

XA80 EXECUTION STACK

THE EXECUTION STACK TRACKS THE EXECUTION OF THE FOLLOWING:

- * IF / ELSE / ENDIF
- * MACRO EXPANSION
- * WHILE / ENDW

IT DOESN'T TRACK MACRO DEFINITION, THAT'S A DIFFERENT SCENARIO AS THERE CAN ONLY BE ONE MACRO DEFINITION AT A TIME

STACK ELEMENTS WILL NEED TO CONTAIN:

| ITEM | MACRO | IF | WHILE | REPEAT |
|---------------------------|-------|----|-------|--------|
| FILENAME | | | ✓ | ✓ |
| LINE NUMBER | | | ✓ | ✓ |
| IF MODE (IF OR ELSE BLK)* | | ✓ | | |
| IF PARENT VALUE* | | ✓ | | |
| IF VALUE* | | ✓ | | |
| REPEAT REMAINING | | | | ✓ |
| WHILE CONDITION* | | | ✓ | |
| ELSE DONE | | ✓ | | |

* THESE CAN BE COMBINED INTO A "GENERATE CODE" OPTION

WHILE OPERATION

INITIAL COMMAND, E.S.

WHILE $K < 10$

HAVE TO ASSEMBLE AND CHECK IF TRUE OR FALSE. MARK "WHILE-IS-ACTIVE" ACCORDINGLY.

POT THIS ON THE STACK OR AMEND IF ALREADY THERE

KEEP GOING UNTIL ENDW IS FOUND. CHECK THAT TOS IS "WHILE."

IF WHILE-IS-ACTIVE GO BACK TO CHECKING THE ORIGINAL WHILE LINE. IF IT MATCHES TOS FILENAME AND LINE, REASSES AND AMEND TOS ACCORDINGLY.

IF WE GOT TO ENDW AND WHILE-IS-ACTIVE IS FALSE, THEN POP THE WHILE COMMAND OFF THE STACK

IF / ELSE / ENDIF OPERATION

MACRO EXPANSION OPERATION

REPEAT / ENDR OPERATION

INITIAL COMMAND, E.S.

REPEAT 4

POT THIS ON THE STACK. OR AMEND IF
ALREADY THERE BY DECREMENTING

IF REPEAT COUNT IS ZERO, DONT PRODUCE
ANY CODE

KEEP GOING UNTIL ENDR IS FOUND

CHECK TOS IS "REPEAT", IF NOT ERROR

IF COUNT \neq 0 GO BACK TO START