**Code Quick Reference Page**

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| **INSTRUCTION** | **DESCRIPTION** |
| HLT | Terminate program execution |
|  |  |
| RD     dst | Read an integer value from the keyboard into dst |
| RDF dst | Read a float value from the keyboard into dst |
| RDS dst | Read a string value from the keyboard into dst. Quotations not needed. |
| WRT    src | Write a value in src to the screen |
| WRTS | Performs:  POP A  WRT A |
| WRTLN src | Write a value in src with a new line appended to the screen. |
| WRTLNS src | Performs: POP A WRTLN A |
|  |  |
| MOV    src   dst | Performs:  dst  <-   src |
| NEG    src   dst | Performs:  dst  <-  -src (Integer) |
| ADD    src1  src2  dst | Performs:  dst  <-  src1 + src2 (Integer) |
| SUB    src1  src2  dst | Performs:  dst  <-  src1 - src2 (Integer) |
| MUL    src1  src2  dst | Performs:  dst  <-  src1 \* src2 (Integer) |
| DIV    src1  src2  dst | Performs:  dst  <-  src1 / src2 (Integer) |
| MOD src1 src2 dst | Performs: dst <- src1 % src2 (Integer) |
|  |  |
| NEGF   src   dst | Performs:  dst  <-  -src (Float or Fixed) |
| ADDF   src1  src2  dst | Performs:  dst  <-  src1 + src2 (Float or Fixed) |
| SUBF   src1  src2  dst | Performs:  dst  <-  src1 - src2 (Float or Fixed) |
| MULF   src1  src2  dst | Performs:  dst  <-  src1 \* src2 (Float or Fixed) |
| DIVF   src1  src2  dst | Performs:  dst  <-  src1 / src2 (Float or Fixed) |
|  |  |
| PUSH   src | Push src onto the data stack |
| POP    dst | Pop the stack top into dst |
| NEGS | Performs:  POP A  PUSH –A (Integer) |
| ADDS | Performs:  POP A  POP B  PUSH B + A (Integer) |
| SUBS | Performs:  POP A  POP B  PUSH B – A (Integer) |
| MULS | Performs:  POP A  POP B  PUSH B \* A (Integer) |
| DIVS | Performs:  POP A  POP B  PUSH B / A (Integer) |
| MODS | Performs: POP A POP B PUSH B % A (Integer) |
|  |  |
| NEGSF | Performs:  POP A  PUSH –A (Float or Fixed) |
| ADDSF | Performs:  POP A  POP B  PUSH B + A (Float or Fixed) |
| SUBSF | Performs:  POP A  POP B  PUSH B – A (Float or Fixed) |
| MULSF | Performs:  POP A  POP B  PUSH B \* A (Float or Fixed) |
| DIVSF | Performs:  POP A  POP B  PUSH B / A (Float or Fixed) |
|  |  |
| CASTSI | Performs: POP A PUSH (float)A |
| CASTSF | Performs: POP A PUSH (int)A |
|  |  |
| Ln: | Drop a label at the current line |
|  |  |
| ANDS | Performs POP A POP B PUSH B and A |
| ORS | Performs POP A POP B PUSH B or A |
| NOTS | Performs POP A PUSH not A |
|  |  |
| CMPEQS | Performs POP A POP B PUSH B = A (Integer) |
| CMPGES | Performs POP A POP B PUSH B >= A (Integer) |
| CMPGTS | Performs POP A POP B PUSH B > A (Integer) |
| CMPLES | Performs POP A POP B PUSH B <= A (Integer) |
| CMPLTS | Performs POP A POP B PUSH B < A (Integer) |
| CMPNES | Performs POP A POP B PUSH B <> A (Integer) |
|  |  |
| CMPEQSF | Performs POP A POP B PUSH B = A (Float or Fixed) |
| CMPGESF | Performs POP A POP B PUSH B >= A (Float or Fixed) |
| CMPGTSF | Performs POP A POP B PUSH B > A (Float or Fixed) |
| CMPLESF | Performs POP A POP B PUSH B <= A (Float or Fixed) |
| CMPLTSF | Performs POP A POP B PUSH B < A (Float or Fixed) |
| CMPNESF | Performs POP A POP B PUSH B <> A (Float or Fixed) |
|  |  |
| BRTS Ln | Performs POP A BEQ A #1 Ln |
| BRFS Ln | Performs POP A BEQ A #0 Ln |
|  |  |
| BR    Ln | Branch to label n |
| BEQ    src1  src2  Ln | Branch to label n if src1 =  src2 (Integer) |
| BGE    src1  src2  Ln | Branch to label n if src1 >= src2 (Integer) |
| BGT    src1  src2  Ln | Branch to label n if src1 >  src2 (Integer) |
| BLE    src1  src2  Ln | Branch to label n if src1 <= src2 (Integer) |
| BLT    src1  src2  Ln | Branch to label n if src1 <  src2 (Integer) |
| BNE    src1  src2  Ln | Branch to label n if src1 <> src2 (Integer) |
|  |  |
| BEQF   src1  src2  Ln | Branch to label n if src1 =  src2 (Float or Fixed) |
| BGEF   src1  src2  Ln | Branch to label n if src1 >= src2 (Float or Fixed) |
| BGTF   src1  src2  Ln | Branch to label n if src1 >  src2 (Float or Fixed) |
| BLEF   src1  src2  Ln | Branch to label n if src1 <= src2 (Float or Fixed) |
| BLTF   src1  src2  Ln | Branch to label n if src1 <  src2 (Float or Fixed) |
| BNEF   src1  src2  Ln | Branch to label n if src1 <> src2 (Float or Fixed) |
|  |  |
| CALL  Ln | Performs:  PUSH PC  BR Ln |
| RET | Performs:  POP  PC |
|  |  |
| PRTS | Prints out stack addresses and values – Doesn’t affect state of machine. |
| PRTR | Prints out registers – Doesn’t affect state of machine. |