Computer Architecture and Organization

Chapter- 01: Introduction (Stallings - 8th)

1.1 Organization and Architecture

1.2 Structure and Function

Chapter- 02: Computer Evolution and Performance (Stallings - 8th)

Figure 2.1 Structure of the IAS Computer

Figure 2.2 IAS Memory Formats

Figure 2.3 Expanded Structure of IAS Computer

Figure 2.4 Partial Flowchart of IAS Operation

Chapter-03: A Top-Level View of Computer Function and Interconnection (Stallings - 8th)

Figure 3.3 Basic Instruction Cycle

Figure 3.4 Characteristics of a Hypothetical Machine

Figure 3.5 Example of Program Execution

Figure 3.6 Instruction Cycle State Diagram

Interrupts

Figure 3.7 Program Flow of Control without and with Interrupts

Figure 3.8 Transfer of Control via Interrupts

Figure 3.9 Instruction Cycle with Interrupts

Figure 3.10 Program Timing: Short I/O Wait

Figure 3.11 Program Timing: Long I/O Wait

Figure 3.12 Instruction Cycle State Diagram, with Interrupts

Figure 3.13 Transfer of Control with Multiple Interrupts

Figure 3.14 Example Time Sequence of Multiple Interrupts

3.3 Interconnection Structures

3.4 Bus Interconnection

Figure 3.16 Bus Interconnection Scheme

Multiple-Bus Hierarchies

Figure 3.18 Example Bus Configurations

3.5 PCI

Figure 3.22 Example PCI Configurations

Mezzanine Architecture (page- 111)

Chapter- 03: Processor Basics (Hayes)

3.1.1 Fundamentals

Figure 3.1 Processor-memory communication

User and supervisor modes

Figure 3.2 Overview of CPU behavior.

Accumulator-based CPU

Figure 33 A small accumulator-based CPU

Example 3.1 a multiplication program

Figure 3.5 A program for the multiplication operation

3.1.2 Additional Features

Figure 3.7 A typical CPU with the general register organization

Pipelining

Figure 3.8 Overlapping instructions in a two-stage instruction pipeline

EXAMPLE 3.2 THE ARM6 MICROPROCESSOR

Figure 3.9 Overall organization of the AJIM6

A CISC machine

Figure 3.11 Organization of the 68020

Coprocessors

Figure 3.14 68020-based microcomputer

Data Representaion (Stallings - 9th chapter (8th edition))

*Some topics may be removed or added later Sorry for this confusion