

**Language Description Table**  
(Brookshear's Appendix C)

16 registers [0..F] 256 memory cells [00..FF] (8 bits each)  
16-bit instructions (4+12) R, S, T = register numbers X, Y = values or addresses

Op-code	Operand	Description
1	RXY	LOAD the register R with the bit pattern found in the memory cell whose address is XY. <i>Example: 14A3</i> would cause the contents of the memory cell located at address A3 to be placed in register 4.
2	RXY	LOAD the register R with the bit pattern XY. <i>Example: 20A3</i> would cause the value A3 to be placed in register 0.
3	RXY	STORE the bit pattern found in register R in the memory cell whose address is XY. <i>Example: 35B1</i> would cause the contents of register 5 to be placed in the memory cell whose address is B1.
4	0RS	MOVE the bit pattern found in register R to register S. <i>Example: 40A4</i> would cause the contents of register A to be copied into register 4.
5	RST	ADD the bit patterns in registers S and T as though they were two's complement representations and leave the result in register R. <i>Example: 5726</i> would cause the binary values in registers 2 and 6 to be added and the sum placed in register 7.
6	RST	ADD the bit patterns in registers S and T as though they represented values in floating-point notation and leave the floating-point result in register R. <i>Example: 634E</i> would cause the values in registers 4 and E to be added as floating-point values and the result to be placed in register 3.
7	RST	OR the bit patterns in registers S and T and place the result in register R. <i>Example: 7CB4</i> would cause the result of OR-ing the contents of registers B and 4 to be placed in register C.
8	RST	AND the bit patterns in registers S and T and place the result in register R. <i>Example: 8045</i> would cause the result of AND-ing the contents of registers 4 and 5 to be placed in register 0.
9	RST	XOR the bit patterns in registers S and T and place the result in register R. <i>Example: 95F3</i> would cause the result of XOR-ing the contents of registers F and 3 to be placed in register 5.
A	R0X	ROTATE the bit pattern in register R one bit to the right X times. Each time place the bit that started at the low-order end at the high-order end. <i>Example: A403</i> would cause the contents of register 4 to be rotated 3 bits to the right in a circular fashion.
B	RXY	JUMP to the instruction located in the memory cell at address XY if the bit pattern in register R is equal to the bit pattern in register number 0. Otherwise, continue with the normal sequence of execution. (The jump is implemented by copying XY into the program counter during the execute phase.) <i>Example: B43C</i> would first compare the contents of register 4 with the contents of register 0. If the two were equal, the pattern 3C would be placed in the program counter so that the next instruction executed would be the one located at that memory address. Otherwise, nothing would be done and program execution would continue in its normal sequence.
C	000	HALT execution. <i>Example: C000</i> would cause program execution to stop.