This program reads a machine code file and prints out the assembly language commands corresponding to the machine language instructions. The purpose of the program is to make sure you can read and process the input text file, and that you understand how the instructions are converted from their machine-language representation to something that the processor can use (which will be needed in programs 2 and 3).

The machine code is in a text file (MachineCode.txt) and here are its contents:

|  |
| --- |
| 3c011001  34300000  8e080000  20090003  11200004  01094020  2129ffff  ae080000  08100004  2002000a  0000000c |

A reference guide for MIPS instructions and their formats may be found at

<http://www.mrc.uidaho.edu/mrc/people/jff/digital/MIPSir.html>

or in the file InstructionFormat.docx.

Your program only need decode the instructions in the above machine-language file.

If you are successful, the output should look like:

|  |  |
| --- | --- |
| lui | $at, 0x1001 |
| ori | $s0, $at, 0x0000 |
| lw | $t0, 0($s0) |
| addi | $t1, $zero, 3 |
| beq | $t1, $zero, 0x0004 |
| add | $t0, $t0, $t1 |
| addi | $t1, $t1, -1 |
| sw | $t0, 0($s0) |
| j | 0x00400010 |
| addi | $v0, $zero, 10 |
| syscall |  |