
CSC 101

Applications of ICT

Lecture

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Using the input devices

- CPU is computer brain the input devices are its sensory organs
- From user point of view, input device are important
- Enables user to enter information and commands into the computer
- Two common input devices
 - Keyboard
 - Mouse

Input Devices

- Hardware used to enter data and instructions



Two Common Input Devices

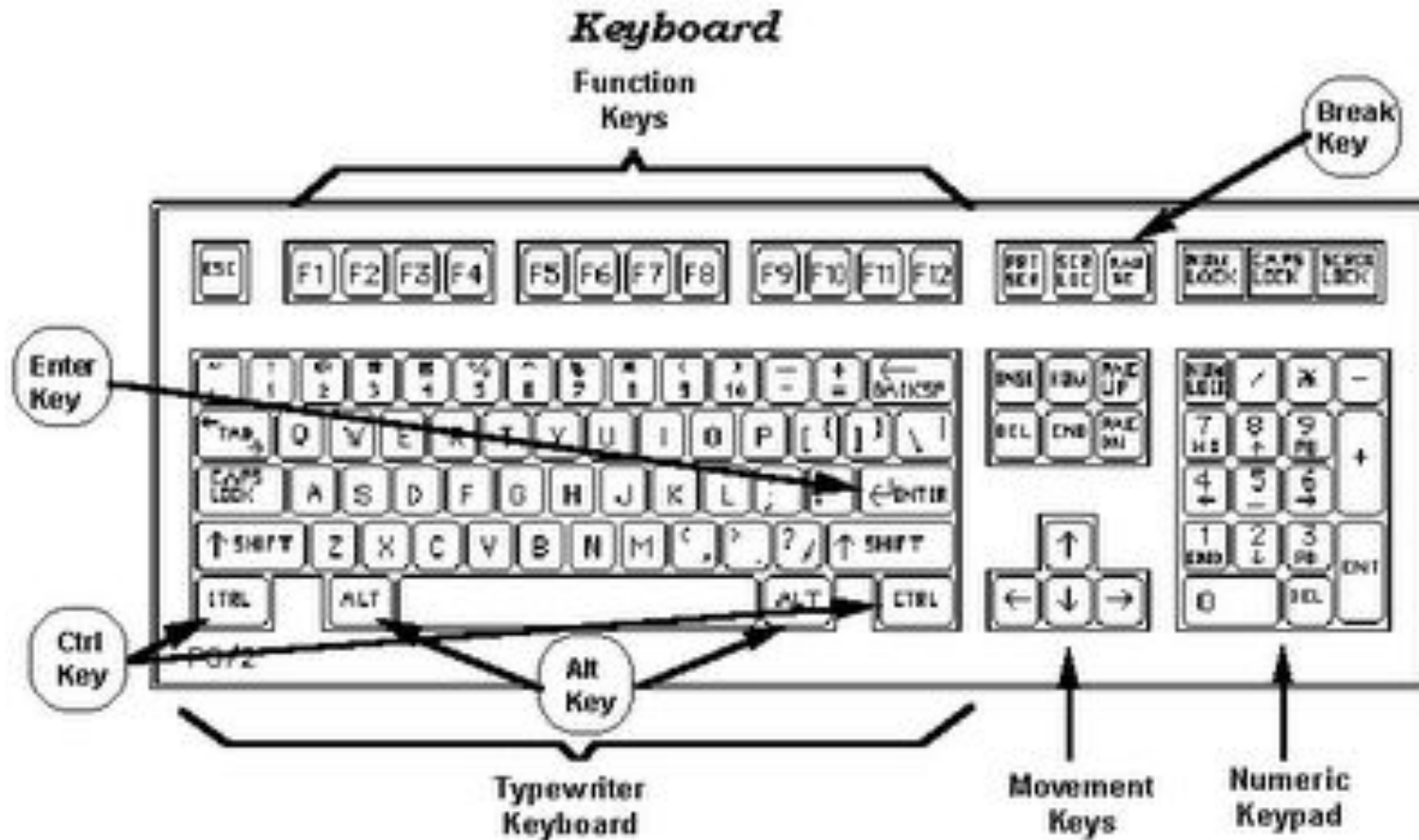
- Keyboard
- Mouse

The Keyboard

- First peripheral to be used with computers
- The most common input device for inputting text and numbers
- About 100 keys
- Must be proficient with keyboard
- Skill is called keyboarding

