



Xtend

A programmers editor for Model204™ User Language



Xtend Overview

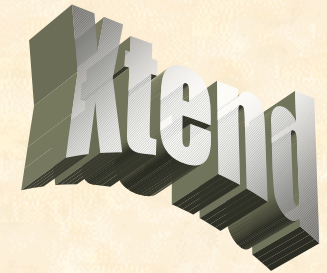


- The current editor used by Model204™ (M204) has remained unchanged for at least the past 14 years. (Probably since its inception in the 60's)
- We decided to build an editor for M204 that takes full advantage of all the functionality that we take for granted when using Windows® based editors.
- *Xtend* gives the user *point/click/drag-drop* plus a whole host of features particular to the M204 programming environment.

***Xtend* brings editing M204 procedures into the 21st Century!**



Procedure List



- tailor multiple 'views' for fast access to programs/data

Local Name	Full Local Path	Remote Name	Remote File	Remote Date	Remote Time	Local Date
example.txt	C:\Yoda\Visual					06/10/2001
final.txt	C:\Yoda\Visual					10/10/2001
on 2.txt	C:\Yoda\Visual	SUB.ON.UNITS	PRCFILE	10/01/2001	12:45:16	05/10/2001
onunits.txt	C:\Yoda\Visual	SUB.ON.UNITS	PRCFILE	10/01/2001	12:30:00	29/08/2001
other_onunits.txt	C:\Yoda\Visual	SUB.ON.UNITS	PRCFILE	10/01/2001	13:12:22	29/08/2001
p_ed204_edit204login.tb	C:\Yoda\Visual	P.ED204.EDIT204LOGI	PRCFILE1	24/10/2001	03:06:03	24/10/2001
p_ed204_getprocs.txt	C:\Yoda\Visual	P.ED204.GETPROCS	EDIT204P	24/10/2001	03:44:57	24/10/2001
S.txt	C:\Yoda\Visual					30/08/2001
subbuild.txt	C:\Yoda\Visual					06/10/2001
subbuild2.txt	C:\Yoda\Visual					06/10/2001
subparse.txt	C:\Yoda\Visual					06/10/2001
subparse2.txt	C:\Yoda\Visual					06/10/2001
SYSTEM_PARAMS.txt	C:\Yoda\Visual	P.ED204.SCREEN.SYS	PRCFILE1	24/10/2001	03:00:07	24/10/2001



Xtend Features



- multiple windows
- line wrap mode

```
File Edit View Window Help
[Icons]
Editing C:\Yoda\Visual Basic\Apps\Edit20...
1 *-----*
2 *-- example procedure --*
3 *-----*
4 B
5 %X          IS FIXED
6 %S1         IS STRING LEN 77
7 %S2         IS STRING LEN 8
8 %C          IS STRING LEN 11
9 %J          IS FLOAT
10 %ARR       IS STRING LEN 11 ARRAY
-> (5) NO FS
11
12 %1234 56789 123456789 123456789
-> 123456789 123456789 123456789
-> 123456789 123456789 1234567 end
13
14 IMAGE ABC
15     ITEM1  IS STRING LEN 8
16     ITEM2  IS STRING LEN 1
17     ITEM3  IS STRING LEN 10
18     ITEM4  IS STRING LEN 19 AT I
-> ITEM1
19 END IMAGE
20 PREPARE IMAGE ABC

Editing C:\Yoda\Visual Basic\Apps\Edit20...
1 *-----*
2 *-- example procedure --*
3 *-----*
4 B
5 %X          IS FIXED
6 %S1         IS STRING LEN 77
7 %S2         IS STRING LEN 8
8 %C          IS STRING LEN 11
9 %J          IS FLOAT
10 %ARR       IS STRING LEN 11 ARRAY
11
12 %1234 56789 123456789 123456789
13
14 IMAGE ABC
15     ITEM1  IS STRING LEN 8
16     ITEM2  IS STRING LEN 1
17     ITEM3  IS STRING LEN 10
18     ITEM4  IS STRING LEN 19 AT I
19 END IMAGE
20 PREPARE IMAGE ABC
21
22 SCREEN SCR1
23     TITLE SCRTITLE
24     SKIP 1 LINE

Editing New (1)
1
```



