XTLite for Power Macintosh
User s Guide and Getting Started Manual

XTLite is a publically available toolkit that allows you to write software that adds custom features and enhancements to QuarkXPress^{fi} . Using XTLite with QuarkXPress you will be able to:

Add a Word Processing Filter

Add Menu Items

Trap and Post User Events

Create Dialog Boxes

Manipulate Text

This manual is designed to be an introduction to XTLite, as well as a tutorial for the three main features of XTLite. Step-by-step instructions are included for writing a word processing filter, adding a menu item, and trapping and posting user events in QuarkXPress with XTLite. Additional information is included at the end of this manual about QuarkXTensions^{fi} technology and the XTension^{fi} developer program.

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What is XTLite ?

For the QuarkXPress User

Custom Features: With XTLite you can add custom features to QuarkXPress through software code modules called Bulbs.

Bulbs: A Bulb is created using XTLite routines and data structures. These routines act as a hooks into QuarkXPress and facilitate communication between QuarkXPress and the Bulb you write.

Free: XTLite is publically available software, provided free of charge from Quark Inc.

For the Programmer

Easy: We have designed the XTLite interface to give you quick and easy programming access to some of the more common features of QuarkXPress, such as creating word processing filters, adding menu items, and handling AppleEvents.

Written in C: A common programming language in use today.

Native Power Macintosh Code: Any Bulb that you create with the Power Macintosh version of XTLite takes advantage of the native Power Macintosh environment. This means faster, more efficient code, in a state of the art hardware environment.

Flexibility: If you do not have access to the Power Macintosh version of QuarkXPress, but do have access to a Macintosh version of QuarkXPress, you may write Bulbs that run in emulated mode using the XTLite for Macintosh toolkit. This toolkit includes the same files, and samples, but are created with Think C for Macintosh, and will run with any Macintosh version of QuarkXPress. This toolkit is available on CompuServe and America On Line - see the section titled Technical Support for information about how to find this software.

Free: XTLite technology is available to give you a free opportunity to experiment with QuarkXPress underlying data structures and routines. By writing software that adds custom features and enhancements to QuarkXPress, you can see if you re interested in writing more complex software modules.

XTension Technology: If you become interested in writing more complex modules, you may become a Quark Certified XTension Developer, and receive information about and programming access to QuarkXPress through QuarkXTensions technology. The XTension interface is very similar to the Bulb interface, but incorporates more than 750 additional routines and data structures.

XTension Advantage: Currently, the worldwide Quark developer network has produced over 200 QuarkXPress and Quark Publishing System^{fi} commercial XTensions.The benefits of becoming a Certified XTension Developer range from receiving free copies of Beta and Gamma Quark products to having access to an XTension marketing and supply company called XChange (for more information see the chapter titled, Becoming an XTension Developer).

What is XTLite ?

How XTLite Works

In general, XTLite Bulbs are individual code modules consisting of eleven XTLite required routines, four XTLite data structures, and any other routines you choose to add.

QuarkXPress sends information to your Bulb via automatic calls to the XTLite routines. These routines are called by QuarkXPress at different times while it is running. When a routine is called, any code that you added to the body of the routine in your Bulb will be executed. When the code segment has been run, control is automatically passed back to QuarkXPress. Information can also be sent from your Bulb to QuarkXPress via the parameters in the XTLite routines. This process is invisible to the user, so your Bulb acts like an integrated part of QuarkXPress.

Specifically: QuarkXPress, on launch, loads any Bulb in its home folder and calls the three XTLite routines: setupfilter(),setupidle(), and setupmenu(). At this time, any code in these three routines is executed. For example, in the sample Bulb MenuShell, the setupmenu() routine returns a value of TRUE, and passes a string Sample XTLite Menu Item to QuarkXPress. QuarkXPress then sets up Sample XTLite Menu Item as a menu item in the Utilities menu. If at some point the user selects Sample XTLite Menu Item , QuarkXPress will call another XTLite routine menucall(). Any code in body of the menucall() routine, that you may have added to the Bulb, will then be executed.