Standard Keyboard Layout

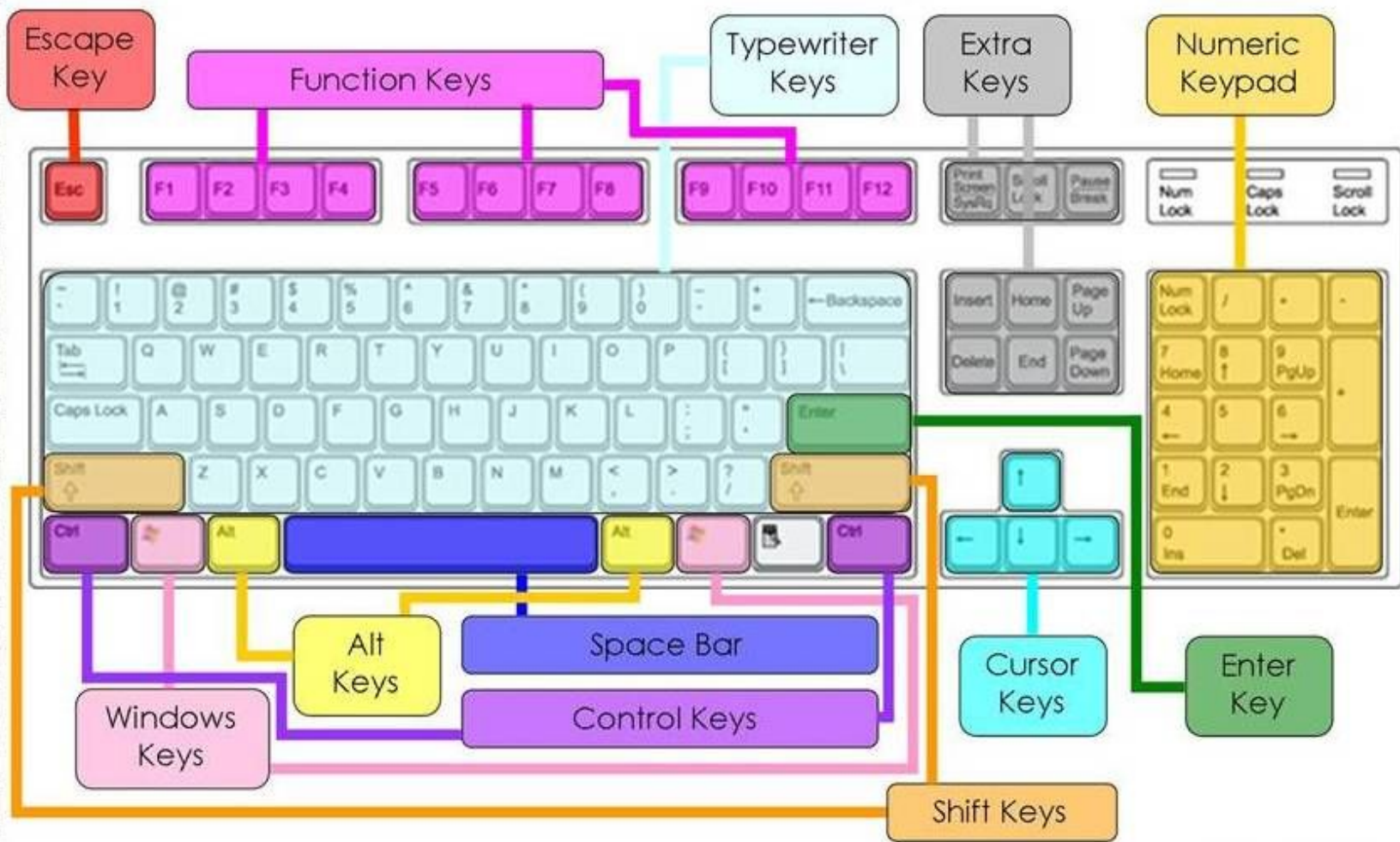
- IBM Enhanced Keyboard with 101 keys



Five Groups of Keys

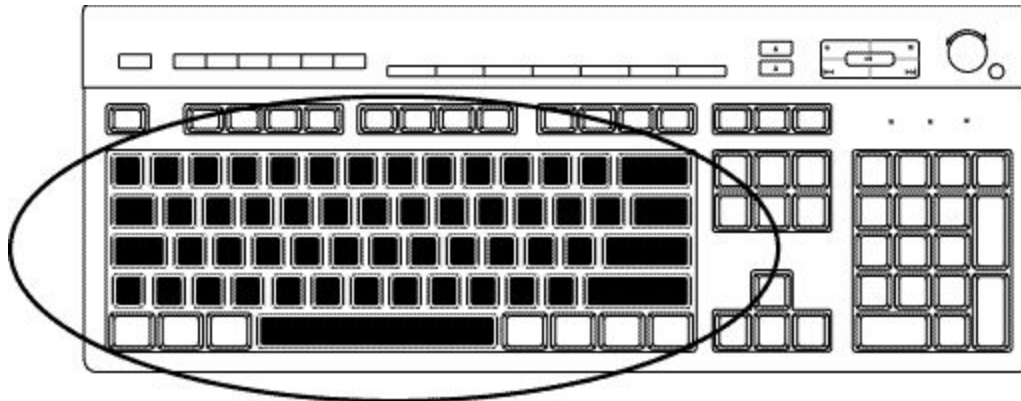
- Alphanumeric Keys
- Modifier Keys
- Numeric Keypad
- Function Keys
- Cursor Movement keys

Parts of a Keyboard



Alphanumeric Keys

- Area of computer that looks like a typewriter
- Sometimes called QWERTY
- Keys having specific functions
 - Tab
 - Caps Lock
 - Backspace
 - Enter



Modifier Keys

- Shift
- Alt (Alternate)
- Ctrl (Control)
- Modify the input of other keys



Numeric Keypad

- usually located on the right side of the keyboard,
- Has 10 digits and mathematical operators (+, -, *, and /).
- also features a NumLock key
 - On - forces the numeric keys to input numbers.
 - Off - perform cursor movement control and other functions.

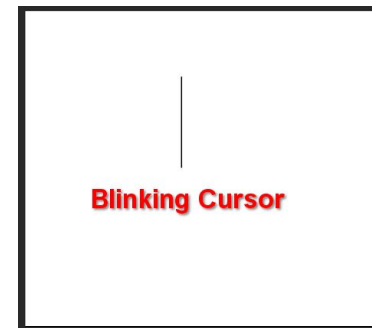


Function Keys

- labeled F1, F2, and so on
 - in a row along the top of the keyboard.
- allow you to input commands without typing long strings of characters or navigating menus or dialog boxes.
- Each key's purpose depends on the program you are using.
- Many programs use function keys along with modifier keys to give the function keys more capabilities.

