The objectives of the design of the basic/extended basic interface are (1) to keep extended basic as small as possible and (2) to minimize the problems in maintaining compatibility between the two basics. Both of these imply that the two should share code as much as possible. One way to do this is to keep a core part of the basic interpreter in ram, where it can be modified by the extended basic interpreter start-up sequence. This core part is the set of dispatch tables that associates with each language token a subprogram that implements that function. The basic interpreter will contain a set of these in rom, but will copy them to ram and use the ram copy. Extended basic will modify certain entries in this ram table, to point to added or extended functions.

In order to maximize the number of routines that may be shared, the use of memory and data structures by the two basics should be identical. Thus, even though standard basic will not support integer variables or basic language subprograms, the symbol table structure should have codes assigned to them, so that there will be no difficulty in adding them for extended basic.

.1 The statement dispatch table

Tokens >80 through >AF are assigned to "verbs" or tokens that may begin basic statements. Some of them, such as SUBEND, are not defined in standard basic and will be filled with a null value. Extended basic will supply a non-null value. Others, like ACCEPT, are present in both basics, but work differently, so extended basic will overwrite the standard pointer. We must avoid the expedient of having extended basic simply overwrite the entire table, since this would imply hard coding of addresses in the standard interpreter (the ones to be left unchanged) into the extended interpreter.