Xtend Features



- multiple 'Block' functions

The screenshot shows the Xtend editor window titled "Editing C:\Yoda\Visual Basic\Apps\Edit204\textfiles\example.txt". The code in the editor is as follows:

```
1 *-----*
2 *-- example procedure --*
3 *-----*
4 B
5 %X      IS FIXED
6 %S1     IS STRING LEN 77
7 %S2     IS STRING LEN 8
8 %C      IS STRING LEN 11
9 %J      IS FLOAT
10 %ARR    IS STRING LEN 11 ARRAY(5)
11
12 INCLUDE SUB.ON.UNITS
13
14 IMAGE ABC
15     ITEM1 IS STRING LEN 8
16     ITEM2 IS STRING LEN 1
17     ITEM3 IS STRING LEN 10
18     ITEM4 IS STRING LEN 19 AT ITEM1
19 END IMAGE
20 PREPARE IMAGE ABC
21
22 SCREEN SCR1
23     TITLE SCRTITLE                AT 2 LEN 77 BRIGHT
24     SKIP 1 LINE
```

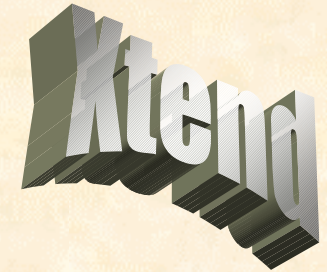
A rectangular box highlights the block of code from line 5 to line 10. A context menu is open over this block, listing the following options:

- Undo (Ctrl+Z)
- Block** (highlighted) with a submenu:
 - Initiate Block Mode
 - Block Paste (insert)
 - Block Paste (overwrite)
 - Block Cut (leave spaces)
 - Block Cut (remove spaces)
 - Block Flip
 - Block Sort
 - Block Align
 - Block Replace
 - Block Fill
- Line
- Case
- Copy
- Cut
- Paste
- Find (Replace) (Ctrl+F)
- SuppressText (with a submenu)
 - Block Replace
 - Block Fill
- Syntax Check
- Cancel

At the bottom of the editor window, a status bar reads: "Block copied, position cursor for paste or invoke other Block options."



Xtend Features



- multiple 'Model204 aware' functions

The screenshot shows the Xtend IDE window titled "Xtend - [Editing C:\Yoda\Visual Basic\Apps\Xtend\textfiles\example.txt]". The menu bar includes File, Edit, View, Utilities, Developer, Window, and Help. The toolbar contains various icons for file operations and editing. The code editor displays the following code:

```
1 *-----*
2 *-- example procedure --*
3 *-----*
4 B
5 %ARR IS
6 %C IS
7
8 %J IS
9 %S1 IS
10 %X IS
11 %DOC1 IS
12
13 INCLUDE SUB.ON.UNITS
14
15 IF %A THEN
16     IF %B THEN
17         IF %C THEN
18             FOR %I FROM
19                 IF %A
20
```

A context menu is open over the selection of lines 5 through 9. The menu items are:

- Undo (Ctrl+Z)
- Paint screen
- Paint screen - SCR1
- Re-paint screen - SCR1
- Copy screen SCR1 to new
- Format** (expanded to show sub-menu):
 - Sort
 - Align** (selected)
 - Align And Sort
 - Flip
 - Hide Lines
- Block
- Options
- Line



Xtend Features



- alternate lines copy, cut, paste.

The screenshot shows the Xtend editor window with the following menu structure:

- File
- Edit
- View
- Window
- Help

The main text area contains the following code:

```
1 *-----*
2 *-- example procedure --*
3 *-----*
4 B
5 %X      IS FIXED
6 %S1     IS STRING LEN 77
7 %S2     IS STRING LEN
8 %C      IS STRING LEN
9 %J      IS FLOAT
10 %ARR   IS STRING LEN
11 |
12 INCLUDE SUB.ON.UNITS
13
14 IMAGE ABC
15     ITEM1  IS STRING LE
16     ITEM2  IS STRING LE
17     ITEM3  IS STRING LE
18     ITEM4  IS STRING LE
19 END IMAGE
20 PREPARE IMAGE ABC
21
22 SCREEN SCR1
23     TITLE SCRTITLE           AT 2 LEN 77 BRIGHT
24     SKIP 1 LINE
```

The menu is open, showing the following options:

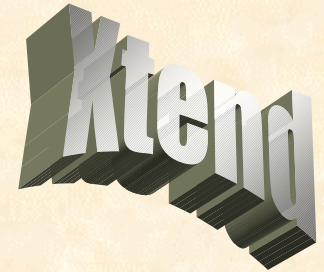
- Undo (Ctrl+Z)
- Block
- Line (highlighted)
- Case
- Copy
- Cut
- Paste
- Find (Replace) (Ctrl+F)
- SuppressText
- Syntax Check

The 'Line' option is expanded, showing a sub-menu with the following options:

- Copy Lines
- Cut Lines
- Paste Lines



Xtend Features



- suppress text.