Cursor Movement Keys

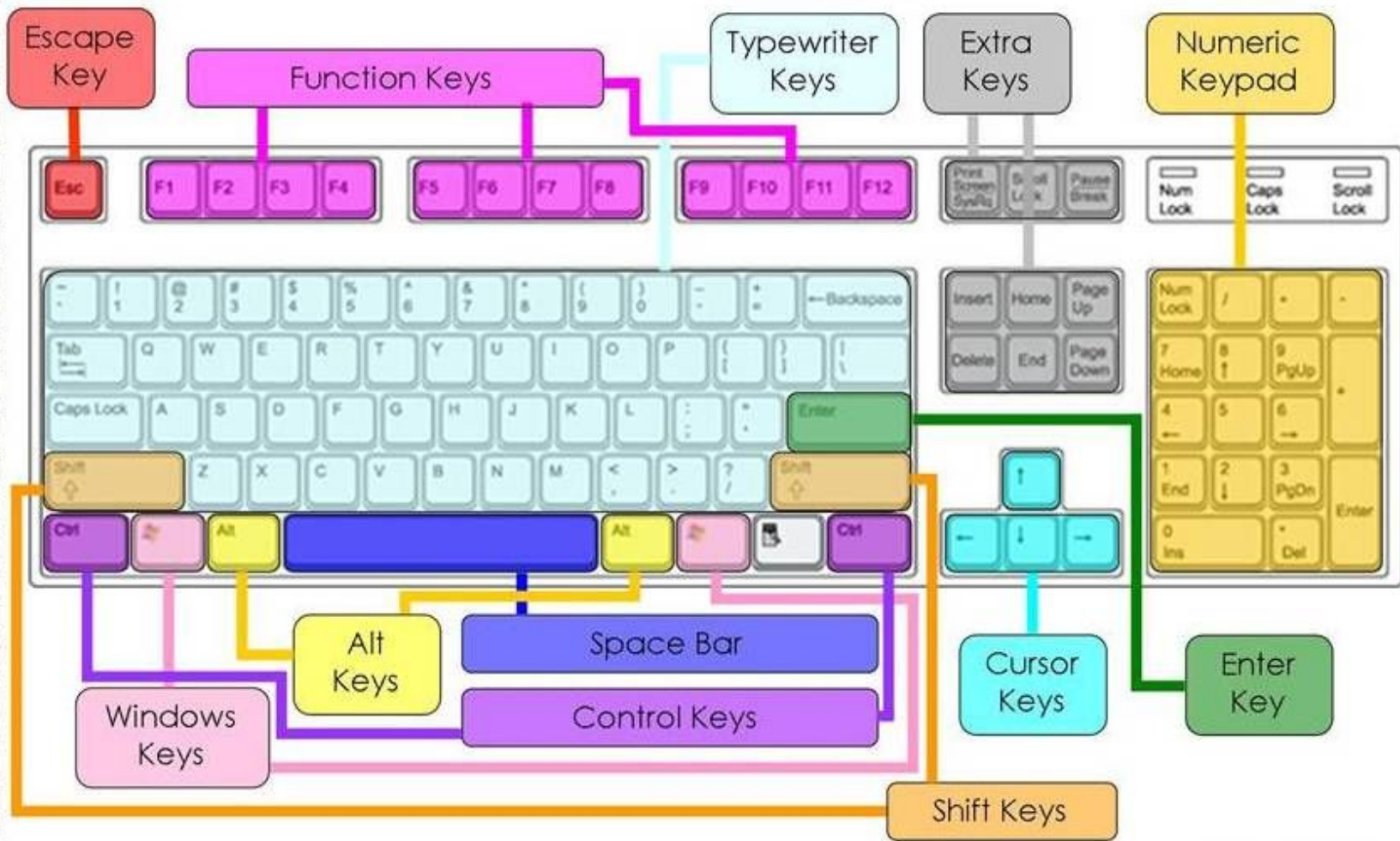
- let you move around the screen without using a mouse.
- Cursor is a mark on the screen indicates where the characters you type will be entered
- Arrow Keys
- Home and End
- PgUp and PgDn



Special Purpose Keys

- Esc (Escape)
- Insert
- Delete
- PrtSc (Print Screen)
- ScrLk (Scroll Lock)
- Pause
- Two special for Microsoft Windows
 - Start
 - Shortcut

Parts of a Keyboard



Internet and Multimedia Controls

- One of the latest trends is the addition of Internet and multimedia controls.
- Microsoft's Internet Keyboard and MultiMedia Keyboard,
 - e.g. you can use the buttons to launch a Web browser, check e-mail and start your most frequently used programs.
- Multimedia buttons
 - control the computer's CD-ROM or DVD drive
 - adjust the speaker volume



