

Chapter 05: Basic Processing Units ...

Control Unit Design

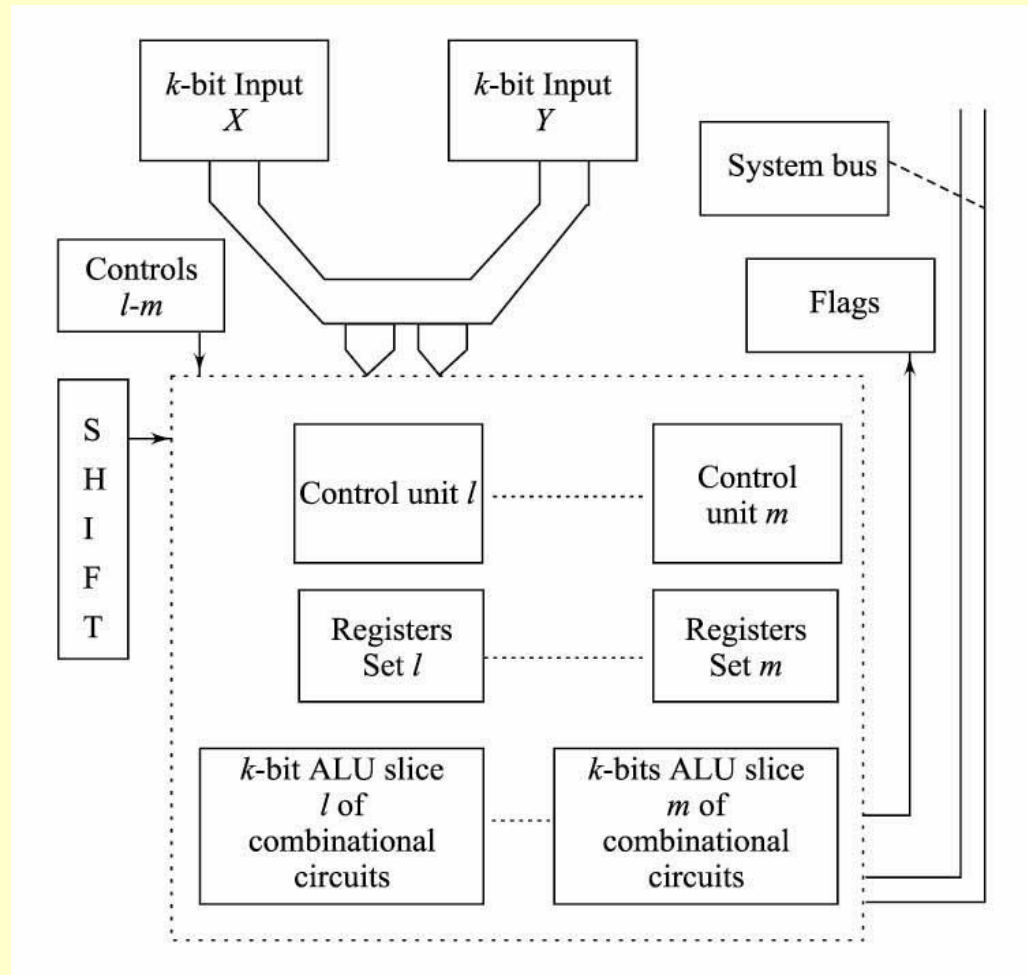
Lesson 19:

Control memories in Bit Slice Processor

Objective

- Using m -Bit Slices of k -bits ALU slices to get $m.k$ -bits parallel operations by an ALU.
- Using serial subunits of k -bits to get $m.k$ -bits operations in m -times the time for one subunit

An ALU using Bit slice processor



16-bit ALU slices used for designing a 64-bit ALU

- Each bit slice uses separate control memory
- Four slices will be needed in parallel if ALU 64-bit operations are to take nearly the same time as 16-bit slice, and four slices will be needed in series if ALU 64-bit operations are to take nearly four times of 16-bit slice

Summary

We Learnt

- Slices used in parallel for ALU operations on large word operands
- Each bit-slice uses separate control memory

End of Lesson 19 on
Control memories in Bit Slice Processor