The screenshot shows the Xtend IDE interface. The main window displays a code file with several lines of code. Red dashed lines indicate suppressed sections of code. A dialog box titled 'Suppress Text' is open, showing the filter string '%X,%S' and three checked options: 'Suppress comment lines', 'Suppress blank lines', and 'Show subroutine declarations'.

```
5  %X      IS FIXED
6  %S1     IS STRING LEN 77
7  %S2     IS STRING LEN 8
<-----# 4 lines skipped #----->
38 %SCR1:TITLE = 'Date Converter. (press PF3 to exit)'
<-----# 30 lines skipped #----->
47 IF %SCR1:PFKEY NE '3' THEN
48   %S2 = %SCR1:DATEIN
49   CALL CHECKINPUT(%S2, %S1)
50   IF %S1 NE '' THEN
51     TAG %SCR:DATEIN BRIGHT
52     %SCR1:MESSAGE = %S1
<-----# 8 lines skipped #----->
55   %ABC:ITEM1 = %S2
56   %C = $DATECNV('YYYYMMDD','DD MON YYYY',%S2)
<-----# 2 lines skipped #----->
58   %SCR1:DATEOUT = %C
59   %S1 = %ABC:ITEM3
60   CALL CHECKINPUT($SUBSTR(%S1,1,$LEN(%S)),%DATE.OUT)
<-----# 1 line skipped #----->
64   %X = 5
<-----# 3 lines skipped #----->
69 SUBROUTINE CHECKINPUT( -
<-----# 4 lines skipped #----->
```

Code filtered on %X,%S , Comment/blank lines not displayed

Suppress Text
Enter a string. All lines NOT containing the string will be suppressed.
(separate multiple entries by commas)
%X,%S
 Suppress comment lines
 Suppress blank lines
 Show subroutine declarations
OK Cancel



Xtend Features



- tooltip style real time help

```
5  %X      IS FIXED
6  %S1     IS STRING LEN 77
7  %S2     IS STRING LEN 8
8  %C      IS STRING LEN 11
9  %J      IS FLOAT
10 %ARR    IS STRING LEN 11 ARRAY(5)
11
12 INCLUDE SUB.ON.UNITS
13 %X = 5
14 %X IS FIXED
15 ITEM1   IS STRING LEN 8
```

‘mouse-over’ variable definitions

```
30 IF %A THEN
31   IF %B THEN
32     IF %C THEN
33       FOR %I FROM 1 TO 15
34         IF %A THEN
35           CALL
36             CHECKINPUT
37             XYZ
38         END IF
39       END FOR
40     END IF
41   END IF
42 END IF
```

Display of available subroutines

```
67 END IF
68
69 CALL CHECKINPUT(
70   CHECKINPUT(%IN.DATE IS STRING LEN 8 INPUT, -
71             %OUT.ERROR IS STRING LEN 77 OUTPUT)
72
73 SUBROUTINE CHECKINPUT( -
74   %IN.DATE IS STRING LEN 8 INPUT, -
75   %OUT.ERROR IS STRING LEN 77 OUTPUT)
76
```

Display of subroutine parameters



Xtend Features



- tooltip style real time help

```
14 IMAGE ABC
15     ITEM1  IS STRING LEN 8
16     ITEM2  IS STRING LEN 1
17     ITEM3  IS STRING LEN 10
18     ITEM4  IS STRING LEN 19 AT ITEM1
19 END IMAGE
20 PREPARE IMAGE ABC
21 %ABC:
22 SCRE|ITEM1
23     T|ITEM2           AT 2 LEN 77
24     S|ITEM3
25     PROMPT 'Input date:' AT 9 BRIGHT
```

Display of image/screen items

```
11
12 INCLUDE SUB.ON.UNITS
13 %X = $SUBSTR(|
14 IMAGE |$SUBSTR(string, position [, length])
15     ITEM1  IS STRING LEN 8
```

\$function assistance



Xtend Features



```
Editing C:\beerclass.txt
1 b
2 class beer
3   Public
4     property name           is string len 30
5     function brew(%quantity is fixed)
6   End Public
7   Public Shared
8
9   End Public Shared
10  Private
11    variable _light          is fixed
12    variable _hop.count.total is fixed
13  End Private
14  Private Shared
15
16  End Private Shared
17
18  function brew(%quantity is fixed)
19    if %quantity < 10 then
20      print 'Quantity less than vat level'
21    return
22  End If
23  End Function
24 End Class
25
26 %hahn is object beer
27 %hahn:name = 'Premium Light'
28 %hahn:brew
29
30 end
```