How Keyboard Works

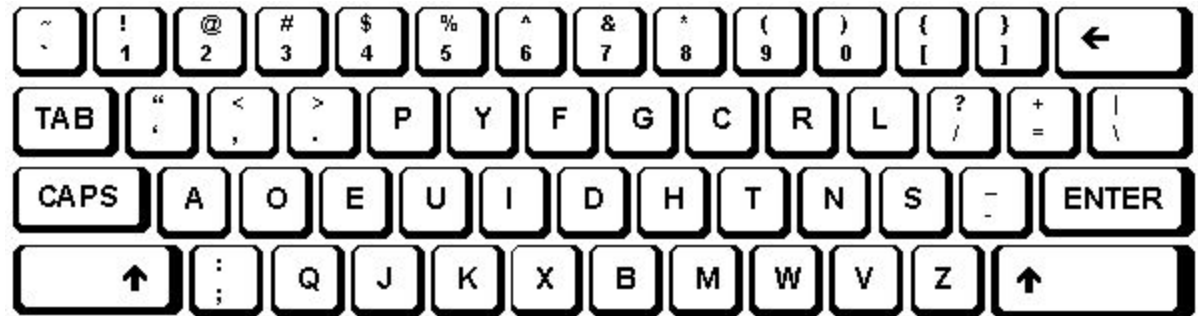
- Key is pressed on keyboard
- Keyboard controller detects a key press
 - Keeps the code in its memory, Keyboard buffer
 - Code represents the key pressed
- Controller notifies the operating system via an interrupt
- Operating system responds the interrupt by the reading the code from buffer
- OS passes the code to CPU

Dvorak Keyboards

- For people who type with one hand or finger
- Reduce the amount of motion required to type common English text
- Increase typing rate
- Reduced errors
- But Qwerty is still popular

