|  |  |  |  |
| --- | --- | --- | --- |
| **Assembly**  **Code** | **Args** | **Format** | **Opcode/Funct Code** |
| lw | $rt, imm($rs) | Opcode, rs, rt, imm | 100011/none |
| sw | $rt, imm($rs) | Opcode, rs, rt, imm | 101011/none |
| add | $rd, $rs, $rt | Opcode, rs, rt, rd, shamt, funct | 000000/100000 |
| sub | $rd, $rs, $rt | Opcode, rs, rt, rd, shamt, funct | 000000/100010 |
| and | $rd, $rs, $rt | Opcode, rs, rt, rd, shamt, funct | 000000/100100 |
| or | $rd, $rs, $rt | Opcode, rs, rt, rd, shamt, funct | 000000/100101 |
| j | Address | Opcode,address | 000010 |

**Given the following instructions, convert them to binary(below the MIPs) and then XXX to the right. Then write the hex values of any data memory locations and registers that have changed.**

|  |  |
| --- | --- |
|  |  |
|  | |
|  |  |
|  | |

**Registers!**

|  |  |  |  |
| --- | --- | --- | --- |
| **$0 0** | **$1 7** | **$2 cafe** | **$3 bee** |
| **$4** | **$5** | **$6** | **$7** |
| **$8** | **$9** | **$10** | **$11** |
| **$12** | **$13** | **$14** | **$15** |

**DATA MEMORY!**

|  |  |  |  |
| --- | --- | --- | --- |
| **M[0]** | **M[1]** | **M[2]** | **M[3]** |
| **M[4] 7** | **M[5] 8** | **M[6] 9** | **M[7] A** |
| **M[8]** | **M[9]** | **M[10]** | **M[11]** |
| **M[12] 4** | **M[13] 5** | **M[14] 6** | **M[15] 7** |