Support for

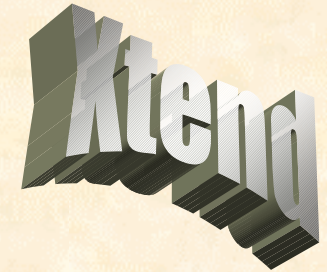
- **Classes**
- **Structures**
- **xmlDocs**
- **HTTP Request/Response**
- **Socket Object**
- **Lowercase**
- **Included Code**

```
29
30 %doc is object |
31
32 end
```

```
HTTPRequest (Object) ▲
HTTPResponse (Object)
NameSpace (Object)
Socket (Object)
TYPE (Object) ▼
```



Xtend Features



The screenshot shows the Xtend IDE interface. The title bar reads 'Xtend'. The menu bar includes 'File', 'Edit', 'View', 'Utilities', 'Developer', 'Window', and 'Help'. The toolbar contains various icons for file operations and development. The main window is titled 'Editing C:\Yoda\Visual Basic\Apps\Xtend\textfiles\example.txt'. On the left, a tree view displays the project structure:

- Top
- Begin
- Image TOTALS
- Screen SCR1
- Sub LOCALSUB
- Sub CHECKINPUT
 - Image XYZ
- Sub XYZ
- End
- Bottom

The code editor on the right shows the following code:

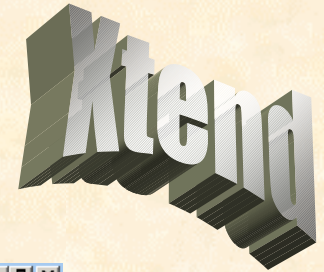
```
122
123 END SUBROUTINE
124
125 SUBROUTINE CHECKINPUT( -
126     %IN.DATE IS STRING LEN 8 INPUT, -
127     %A IS FIXED ARRAY(*,*) INPUT, -
128     %OUT.ERROR IS STRING LEN 77 OUTPUT)
129
130 IMAGE TOTALS COMMON
131
132 %F      IS STRING LEN 10
133 %F.1    IS STRING LEN 10
134 %F.THREE IS STRING LEN 10
135 %F.TWO  IS STRING LEN 10
136 %S1     IS STRING LEN 8
137 %TTT    IS FLOAT
138
139 %S1 = %IN.DATE
140
141 %TTT = 1
142 IMAGE XYZ
143     FRED IS FIXED
144     WILMA IS FLOAT
145 END IMAGE
```

New tree view

- Shows current location
- Click to go to text



Xtend Features



The screenshot displays the Xtend IDE interface. At the top, there is a menu bar (File, View, Developer, Window, Help) and a toolbar. Below this are two code editors side-by-side.

Left Editor (Editing C:\aexamplebackup.txt):

```
2  *-- example procedure --*
3  *-----*
4  B
5  %ARR          IS STRING LEN 121 ARRAY(5)
6  %C            IS STRING LEN 11 -
7              INITIAL (5)
8  %DATE.OUT    IS STRING LEN 8
9  %J           IS FLOAT
10 %S1          IS STRING LEN 77
11 %X           IS FIXED
12
13 INCLUDE SUB.ON.UNITS
14
15 If %a Then
16   if %a then
17     If %a Then
18   End If
19   End If
20 End If
21 End If
22
23 If %A Then
24 End If
25
26 IMAGE TOTALS GLOBAL
27 ITEM1 IS STRING LEN 8
28 ITEM2 IS STRING LEN 1
29 ITEM5 IS STRING LEN 1
30 ITEM3 IS STRING LEN 10
31 ITEM4 IS STRING LEN 19 AT ITEM1
```

Right Editor (Editing C:\Yoda\Visual Basic\Apps\Xtend\textfiles\aexample.txt):

```
2
3 B
4 %ARR          IS STRING LEN 121 ARRAY(5)
5 %C            IS STRING LEN 11 -
6              INITIAL (5)
7 %DATE.OUT    IS STRING LEN 8
8 %J           IS FLOAT
9 %S1          IS STRING LEN 77
10 %X           IS FIXED
11
12 INCLUDE SUB.ON.UNITS
13
14
15 a: Find Without Locks All Records With q=1
16
17 End For
18
19 If %a Then
20   If %a = 1 or -
21     %d = 2 or -
22
23     %c = 3 or -
24     %d = 5 then
25     If %a Then
26       %A = %B
27       %B = %C
28       %D = %F
29     End If
30   End If
31 End If
```