Dvorak Keyboards

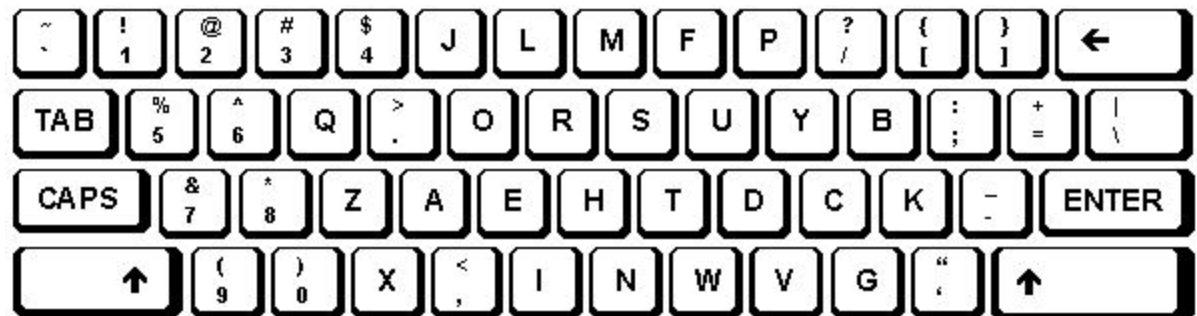
- Both Hands



- Left Hand

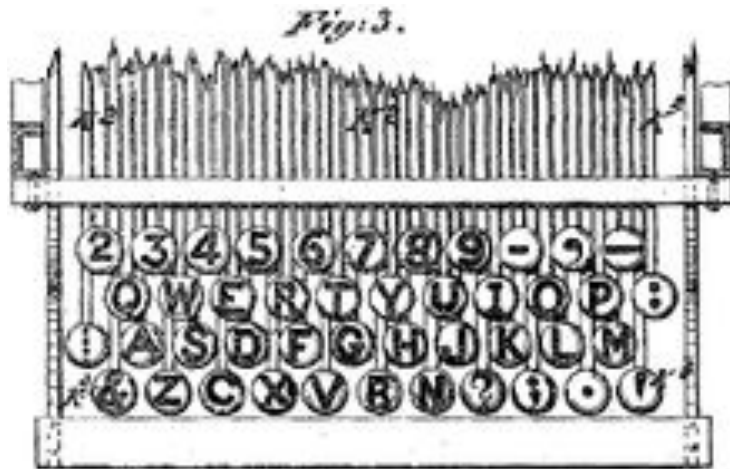
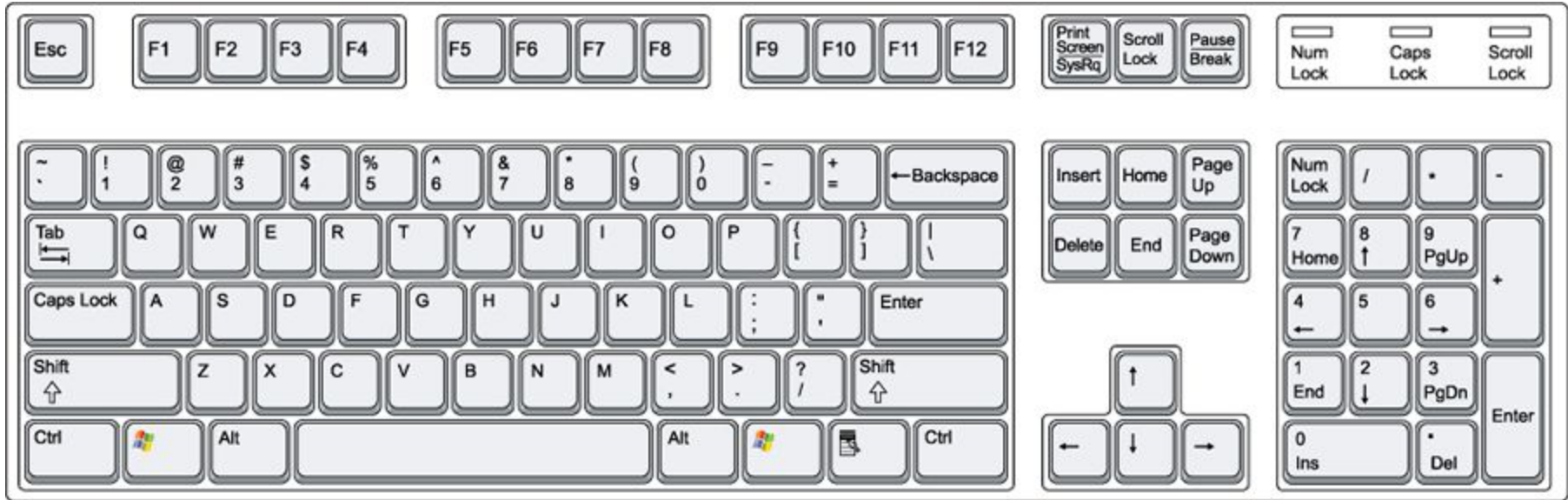


- Right Hand



<http://www.microsoft.com/enable/products/altkeyboard.aspx>

QWERTY Keyboard Layout



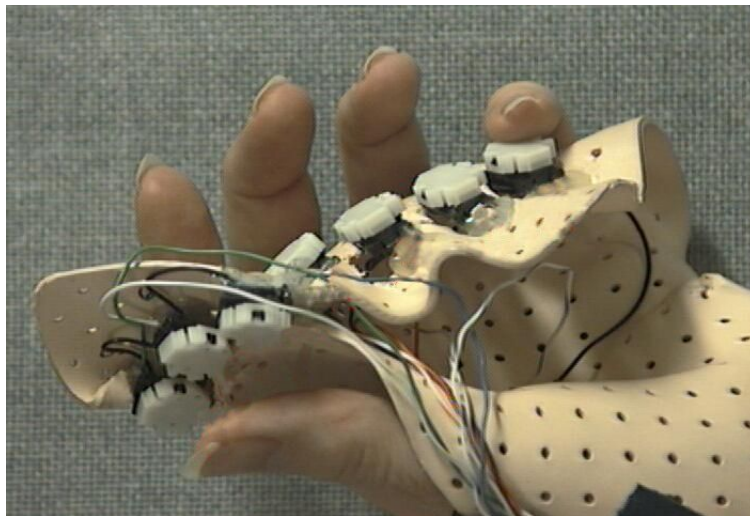
Latham Sholes' 1878 QWERTY keyboard layout

Non-standard layout and special-use

- Chorded keyboard
- Software or virtual keyboard
- Foldable keyboard
- Projection (as by Laser)

Chorded Keyboard

- Associate actions with combinations of key presses
- As many combinations available, chorded keyboards can effectively produce more actions on a board with fewer keys
- Court reporters mostly use them



Software or Virtual Keyboards

- is a software component that allows a user to enter characters.
- usually be operated with multiple input devices,
 - Touch screen,
 - Actual keyboard and
 - Mouse.



