Floating Point Number

Comment: Important - Standardized in the World

I IEEE standard - Professor Kahan

II Floating Point Add and Multiply

CS 152 - SPRING 1996 DISCUSSION LECTURE 5 NOTES Y. CHO

Arithmetic

Comment: Computer Arithmetics, Symbolic

I 2's Compliment Number

II Addition and Subtraction

III Multiply

- Implementation? (Algorithm)

- Final design in the book (Hardware)

- Booths Method

Single Cycle Datapath

Comment: Very important to know.

I Datapath - What CS152 is all about

II Draw your idea of Computer

III Block Diagram

IV Study Lecture notes

V Control & HDL

Technology

Comment: Real issue in hardware implementations

I CMOS technology

- Lecture notes

II Internal Delay - LDD

III Cycle time

IV Problem 4.3 in Quiz #1

ALU

Comment: Should know from Lab 3

I Problem 4.4 in Quiz #1

II Carry Look Ahead

II Carry Select

Cost

Comment: Important for profit reasons

I Equations - Die Equations (Compiled in Notes)

II Look into question from Quiz #1

- Problem 2.11

ISA

Comment: Important to be familiar with MIPS because you will be implementing it in your design

I Questions to examine from Quiz #1

- Problem 3.3 and 3.5

II There are problem in sections 3.9 and 3.10 in book

III Look back homework #2

Common Sense: 5 Basic Comp

I Datapath

II Control

III Memory

IV Input

V Output

Performance

Comment: Important to keep this in mind when evaluating computers

I Speedup - Amdahl's Law (Concept in Quiz #1)

II Compiler Problem - MIPS and CPI

III Equations (In Lecture notes)

IV Frequently missed problems in Quiz - Problem 2.5 (Solution set) and 2.9

Administrative

I Lab #4 due in week of 2/28

- Group Work

II Roving T.A.s Schedules

III Design Review Wednesday 2/28 - 6pm

IV Midterm - Feb 21, 7-10pm

Midterm Outline

I Performance/Cost

II ISA

III Technology

III ALU

IV Arithmetic

V Single Cycle Datapath

VI Multiply, Shift, and FP numbers

CS 152

Discussion Section 102: Friday 12:30-2

Discussion Note #5: February 23, 1996

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Agenda

I Administrative (5 min)

II Midterm Review (rest)