Procedure Compare Dialog:

Compare Results

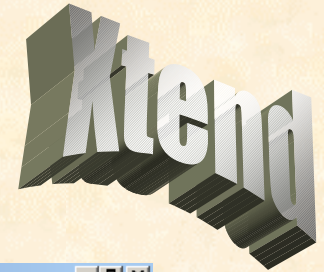
```
aexamplebackup.txt' -->      If %a Then
'aexample.txt' --> End For
```

Buttons: Continue, Cancel

At the bottom, a taskbar shows the Start button, various application icons, and the system tray with the date 5/6/2006 and time 9:12 PM. The Xtend application is running in the background.



Xtend Features



The screenshot displays the Xtend IDE interface. The main window is titled "Xtend" and shows a code editor with the following content:

```
1 * testing
2
3 B
4 %ARR          IS STRING LEN 121 ARRAY(5)
5 %C            IS STRING LEN 11 -
6              INITIAL (5)
7 %DATE.OUT     IS STRING LEN 8
8 %J            IS FLOAT
9 %S1           IS STRING LEN 77
10 %X           IS FIXED
11
12 INCLUDE SUB.ON.UNITS
13
14
15 a: Find Without Locks All Records With q=1
16
17 End For
18
19 If %a Then
20     If %a = 1 or -
21         %d = 2 or -
22
23         %c = 3 or -
24         %d = 5 then
25             If %a Then
26                 %A = %B
27                 %B = %C
28                 %D = %F
29             End If
30         End If
31     End If
32
33 If %A Then
34     End If
35
36
37 If %a - f
```

The Find/Replace dialog box is open, showing the following options:

- Find: string
- Replace: (empty)
- Match Case:
- Word Only:
- Start from top:
- High Light Find:
- Up:
- Down:
- Find in all code:
- Commented:
- Non commented:

The status bar at the bottom shows "Col 1", "CAPS", "INS", "5/6/2006", "9:15 PM", and the taskbar includes "Start", "SUG 2006", "Microsoft PowerPoint", and "Xtend".



Xtend Features



The screenshot shows the Xtend software interface. The main window is titled "Editing C:\Yoda\Visual Basic\Apps\Xtend\textfiles\screen.txt". The interface includes a menu bar (File, Edit, View, Utilities, Developer, Window, Help), a toolbar, and a toolbox on the left. The main editing area displays a form with the following fields:

- Division Number : _____ Page ___ of ___
- Customer Number : _____
- Order Number : _____ Date Received : _____ Date Loaded : _____
- Order Quantity : _____ Items Ordered : _____ MTM Number : _____
- Order BTB? : _____

Below the form is a table with the following structure:

Item Number	Ord Qty	Item Description	Unit Size	Units In Ctn
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

The right-hand side of the interface features a "Properties" panel with the following options:

- Screen Fields
- Name: _____
- Input Prompt Title
- Row: _____
- Column: _____ To: _____
- Length: _____ DP: _____
- Default: _____
- Display Attributes: Standard Extended Colours
- Read ReRead Print Tag
- Bright Dim InVisible Visible Protected UnProtected Char
- Pad
- Deblank No Deblank
- Case: Upper No case None
- Auto Validation Options ...

The status bar at the bottom shows "Col 1", "CAPS", "INS", "1/6/2006", and "8:18 PM". The Windows taskbar at the very bottom includes the Start button, several icons, and open applications: "SUG 2006", "Microsoft Powe...", "Xtend - Microso...", and "Xtend".



Xtend Features



Custom Help

```
16 End Private Shared
17
18 property name is fixed
19     Get
20
21     End Get
22     Set
23
24     End Set
25 End Property
26 function brew(%quantity5 is fixed)
27     if %quantity < 10 then
28         print 'Quantity less than va
29         return
30     End If
31 End Function
32 End Class
33
34 %hahn is object beer
35 %hahn:name = 'Premium Light'
36 %hahn:brew(%s)
37
38 %doc is object xmlDoc
39
40 end
```

Class beer
The beer class is used to describe beer

Methods

Name	Description
brew	Starts the brewing process

Properties

Name	Description
name	Name of the beer



Xtend Features



Custom File/Field Help

The screenshot shows the Xtend IDE interface. The main editor window is titled "Editing FILEHELPTEST (YODAWEB) from remote - Sirius Prod" and contains the following code:

```
1 b
2 in yodaweb fr
3   np
4   pai
5 End For
```