Foldable Keyboards

- made of soft plastic or silicone which can be rolled or folded on itself for travel
- When in use, these keyboards can conform to uneven surfaces, and
- are more resistant to liquids than standard keyboards.
- connected to portable devices and smart phones.



Projection Keyboard

- project an image of keys, usually with a laser, onto a flat surface.
- The device then uses a camera or infrared sensor to "watch" where the user's fingers move
- Projection keyboards can simulate a full size keyboard from a very small projector.



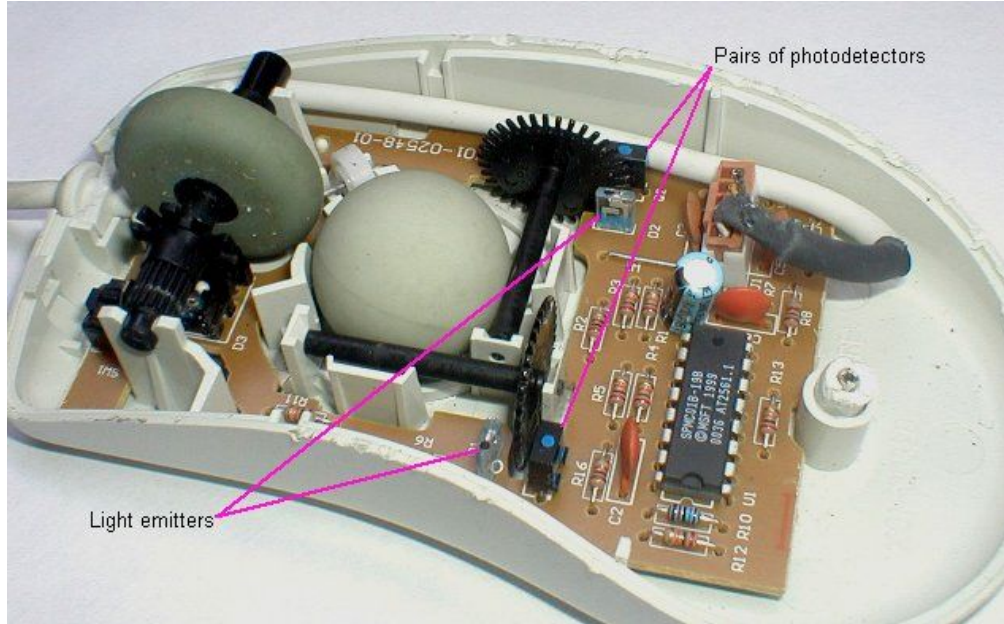
Wireless Keyboard

- provides increased user freedom
- includes a required combination transmitter and receiver unit that attaches to the computer's keyboard port.
- The wireless aspect is achieved either by radio frequency (RF) or by infrared (IR) signals sent and received from both the keyboard and the unit attached to the computer.
- A wireless keyboard may use an industry standard RF, called Bluetooth.

