Read-only Memory

Exercises Digital Design

Solution vs. Hints:
While not every response provided herein constitutes a comprehensive solution, some serve as helpful hints intended to guide you toward discovering the solution independently. In certain instances, only a portion of the solution is presented.

1 ROM - Universal logic function

1.1 Memory sizes

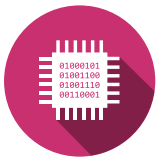
a) 2Byte
b) 1KiB
c) 64KiB

rom/logic-function-01

1.2 Realization of a function with multiplexers

- $y_1 = \overline{c \oplus b \oplus a}$
- y_2 no solution available

rom/logic-function-02

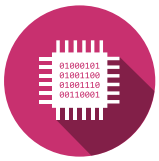


2 ROM - Memory circuit assembly

2.1 Memory allocation table

Threre are 3 memories (2 RAM's and one ROM) With "some" address bits and a multiplexer the right memory is selected.

rom/rom-circuits-01

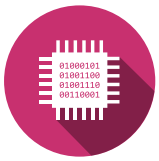


3 ROM - Types of read-only memory

3.1 Intel HEX File CRC calculations

a) **`0x1E`**
b) **`0xFC`**
c) **`0x1A`**
d) **`0x8B`**
e) **`0xD3`**
f) **`0x16`**
g) **`0xFF`**

rom/crc-01



4 ROM - Typical circuits

4.1 ROM-Type

1000%

rom/rom-types-01