A "Help" window is open in the foreground, displaying information about the YODAWEB file and its fields:

File YODAWEB
The YODAWEB file is use to hold all the web pages for Yoda

Field

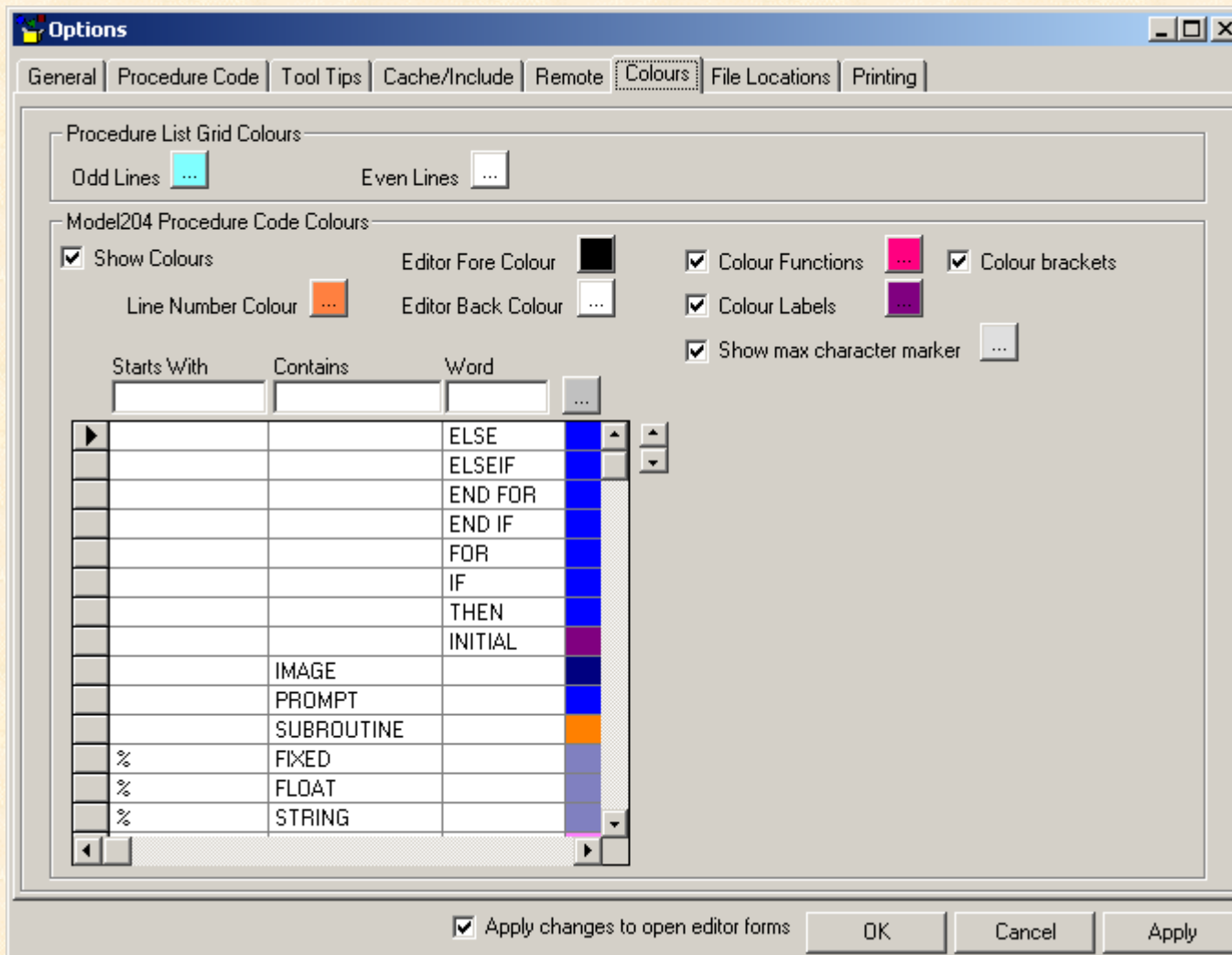
Name	Description
ADDRESS	address of customer
CITY	City of customer



Xtend Features



- colouring of text





Xtend Features



- tab key and block tabbing
- auto indenting
- windows standard help on PF1 key
- line numbers
- case conversion
- find and replace
- fast edit of INCLUDED code
- syntax checker
- procedure compare



ktend

End
End