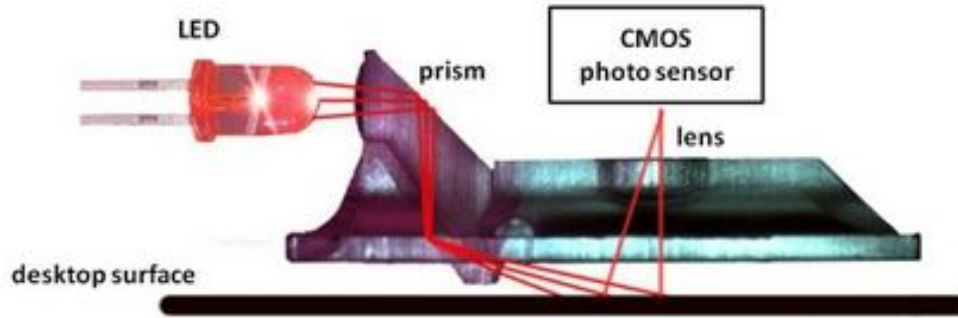
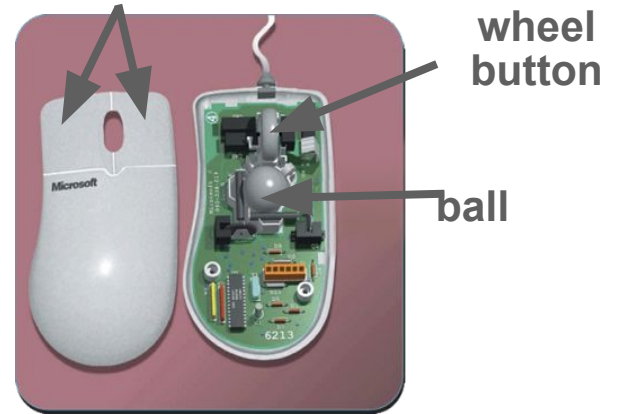
The Mouse

- All modern computers have a variant
- Allows users to select objects
 - Pointer moved by the mouse
- Mechanical mouse
 - Rubber ball determines direction and speed
 - The ball often requires cleaning
- Optical mouse
 - Light shown onto mouse pad
 - Reflection determines speed and direction
 - Requires little maintenance

The Mouse



mouse buttons



Optical Mouse



DELL Vostro 400 optical wired mouse internal view - top and bottom covers

Benefits of Using Mouse

- Pointer positioning is fast
- Menu interaction is easy
- Users can draw electronically

Interacting With a Mouse

- Actions involve pointing to an object
- Clicking selects the object
- Double clicking the object
- Clicking and holding drags the object
- Releasing an object is a drop
- Right clicking activates the shortcut menu
- Modern mice include a scroll wheel

Mouse Button Configuration

- Configured for a right-handed user
 - Can be reconfigured for left handed
- Between 1 and 6 buttons
- Extra buttons are configurable

Cordless Keyboard and Mouse

- Communicate with a receiver attached to a port on the system unit
- Use infra-red (IR) or radio frequency (RF) technology



Variants of the Mouse

- Trackballs
 - Upside down mouse
 - Hand rests on the ball
 - User moves the ball
 - Uses little desk space
 - Mostly two buttons
 - Can be configured for both
 - right-handed and
 - Left-handed use



Track Pads

- Stationary pointing device
- Small plastic rectangle
- Finger moves across the pad
- Pointer moves with the pointer
- Popular on laptops



Track Point

- Track point
 - Little joystick on the keyboard between G, H & B keys
 - Move pointer by moving the joystick
 - Two buttons beneath Spacebar same as mouse
 - Save great of time and effort



Summary

- Standard input devices
- Standard Keyboard
- Five groups of Keys
- How Keyboard works ?
- Dvorak Keyboard
- Non standard layout and Special Use
- The Mouse
- Five Techniques of using Mouse
- Variants of Mouse

Recommended Websites

- https://en.wikipedia.org/wiki/Computer_keyboard
- https://en.wikipedia.org/wiki/Function_Keys
- https://en.wikipedia.org/wiki/Chorded_keyboard
- https://en.wikipedia.org/wiki/Virtual_Keyboard
- https://en.wikipedia.org/wiki/Flexible_electronics
- https://en.wikipedia.org/wiki/Projection_keyboard
- https://en.wikipedia.org/wiki/Keyboard_technology
- https://en.wikipedia.org/wiki/Computer_mouse
- <https://en.wikipedia.org/wiki/Trackball>
- https://en.wikipedia.org/wiki/Optical_mouse
- https://en.wikipedia.org/wiki/Track_point