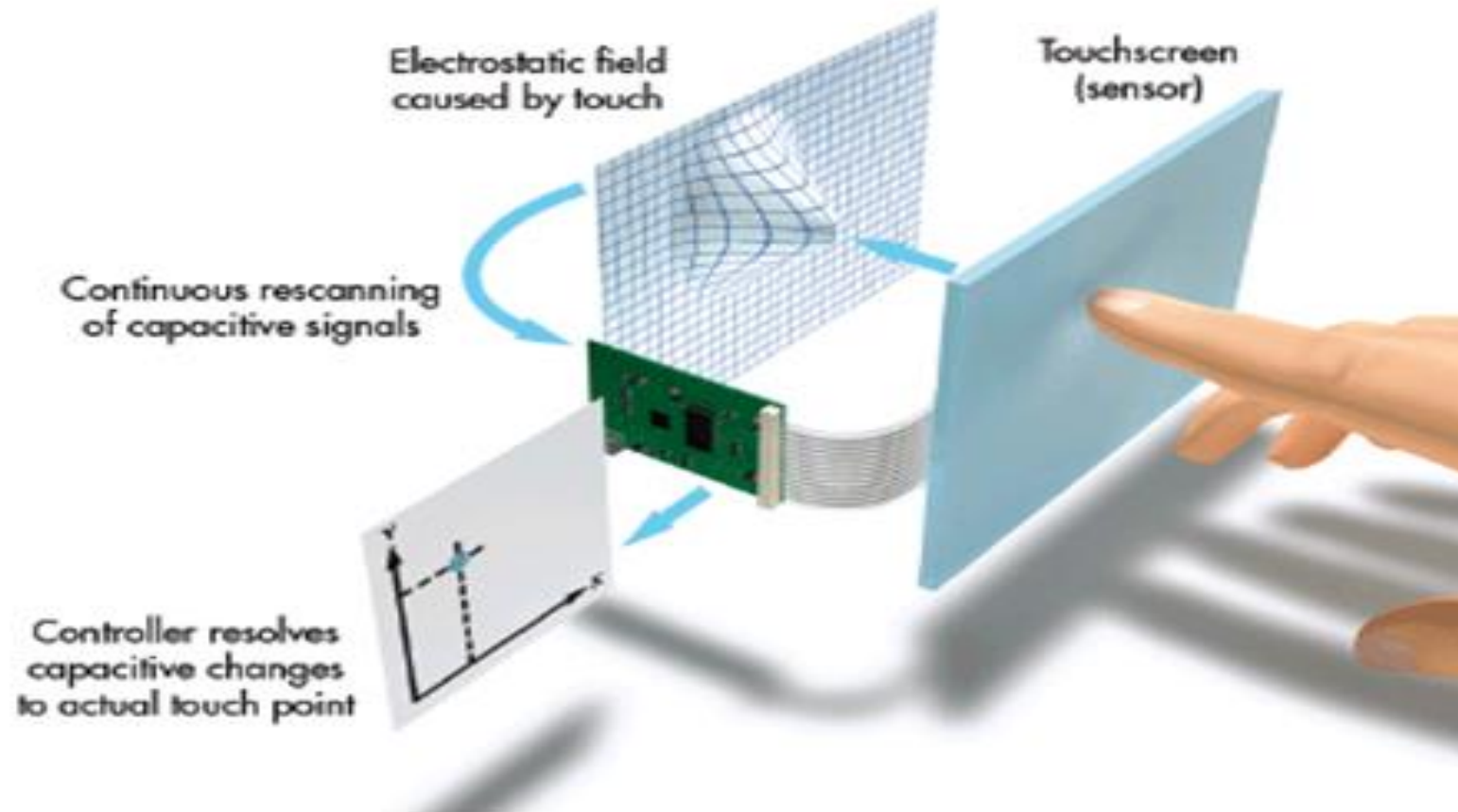
# Types of Input devices :

