



COMPUTER SYSTEMS & PROGRAMMING

Computer Keyboard

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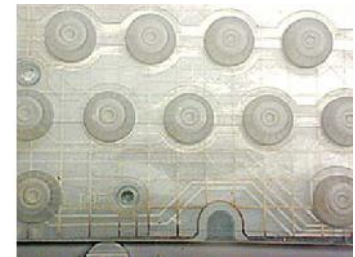
Introduction

- Introduced in 1972 by General Instruments
- Inputs the keystrokes as data/commands for computer
- Key types
 - Typing Keys
 - Num-pad
 - Control
 - Function
- Similar to typewriter layout
- English alphabet Layouts:
 - Vowels (obsolete)
 - HCESAR (obsolete)
 - QWERTY (most popular and widely used)
 - QWERTZ (German type keyboard)
 - AZERTY (still used in few European countries)
 - Dvroak
 - Colemak
- Layouts of other languages:
 - Russian
 - Chinese
 - etc



Inside Keyboard

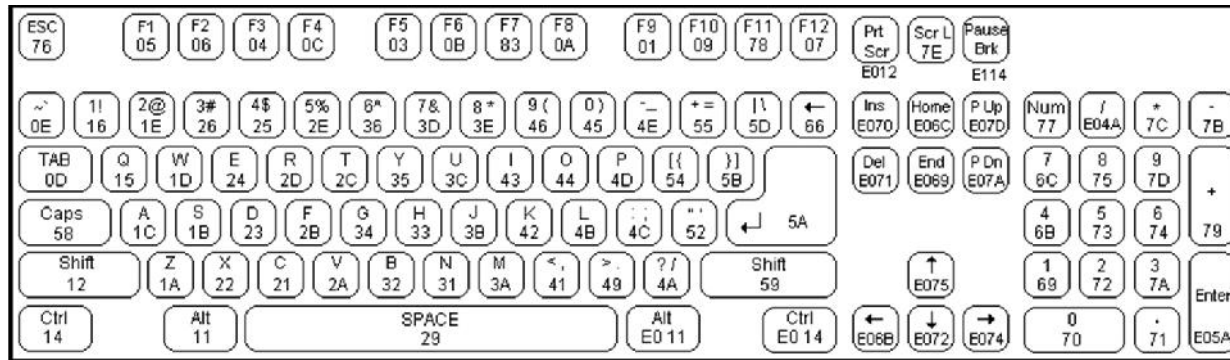
- Keyboard contains a microcontroller
- Which is attached with a matrix of rows and columns printed on plastic sheets
- Two plastic sheets (contains conductive paths) called membrane are separated by an insulation layer
- Insulation layer contains holes at each intersection
- When a key is presses, keycap is pressed down via rubber dome and connects a row with a column
- Complete circuit allows flow of current, called bounce
- Bounce for all key strokes and their combinations is sensed
- Which is generated into scan codes w.r.t key-press using map-table from its ROM
- The scan codes are then mapped into characters/numbers/symbols or into actions with help of keyboard driver





Inside Keyboard

- IBM PC scan code standard



- These scan codes can be manipulated differently with help of keyboard driver
- Keyboard driver can map scan code in different ways, depending upon selection by user
- Keyboard can be interfaced via:
 - PS/2
 - USB
 - Bluetooth
 - Infrared
 - RF
- Laptop keyboards are connected via a ribbon cable with motherboard



Questions