Communication between XTLite and QuarkXPress is facilitated by:

Eleven Required XTLite Routines that can be used to:
- Read/write text to and from QuarkXPress using a word processing filter
- Set up and display menus
- Link into the main event loop of QuarkXPress, to trap/post events, such as a mouseUp event .

Twelve Optional Routines that can:
- Check the status of a text box
- Get information about text
- Insert and delete text
- Set and get text attributes
- Set and get paragraph attributes.

Four QuarkXPress Data Structures that can be used to:
- Set text attributes such as font, face, style, size, etc.
- Set tab justification to be LEFT, RIGHT, CENTER, and ALIGNED
- Set leading to be relative or absolute
- Set paragraph attributes such as indentation, justification, etc.

For More Information: The remainder of this manual includes details about how the XTLite routines work, in what context they should be used, and how to obtain more powerful ways to communicate with QuarkXPress.

How to Write an XTLite Bulb

Tools you Need

The Power Macintosh XTLite toolkit:

- XTLite for Power Macintosh User s Guide and Getting Started Manual: the file you are currently reading.

- XTLite.lib: the Metrowerks pre-compiled library file.

- XTLite.h: the Metrowerks header file that contains a list of XTLite routines and data structures to use in your Bulb.

- Five Sample XTLite Bulbs: each of which is a complete Metrowerks Code Warrior project:

    Sample XTLite: adds an import/export filter

    FilterShell: adds an import/export filter

    MenuShell: demonstrates adding a menu item

    Event Shell: demonstrates trapping and posting user events

    Display Chunks: demonstrates text chunk manipulation (see the section
        titled Writing a Word Processing Filter for more information about
    text chunks).

The sample XTLite Bulbs can be used to get you started. We suggest you study these examples and modify the code to make your own Bulb. For more information see the section titled Adding Code to your Bulb .

QuarkXPress: The Bulb you create will add custom features to QuarkXPress. To run your Bulb in native mode on a Power Macintosh, you must have a copy of QuarkXPress for Power Macintosh. If you have a copy of QuarkXPress for Macintosh, that is not a native Power Macintosh version, you may write Bulbs using the XTLite for Macintosh toolkit (see the section titled What is XTLite?).

Metrowerks Code Warrior Compiler: The XTLite library files were compiled with Code Warrior. We currently recommend you use this compiler to create native Power Macintosh Bulbs.

Inside Macintosh Reference Library (Recommended): Throughout the remainder of this guide references will be made to information contained in this library.

How to Write an XTLite Bulb

Things you Need to Know

Knowledge of the C Programming Language: All sample Bulbs are written in C. To create your own Bulbs you will add C code to the sample Bulbs.

Macintosh Programming Experience: In order to trap/post user events, and manipulate dialog boxes it is helpful to be familiar with Macintosh Toolbox calls. Almost any Macintosh Toolbox routine can be used in your Bulb. For more information see *Inside Macintosh*.

Familiarity with the QuarkXPress Interface: The more familiar you are with the QuarkXPress interface, the easier it will be for you to decide which features of XTLite you want to incorporate into your Bulb.

Type Definitions

QuarkXPress uses its own type definitions that may be different from the standard C type definitions that you are used to working with. Listed below are standard C type definitions with the corresponding type definitions you should use when writing XTLite Bulbs.

XTLite uses Macintosh Fixed notation. For more information see the section titled *Adding Code to your Bulb*, or *Inside Macintosh*.

Standard C Type Definitions	XTLite Type Definitions
char	int8
short,int	int16
long	int32
unsigned char	uchar
unsigned short, unsigned int	uint16
Boolean	bool8
unsigned long	uint32
short double	float64
double	float80

How to Write an XTLite Bulb

Data Structures - Alphabetical with Description

There are four XTLite Data Structures that control Leading, Paragraph Attributes, Tab Placement, and Text Attributes. For more information about specific use of these structures see the Writing a Word Processing Filter section.

Leading Control Structure: The structure that controls leading consists of a relative vs. absolute bit. To set the leading to relative, set this bit to 1; otherwise set it to zero, and leading will be absolute.

```
/* Leading Control Structure */

typedef struct {
        unsigned int16 relative : 1;  /* Leading is relative (vs. absolute) */
        } filterparabits;
```

Paragraph Attributes Structure incorporates information from the Tab Align and Leading structures, with some additional fields.

