

ECE 271: Chapter 5 Reading Report

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1 Chapter Outline

1.1 Introduction

1.2 Arithmetic Circuits

1. Addition
2. Subtraction
3. Comparators
4. ALU
5. Shifters and Rotators
6. Multiplication
7. Division
8. Further Reading

1.3 Number Systems

1. Fixed-Point Number Systems
2. Floating-Point Number Systems

1.4 Sequential Building Blocks

1. Counters
2. Shift Registers

1.5 Memory Arrays

1. Overview
2. Dynamic Random Access Memory (DRAM)
3. Static Random Access Memory (SRAM)
4. Area and Delay
5. Register Files
6. Read Only Memory
7. Logic Using Memory Arrays
8. Memory HDL

1.6 Logic Arrays

1. Programmable Logic Array
2. Field Programmable Gate Array
3. Array Implementation

1.7 Summary

2 Grey Box Exploration

1. The first blurb is on page , which states
2. The second blurb is on page , which states

3 Figures

Two figures were selected from this chapter for special recognition. Figure was selected because
Figure was selected because

4 Example Problems

See the attached images on the next four pages.

5 Glossary

All definitions were found from the Google search engine, typing "define arithmetic logic unit" for the first item.

1. Arithmetic Logic Unit (ALU)

noun:

- (a) A unit in a computer that carries out arithmetic and logical operations.

2. Comparator

noun:

- (a) a device for comparing a measurable property or thing with a reference or standard.
 - an electronic circuit for comparing two electrical signals.
 - something used as a standard for comparison.

3. Read Only Memory

noun:

- (a) [computing] memory read at high speed but not capable of being changed by program instructions.

4. Array

noun:

- (a) an impressive display or range of a particular type of thing.
- (b) an ordered series or arrangement.
 - an arrangement of troops.
 - [mathematics] an arrangement of quantities or symbols in rows and columns; a matrix.
 - [computing] an indexed set of related elements.
- (c) [literary] elaborate or beautiful clothing.
- (d) [law] a list of jurors empaneled.

verb:

- (a) display or arrange (things) in a particular way.
- (b) dress someone in (the clothes specified).
- (c) [law] empanel (a jury).

5. Random Access

noun:

- (a) [computing] the process of transferring information to or from memory in which every memory location can be accessed directly rather than being accessed in a fixed sequence.

6 Interview Question

See the attached image on the next page.

7 Reflection

8 Questions for Lecture

- 1.
- 2.
- 3.