Homework 4

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Answer Table:

| Address | Instruction | Op code | Assembly Language Instruction | Address |
| --- | --- | --- | --- | --- |
| 400000 | 04CF1ED8 | 0000 01 | invalid |  |
| 400004 | 8DD3C318 | 1000 11 | load word |  |
| 400008 | 2FFF21B5 | 0010 11 | sltui |  |
| 0040000C | BC812DE2 | 1011 11 | cache |  |
| 400010 | 1F0947BA | 0001 11 | Bgtz | 0100 0000 0100 0111 1011 1010 |
| 400014 | 000000C0 | 0000 00 | invalid |  |
| 400018 | 4981CFED | 0100 10 | invalid |  |
| 0040001C | E3AD303B | 1110 00 | sc |  |
| 400020 | 2B169CF5 | 0010 10 | slti |  |
| 400024 | 0000065E | 0000 00 | invalid |  |
| 400028 | 80EEC363 | 1000 00 | lb |  |
| 0040002C | C633C8C7 | 1100 01 | lwcl |  |
| 400030 | AAB71AD1 | 1010 10 | swl |  |
| 400034 | E7D0207B | 1110 01 | swcl |  |
| 400038 | 38835C41 | 0011 10 | xori |  |
| 0040003C | 3F4F56E3 | 0011 11 | lui |  |
| 400040 | BBF2AF57 | 1011 10 | swr |  |
| 400044 | 4400000E | 0100 01 | invalid |  |
| 400048 | 8977A311 | 1000 10 | lwl |  |
| 0040004C | A531CA42 | 1010 01 | sh |  |
| 400050 | 44000002 | 0100 01 | invalid |  |
| 400054 | C9DE86E7 | 1100 10 | lwc2 |  |
| 400058 | A2538BF2 | 1010 00 | sb |  |
| 0040005C | 96F6A718 | 1001 01 | lhu |  |
| 400060 | C2E3E6F7 | 1100 00 | ll |  |
| 400064 | 44000004 | 0100 01 | invalid |  |
| 400068 | 44000007 | 0100 01 | invalid |  |
| 0040006C | 33A63C92 | 0011 00 | andi |  |
| 400070 | 1105E64B | 0001 00 | Beq | 0100 0000 1110 0110 0100 1011 |
| 400074 | 25F4E382 | 0010 01 | addiu |  |
| 400078 | EB45458D | 1110 10 | swc2 |  |
| 0040007C | 0F637553 | 0000 11 | Jal | 11 0110 0011 0111 0101 0101 0011 |
| 400080 | 44000554 | 0100 01 | addiu |  |
| 400084 | DA2D5F68 | 1101 10 | ldc2 |  |
| 400088 | 0000000C | 0000 00 | invalid |  |
| 0040008C | 8 | 0000 00 | invalid |  |
| 400090 | 2254F148 | 0010 00 | addi |  |
| 400094 | 372F448D | 0011 01 | ori |  |
| 400098 | D59E7E4D | 1101 01 | ldcl |  |
| 0040009C | 86920C3F | 1000 01 | lh |  |
| 004000A0 | 9002DD12 | 1001 00 | lbu |  |
| 004000A4 | 9AFE0421 | 1001 10 | lwr |  |
| 004000A8 | CC6C1F45 | 1100 11 | pref |  |
| 004000AC | FBC2AA28 | 1111 10 | sdc2 |  |
| 004000B0 | ACF8BF92 | 1010 11 | sw |  |
| 004000B4 | 14337793 | 0001 01 | Bne | 0100 0000 0111 0111 1001 0011 |
| 004000B8 | 1921A0BF | 0001 10 | Blez | 0100 0000 1010 0000 1011 1111 |
| 004000BC | 0829E432 | 0000 10 | J | 00 0010 1001 1110 0100 0011 0010 |
| 004000C0 | 24 | 0000 00 | invalid |  |
| 004000C4 | F504050E | 1111 01 | sdcl |  |

Instructions:

Convert the following 32-bit values to assembly code. If the instruction is a branch instruction, determine the address of the target using a starting of the file as 0x00400000. If the instruction is a jump type, determine the address of the target instruction. Identify any illegal or improperly formatted instruction.

|  |  |  |
| --- | --- | --- |
| Address | Instruction | Assembly Language Instruction |
| 00400000 | 04CF1ED8 |  |
| 00400004 | 8DD3C318 |  |
| 00400008 | 2FFF21B5 |  |
| 0040000C | BC812DE2 |  |
| 00400010 | 1F0947BA |  |
| 00400014 | 000000C0 |  |
| 00400018 | 4981CFED |  |
| 0040001C | E3AD303B |  |
| 00400020 | 2B169CF5 |  |
| 00400024 | 0000065E |  |
| 00400028 | 80EEC363 |  |
| 0040002C | C633C8C7 |  |
| 00400030 | AAB71AD1 |  |
| 00400034 | E7D0207B |  |
| 00400038 | 38835C41 |  |
| 0040003C | 3F4F56E3 |  |
| 00400040 | BBF2AF57 |  |
| 00400044 | 4400000E |  |
| 00400048 | 8977A311 |  |
| 0040004C | A531CA42 |  |
| 00400050 | 44000002 |  |
| 00400054 | C9DE86E7 |  |
| 00400058 | A2538BF2 |  |
| 0040005C | 96F6A718 |  |
| 00400060 | C2E3E6F7 |  |
| 00400064 | 44000004 |  |
| 00400068 | 44000007 |  |
| 0040006C | 33A63C92 |  |
| 00400070 | 1105E64B |  |
| 00400074 | 25F4E382 |  |
| 00400078 | EB45458D |  |
| 0040007C | 0F637553 |  |
| 00400080 | 44000554 |  |
| 00400084 | DA2D5F68 |  |
| 00400088 | 0000000C |  |
| 0040008C | 00000008 |  |
| 00400090 | 2254F148 |  |
| 00400094 | 372F448D |  |
| 00400098 | D59E7E4D |  |
| 0040009C | 86920C3F |  |
| 004000A0 | 9002DD12 |  |
| 004000A4 | 9AFE0421 |  |
| 004000A8 | CC6C1F45 |  |
| 004000AC | FBC2AA28 |  |
| 004000B0 | ACF8BF92 |  |
| 004000B4 | 14337793 |  |
| 004000B8 | 1921A0BF |  |
| 004000BC | 0829E432 |  |
| 004000C0 | 00000024 |  |
| 004000C4 | F504050E |  |