

LECTURE 15

Digital Logic Families

- Sequential circuits all depend upon the presence of memory.
 - A flip-flop can store one bit of information.
 - A register can store a single “word,” typically 32 or 64 bits.
- Memory allows us to store even larger amounts of data.

Sequential Memories

Shift Registers

Charge Coupled Devices (CCD)

Memory

- Read Only Memory (ROM)
 - ROM
 - PROM
 - EPROM
 - EAROM
- Random Access Memory (RAM)
 - Static RAM (SRAM)
 - Dynamic RAM (DRAM)

Advantages

- Small Size
 - High speed
 - Better Reliability
 - Low Cost
 - Ease of Expansion of memory
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- One flip flop is one bit memory cell.

- You can think of memory as being one big array of data.
 - The address serves as an array index.
 - Each address refers to one word of data.
- You can read or modify the data at any given memory address, just like you can read or modify the contents of an array at any given index.

Picture of Memory