- The just field indicates the justification that should be used for this paragraph.
- The leftindent and rightindent fields are indentation amounts from each side, in points.
- The firstindent field is the amount the first line of this paragraph should be indented.
- The leading field is the leading amount for this paragraph, in points.
- The spcbefore and spcafter fields are, in points, the amount of space that should be left between this paragraph and those that precede and follow it.

```
/* Paragraph Attributes Structure */

typedef stuct {
        filterparabits a;  /* bool8 attributes from the Leading structure */
        Byte just;          /* LEFT, CENTER, RIGHT, JUSTified */
        Fixed leftindent;  /* Left Indent (relative to column/box left edge) */
        Fixed firstindent; /*First Line Indent (relative to  leftindent ) */
        Fixed rightindent; /* Right Indent(relative to column/box rightedge) */
        Fixed leading;       /* 0 means  auto  leading */
        Fixed spcbefore;    /* Space Before paragraph */
        Fixed spcafter;      /* Space After paragraph */
        filtertabspec tabs[MAXTABS]; /* User tabs from the Tab Placement struct */
} filterparaattrib;
```

Tab Placement Structure controls tab justification, alignment, lead characters, and tab indents.

- Tab justification can be set to either left, right, center or character-aligned justification using the tabjust field.
- When the tabjust field is set to TABALIGNON, the alignon field can be used to set the alignment character (such as a decimal point).
- Use the tablead field to insert a leader before each tab, such as spaces or dots.
- The tabindent field is the amount a particular tab is indented, in points.

Data Structures - Alphabetical with Description

```
/* Tab Placement Structure */

typedef struct{
        Byte tabjust;/* TABLEFT, TABCENTER, TABRIGHT, TABALIGNON */
        Byte alignon;    /* byte to align on when TABALIGNON */
        unsigned int16 tablead; /* Two characters to fill tab with */
        Fixed tabindent;   /* Offset to tab */
} filtertabspec;
```

Text Attributes Structure includes information about fonts, style (face), font size, horizontal scaling, shading, kerning and tracking.

- The font field contains the QuarkXPress font ID number of the text.
- The face field controls style attributes such as bold, italic, etc.
- The size field is a fixed number that indicates the point size of the type.
- The hscale field is the horizontal scaling of the text, from 25 to 400%.
- The shade field indicates the shading of the text color, from 0 to 100%.
- The kern and track field each represent the kerning and tracking of the text, in fractional 200ths of an em space.
- To change the value of the font, size, hscale, shade, kern or track fields, change the value field in the data structure.
- To set a particular face attribute, logically OR it with the current face. For example, to set the text face to BOLD,
  textface |= BOLD;
  to turn bold off,
  textface &= ~BOLD;

```
/* Text Attributes Structure */

typedef struct {
        int16 font;       /* Font id */
        int16 face;       /* Face (style) flags */
        Fixed size;       /* Font size */
        Fixed hscale;     /* Horizt. scale factor(1.0 is 100%) */
        Fixed shade;      /* 1.0 is 100% */
        Fixed kern;       /* Fractional 200ths em */
        Fixed track;      /* Fractional 200ths em */
} filtertxtattrib;
```

Tutorials

Setting up Metrowerks Code Warrior

Setting Preferences: When writing a Bulb, you must set the preferences listed below in your copy of the Code Warrior compiler. You can set preferences in the Edit->Preferences menu, or click on the Preferences icon on the toolbar.

Change: the Language, Processor, Linker, and Project preferences as listed below.

Language Preferences: By clicking on the Language icon, the Language options appear. We recommend you set the Source Model popup menu to Apple C . In the Prefix File box type in the name MacHeaders .

Processor Preferences: Clicking on the Processor icon, brings up the Processor options. The only box that you should check (for debugging purposes) is the Peephole Optimizer checkbox. This option tells the compiler to customize instruction scheduling. In order for the compiler to align data on 2-byte boundaries, you must set the Struct Alignment pop up menu to 68K.

