User Id: weizhe.goh@digipen.edu

DigiPen

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Vadim Surov

CS100A

Assignment #6

Memory

To demonstrate the ability to understand how memory circuits are constructed using RS and D flop-flops, how to compute maximum addressable memory sizes given word sizes and addressability information and the difference in memory layout for little endian and big endian machines

Read carefully and check all statements below you agree with or that are correct about your assignment submission.

CS

- If something is not clear in this page I ask for help from instructor or TA during submission period.
 - After submission I will get a tentative assessment based on my input, that may be changed later after re-evaluation by grader.
- My answers represent my own individual work.
- Cheating of any kind (copying someone else's work, allowing others to copy your work, collaborating, etc.) will not be tolerated and will be dealt with SEVERELY.





- NOR gates are used to build the RS and D flop-flops. It is also possible to use NAND gates instead.
- On a sheet of paper draw a logic diagrams of a RS flipflop with two inputs (R and S) and two outputs (Q and Q') using NAND gates.
- Write down the truth table of the above circuit.
- Submit the paper at the beginning of the 1st class next week.
- OK

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- On the same sheet of paper draw a logic diagrams of a D flip-flop with two inputs (D and E) and two outputs (Q and Q') also using NAND gates.
- Write down the truth table of the above circuit.
- Submit the paper at the beginning of the 1st class next week.
- OK.

- Determine the memory size according to the following memory configurations. Indicate the memory size in the units of bytes.
 - · Byte-addressable memory, 10 bits used for addressing.

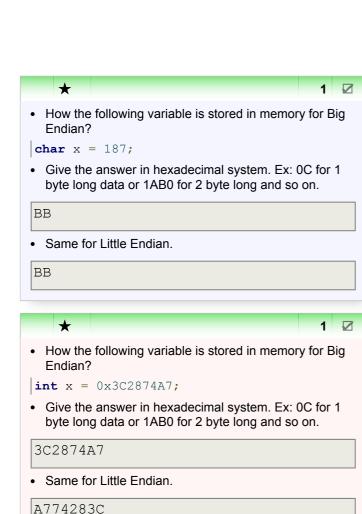
1024

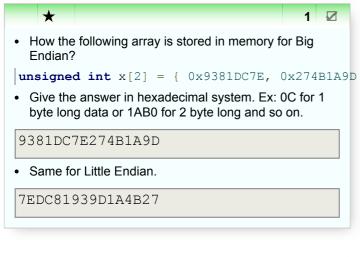
 Word-addressable memory, Word is 2 byte long. 16 bits used for addressing.

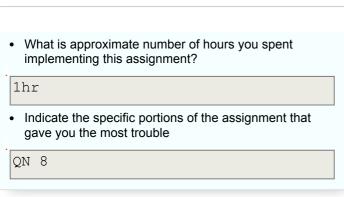
131072

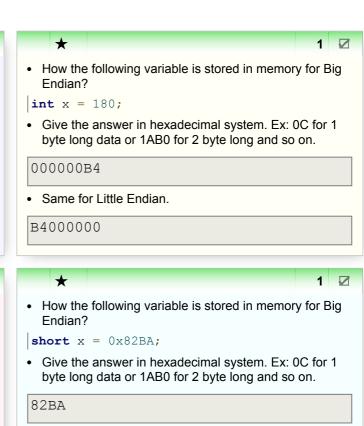
 Word-addressable memory, Word is 4 byte long. 32 bits used for addressing.

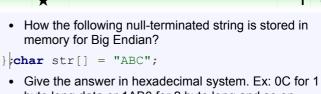
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- byte long data or 1AB0 for 2 byte long and so on.
- Also include the terminate byte 0 into the answer.

Same for Little Endian.

· Same for Little Endian.

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By signing this document you fully agree that all information

Responder sign:

provided therein is complete and true in all respects.

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