- Keyboard
- Mouse
- Trackball
- Glide-pad
- Joystick
- Light Pen
- Touch Screen
- Digitizers and graphic tablet
- Mic (Sound Input)
- Camera (photo video input)
- POS (Point Of Sale)
- Terminal (Scanner)
- MIDI (Musical Instrument Digital Interface) Keyboard
- Wireless Devices (Keyboard, Mouse etc)

# Touch screen :

- The touchscreen technology is the direct manipulation type of gesture based technology
- A touch screen is the electronic visual display capable of detecting and locating a touch over its display area
- This is generally referred to as touching the display of the device with a finger or hand
- This technology is most widely used in computers, user interactive machines, smartphones, tablets, etc to replace most functions of the mouse and keyboard.

Cont....



# Components and Working :

- A basic touch screen is having a touch sensor, a controller, and a software driver as three main components
- The touch screen is needed to be combined with a display and a PC to make a touch screen system
- Touch Sensor : Sensor generally has an electrical current or signal going through it and touching the screen causes a change in the signal.
- Controller : A controller will be connected between the touch sensor and PC. It takes information from the sensor and translates it for the understanding of PC.

# Cont...

- Software Driver : It allows computers and touch screen to work together. It tells OS how to interact with the touch event information that is sent to the controller.

# Camera :

- A camera is an optical instrument used to record images
- A most basic, cameras are sealed boxes with a small hole that allow light into capture an image on a light sensitive surface.
- Lenses focus the light entering the camera,
- Video camera is also a camera used for electronic motion picture, initially developed for the television industry but now common in other applications as well
- Closed-circuit television (CCTV) generally uses PTZ (pan tilt zoom) camera for security, or monitoring purpose. They are designed to be small, easily hidden.

## Cont....

- Webcams are video cameras that stream live video feed to a computer
- Smart phones have built-in video cameras and can capture photos and videos with high resolution
- Special camera systems are used for scientific research, like, satellite, space probe, AI, robotics research, medical use etc. they use x-ray or infrared.



# Point Of Sale (POS) :



# POS :

- The point of sale or point of purchase is the time and place where a retail transaction is completed
- At the point of sale, the merchant calculates the amount owed by the customer, indicates that amount, may prepare an invoice for the customer and indicates to make payment
- To calculate amount, the merchant may use various devices such as barcode, scanners, touch screens, other hardware or software.

# MIDI Keyboard:



# Cont...

- MIDI stands for Musical Instrument Digital Interface.
- It is a technical standard that describes a communication protocol, digital interface that connect a wide variety of electronic musical instruments, computers, and related audio devices for playing, editing and recording music
- This increases the portability and flexibility of stage setups
- A single MIDI link through a MIDI cable can carry up to 16 channels of information each of which can be routed to a separate device or instrument.

# Cont...

- A MIDI recording is not an audio signal, as with a sound recording made with a microphone



# Digitizers :

- Digitizer is an input device which converts analog information into digital form. Digitizer can convert a signal from the television or camera into a series of numbers that could be stored in a computer.
- They can be used by the computer to create a picture of whatever the camera had been pointed at.
- Digitizer is also known as Tablet or Graphics Tablet as it converts graphics and pictorial data into binary inputs.
- A graphic tablet as digitizer is used for fine works of drawing and image manipulation applications.

