TALLER INSTRUCCIONES LENGUAJE DE ALTO NIVEL A LENGUAJE DE BAJO NIVEL

EJERCICIO

```
int test ( int a, int b, int c ) {
        return a + b - c;
}
int main () {
   int a = -2897415;
   int b = 345;
   int c;
   int y = 845963;
   c = y - 4150000
   y = a - b + c;
   if ( y == 4587956 )
        c = y - 3456879;
   else
        int z = 25005478 + y;
   return ( 2564 + y – b) + test ( a, b, c);
}
```

LENGUAJE ENSAMBLADOR:

Definición de registros
a = %i0, b = %i1, c = %i2, y = %L0, z = %L1, return = %O1

TEST:
0X0000 ADD %i0, %i1, %O1
0X0004 JMPL %O7, 8, %g0
0X0008 SUB %O1, %i2, %O1

MAIN:
0X000C SETHI -2830, %i0 /* -2897415 */
0X0010 OR %i0, 505, %i0
0X0014 MOV 345, %i1
0X0018 MOV 0, %i2
0X001C SETHI 826, %L0 /* 845963 */
0X0020 OR %L0, 139, %L0
0X0024 SETHI 4052, %L2 /* 4150000 */
0X0028 OR %L2, 752, %L2
0X002C SUB %L0, %L2, %i2
0X0030 SUB %i0, %i1, %L6
0X0034 ADD %L6, %i2, %L0
0X0038 SETHI 4480, %L3 /* 4587956 */
0X003C OR %L3, 436, %L3
0X0040 CMP %L0, %L3
0X0044 BNE a, ELSE
0X0048 SETHI 3375, %L4 /* 3456879 */
0X004C OR %L4, 879, %L4
0X0050 SUB %L0, %L4, %i2
0X0054 BA a RETURN
ELSE
0X0058 SETHI 24419, %L5 /* 25005478 */
0X005C OR %L5, 422, %L5
0X0060 ADD %L5, %L0, %L1
RETURN
0X0064 ADD %L0, 2564, %L6
0X0068 CALL TEST
0X006C SUB %L6, %i1, %L6
0X0070 ADD %L6, %O1, %O1

LENGUAJE DE MÁQUINA:

Direcciones	op	rd	op3	rs1	i	unused(zero)	rs2
0X0000	10	01001	000000	11000	0	00000000	11001
	op	**rd**	**op3**	**rs1**	**i**	**imm13**	
0X0004	10	00000	111000	01111	1	0000000001000	
	op	**rd**	**op3**	**rs1**	**i**	**unused(zero)**	**rs2**
0X0008	10	01001	000100	01001	0	00000000	11010
	op	**rd**	**op2**	**imm22**			
0X000C	00	11000	100	1111111111010011110010			
	op	**rd**	**op3**	**rs1**	**i**	**imm13**	
0X0010	10	11000	000010	11000	1	0000111111001	
0X0014	10	11001	000010	00000	1	0000101011001	
0X0018	10	11010	000010	00000	1	0000000000000	
	op	**rd**	**op2**	**imm22**			
0X001C	00	10000	100	0000000000001100111010			
	op	**rd**	**op3**	**rs1**	**i**	**imm13**	
0X0020	10	10000	000010	10000	1	0000010001011	
	op	**rd**	**op2**	**imm22**			
0X0024	00	10010	100	0000000000111111010100			
	op	**rd**	**op3**	**rs1**	**i**	**imm13**	
0X0028	10	10010	000010	10010	1	0001011110000	
	op	**rd**	**op3**	**rs1**	**i**	**unused(zero)**	**rs2**
0X002C	10	11010	000100	10000	0	00000000	10010
0X0030	10	10110	000100	11000	0	00000000	11001
0X0034	10	10000	000000	10110	0	00000000	11010
	op	**rd**	**op2**	**imm22**			
0X0038	00	10011	100	0000000001000110000000			
	op	**rd**	**op3**	**rs1**	**i**	**imm13**	
0X003C	10	10011	000010	10011	1	0000110110100	
	op	**rd**	**op3**	**rs1**	**i**	**unused(zero)**	**rs2**
0X0040	10	00000	010100	10000	0	00000000	10011
	op	**a**	**cond**	**op2**	**disp22**		
0X0044	00	1	1001	010	0000000000000000000101		
	op	**rd**	**op2**	**imm22**			
0X0048	00	10100	100	0000000000110100101111			
	op	**rd**	**op3**	**rs1**	**i**	**imm13**	
0X004C	10	10100	000010	10100	1	0001101101111	
	op	**rd**	**op3**	**rs1**	**i**	**unused(zero)**	**rs2**
0X0050	10	11010	000100	10000	0	00000000	10100
	op	**a**	**cond**	**op2**	**disp22**		
0X0054	00	1	1000	010	0000000000000000000100		
	op	**rd**	**op2**	**imm22**			
0X0058	00	10101	100	0000000101111101100011			
	op	**rd**	**op3**	**rs1**	**i**	**imm13**	
0X005C	10	10101	000010	10101	1	0000110100110	
	op	**rd**	**op3**	**rs1**	**i**	**unused(zero)**	**rs2**
0X0060	10	10001	000000	10101	0	00000000	10000
	op	**rd**	**op3**	**rs1**	**i**	**imm13**	
0X0064	10	10110	000000	10000	1	0101000000100	
	op	**dis30**					
0X0068	01	11111111111111111111111100110					
	op	**rd**	**op3**	**rs1**	**i**	**unused(zero)**	**rs2**
0X006C	10	10110	000100	10110	0	00000000	11001
0X0070	10	01001	000000	10110	0	00000000	01001