				standard	extended
*	EQU	>80	SPARE		
ELSE$	EQU	>81	"ELSE"	X	unchanged
SSEP$	EQU	>82	":"	X	unchanged
TREM$	EQU	>83	"!"		X
IF$	EQU	>84	"IF"	X	unchanged
GO$	EQU	>85	"GO"	X	unchanged
GOTO$	EQU	>86	"GOTO"	X	unchanged
GOSUB$	EQU	>87	"GOSUB"	X	unchanged
RETUR$	EQU	>88	"RETURN"	X	X
DEF$	EQU	>89	"DEF"	X	unchanged
DIM$	EQU	>8A	"DIM"	X	unchanged???
END$	EQU	>8B	"END"	X	unchanged

```
FOR$    EQU   >BC          "FOR"          X          unchanged
LET$    EQU   >BD          "LET"          X          unchanged
BREAK$  EQU   >BE          "BREAK"        X          unchanged
UNBRE$  EQU   >BF          "UNBREAK"      X          unchanged
TRACE$  EQU   >90          "TRACE"        X          unchanged
UNTRA$  EQU   >91          "UNTRACE"      X          unchanged
INPUT$  EQU   >92          "INPUT"        X          unchanged
DATA$   EQU   >93          "DATA"         X          unchanged
RESTO$  EQU   >94          "RESTORE"      X          unchanged
RANDO$  EQU   >95          "RANDOMIZE"    X          unchanged
NEXT$   EQU   >96          "NEXT"         X          unchanged
READ$   EQU   >97          "READ"         X          unchanged
STOP$   EQU   >98          "STOP"         X          unchanged
DELET$  EQU   >99          "DELETE"       X          unchanged
REM$    EQU   >9A          "REM"          X          unchanged
ON$     EQU   >9B          "ON"           X            X
PRINT$  EQU   >9C          "PRINT"        X            X
CALL$   EQU   >9D          "CALL"         X            X
OPTIO$  EQU   >9E          "OPTION"       X          unchanged
OPEN$   EQU   >9F          "OPEN"         X          unchanged
CLOSE$  EQU   >A0          "CLOSE"        X          unchanged
SUB$    EQU   >A1          "SUB"                       X
DISPL$  EQU   >A2          "DISPLAY"      X            X
IMAGE$  EQU   >A3          "IMAGE"                     X
ACCEP$  EQU   >A4          "ACCEPT"       X            X
ERROR$  EQU   >A5          "ERROR"                     X
WARN$   EQU   >A6          "WARNING"                   X
SUBXT$  EQU   >A7          "SUBEXIT"                   X
SUBND$  EQU   >A8          "SUBEND"                    X
RUN$    EQU   >A9          "RUN"          ???          X
DO$     EQU   >AA          "DO"
LOOP$   EQU   >AB          "LOOP"
EXIT$   EQU   >AC          "EXIT"
*       EQU   >AD
*       EQU   >AE          "INTEGER"
*       EQU   >AF          "REAL"
THEN$   EQU   >B0          "THEN"         X          unchanged
TO$     EQU   >B1          "TO"           X          unchanged??
STEP$   EQU   >B2          "STEP"         X          unchanged??
COMMA$  EQU   >B3          ","            X          unchanged
SEMIC$  EQU   >B4          ";"            X          unchanged
COLON$  EQU   >B5          ":"            X          unchanged
RPAR$   EQU   >B6          ")"            X          unchanged
LPAR$   EQU   >B7          "("            X          unchanged
CONC$   EQU   >B8          "&"            X          unchanged
*       EQU   >B9          SPARE
OR$     EQU   >BA          "OR"                        X
AND$    EQU   >BB          "AND"                       X
XOR$    EQU   >BC          "XOR"                       X
NOT$    EQU   >BD          "NOT"                       X
```

```
EQUAL$ EQU  >BE          "="              X          unchanged??
LESS$  EQU  >BF          "<"              X          unchanged??
GREAT$ EQU  >C0          ">"              X          unchanged??
PLUS$  EQU  >C1          "+"              X          unchanged??
MINUS$ EQU  >C2          "-"              X          unchanged??
MULT$  EQU  >C3          "*"              X          unchanged??
DIVI$  EQU  >C4          "/"              X          unchanged??
CIRCU$ EQU  >C5          " "              X          unchanged??
*      EQU  >C6          SPARE
STRIN$ EQU  >C7          QUOTED STRING    X          unchanged
UNQST$ EQU  >C8          UNQUT.STRING     X          unchanged
NUM$   EQU  UNQST$       ALSO NUMERICAL STRING
                                          X          unchanged
LN$    EQU  >C9          LINE NUMBER CONSTANT
                                          X          unchanged
EOF$   EQU  >CA          "EOF"            X          unchanged
ZBS$   EQU  >CB          "ABS"            X          unchanged
ATN$   EQU  >CC          "ATN"            X          unchanged
COS$   EQU  >CD          "COS"            X          unchanged
EXP$$  EQU  >CE          "EXP"            X          unchanged
INT$   EQU  >CF          "INT"            X          unchanged
LOG$   EQU  >D0          "LOG"            X          unchanged
SGN$$  EQU  >D1          "SGN"            X          unchanged
SIN$   EQU  >D2          "SIN"            X          unchanged
SQR$   EQU  >D3          "SQR"            X          unchanged
TAN$   EQU  >D4          "TAN"            X          unchanged
LEN$   EQU  >D5          "LEN"            X          unchanged
CHR$$  EQU  >D6          "CHR$"           X          unchanged
RND$   EQU  >D7          "RND"            X          unchanged
SEG$$  EQU  >D8          "SEG$"           X          unchanged
POS$   EQU  >D9          "POS"            X          unchanged
VAL    EQU  >DA          "VAL"            X          unchanged
STR$$  EQU  >DB          "STR$"           X          unchanged
ASC$   EQU  >DC          "ASC"            X          unchanged
PI$    EQU  >DD          "PI"                          X
REC$   EQU  >DE          "REC"            X          unchanged
MAX$   EQU  >DF          "MAX"                         X
MIN$   EQU  >E0          "MIN"                         X
RPT$   EQU  >E1          "RPT"                         X
TERMI$ EQU  >E2          "TERMINATE"      X          unchanged
*      EQU  >E3
*      EQU  >E4
*      EQU  >E5
WHILE$ EQU  >E6          "WHILE"
UNTIL$ EQU  >E7          "UNTIL"
NUMER$ EQU  >E8          "NUMERIC"
DIGIT$ EQU  >E9          "DIGIT"
UALPH$ EQU  >EA          "UALPHA"
SIZE$  EQU  >EB          "SIZE"
ALL$   EQU  >EC          "ALL"
```

```
USING$ EQU  >ED          "USING"
BEEP$  EQU  >EE          "BEEP"
ERASE$ EQU  >EF          "ERASE"
AT$    EQU  >F0          "AT"
BASE$  EQU  >F1          "BASE"
*      EQU  >F2          "TEMPORARY"
VARIA$ EQU  >F3          "VARIABLE"
RELAT$ EQU  >F4          "RELATIVE"
INTER$ EQU  >F5          "INTERNAL"
SEQUE$ EQU  >F6          "SEQUENTIAL"
OUTPU$ EQU  >F7          "OUTPUT"
UPDAT$ EQU  >F8          "UPDATE"
APPEN$ EQU  >F9          "APPEND"
FIXED$ EQU  >FA          "FIXED"
PERMA$ EQU  >FB          "PERMANENT"
TAB$   EQU  >FC          "TAB"
NUMBE$ EQU  >FD          "#"
VALID$ EQU  >FE          "VALIDATE"
*      EQU  >FF          SPARE
```

The question marks in the table above refer to the problem of sharing code that cannot use integers (in standard basic) and that which can, in extended basic. Perhaps we should look again at implementing integers in stnadard basic.