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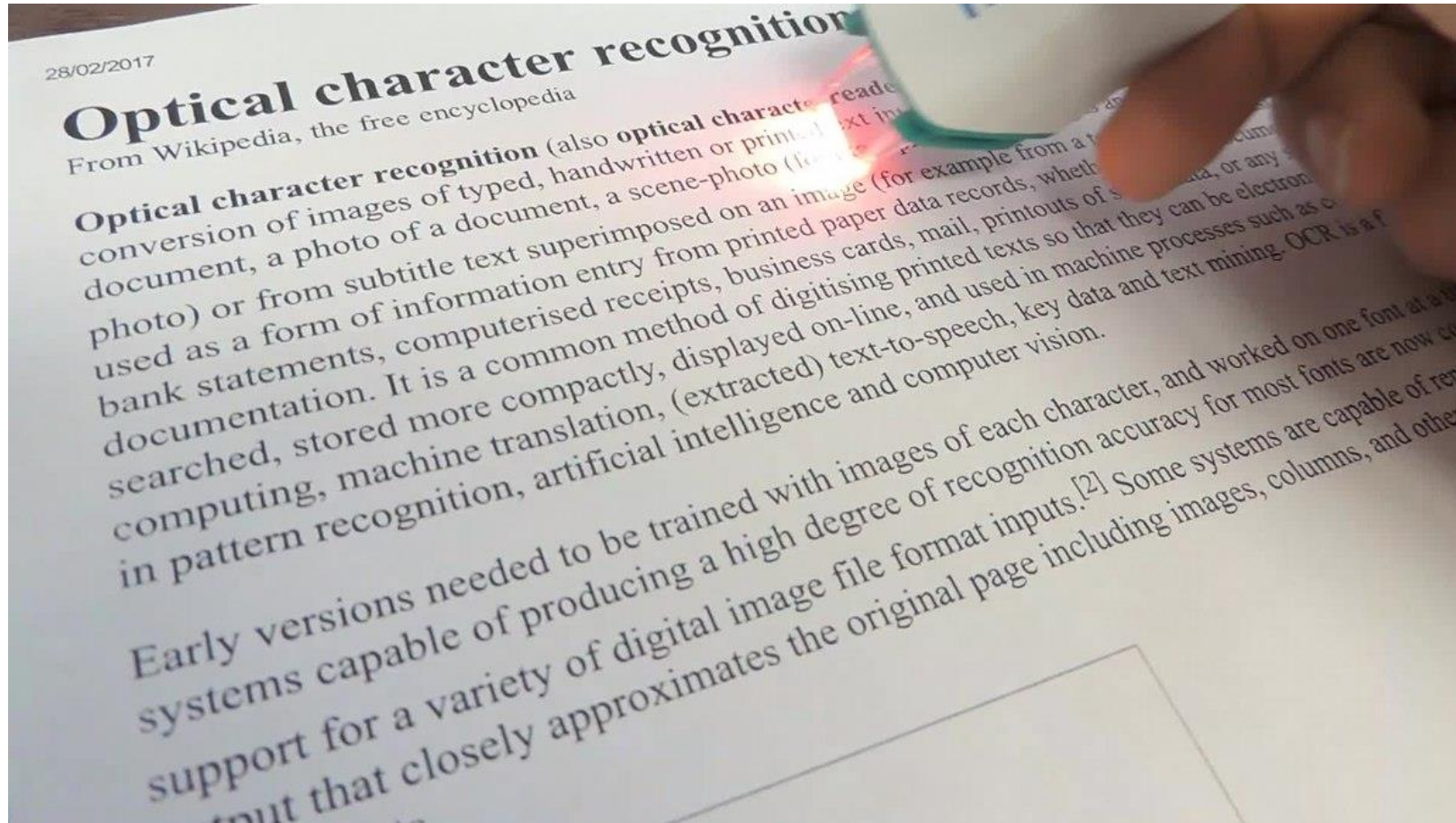


# OCR :

- **Optical character recognition** or **optical character reader (OCR)** is the electronic or mechanical 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 (for example the text on signs and billboards in a landscape photo) or from subtitle text superimposed on an image
- Widely used as a form of data entry from printed paper data records – whether passport documents, invoices, bank statements, computerized receipts, business cards, mail, printouts of static-data, or any suitable documentation – it is a common method of digitizing printed texts so that they can be electronically edited, searched, stored more compactly, displayed on-line, and used in machine processes such as machine translation, (extracted) text-to-speech, key data.



# Cont...



OMR :