Linker Preferences: To make the Linker preferences appear, click on the Linker icon. Within the Link Options group box, check all the boxes except Generate Link Map. In the Entry Points box, make the Initialization text box blank, enter xtmain in the Main text box, and make the Termination text box blank. Checking the Generate SYM File and the Use Full Path Names boxes tells the compiler to generate a SYM file for all project files, with the full path name of your Bulb (this is the symbol table you can use for debugging). You may also check the Faster Linking box to increase linking speed by storing all objects generated during a compile in memory.

Project Preferences: To make the Project preferences appear, click on the Project icon. Change the Project type popup menu to Shared Library . Next, type in the name of your Bulb in the File Name text box, and make sure the Creator is XPR3 and the Type is CUST .

XPPC Resource: When you run XPress with your XTension loaded, an XPPC resource will be created if one did not already exist. This is a resource that is 8 bytes long with an ID of 0. The name of this resource is the name that will appear in the QuarkXPress Environment dialog (hold down Option key when selecting About QuarkXPress from the Apple menu). All native Bulbs will appear in the Environment dialog box with a + before their names.

Debugging: To debug your Bulb, you must correctly set your Code Warrior preferences, and you include a period (.) under the bug icon in the source files you wish to manipulate with the debugger.

For More Information about the Language, Processor, Linker, Project or any other preferences, or information about debugging, please see the Code Warrior instruction manual. For information about creating a Bulb on a Power Mac that runs in emulated mode, please see the documentation included in the XTLite Macintosh toolkit.

Tutorials

Setting up your Bulb

1. **Review the Sample Bulbs**, they illustrate how the routines should be used. Take code from the samples and use it in your own Bulb.

2. **Review the XTLite.h** header file included in this toolkit to become familiar with the QuarkXPress type definitions, XTLite routines, and the XTLite data structures.

3. **Set up your Metrowerks Code Warrior Project** as show above.

4. **Include all Eleven of the Required XTLite Routines**, because QuarkXPress will expect to be able to call them. Therefore, you must include all eleven, even if you do not add code to some of them (see the sample files for an example of how this is done). If you fail to include all eleven required XTLite routines, your Bulb MAY NOT WORK!

5. **Use the Optional Routines** to help simplify the process of writing a Bulb.

6. **A Bulb is not Limited** to the eleven required and twelve optional routines, add your own routines as you see fit.

7. **Fixed Notation:** Some items in the header file use Fixed notation. These are 4-byte values that contain both the integer and fixed portions of a decimal number. Fixed values are stored as 2-byte integer part and 2-byte fractional part. When using fixed fields, the integer portion must be in the upper 16 bits of the variable. For example, to set leading to 12 points, write:

   myparaattribs.leading = 12L<<16;

   By shifting 12 to the left 16 bits, you have stored 12 in the Hiword (or integer portion) of myparaattribs.leading. See Inside Macintosh for additional documentation on fixed notation.

8. **Each XTLite Filter** can accommodate only one file type, so you must write a different Bulb for each file type.

9. **Each XTLite Bulb** can accommodate only one menu item, so you must write a different Bulb for each additional menu item.

10. **In order for QuarkXPress** to run your Bulb, put it in the folder with XPress. On launch QuarkXPress will automatically load your Bulb.

11. **QuarkXPress** can run a total of 50 Bulbs and XTensions. If you exceed this number, they will not be loaded correctly, and may not run.

12. **For More Information:** See the section in this document titled Technical Support .

Tutorials

Writing a Word Processing Filter

A Description and Example of each routine appears in the section titled *Required Routines* , it may be helpful to review this information before reading the following sections.

For More Information see the sample Bulbs.

Word Processing Filters are code modules that allow QuarkXPress to read and write a variety of text formats.

Across Computer Platforms: You may write filters that read and write text across platforms (for example, read text from a Windows word processing file into the Power Macintosh version of QuarkXPress).

Add Code to the Filtershell Sample Bulb To write a word processing filter, you will need to add your own code to the seven routines setupfilter() , startread() , readtext() , endread() , startwrite() , writetext() , and endwrite() ; and manipulate four data structures in the Filtershell Sample Bulb.

1. Set up your Metrowerks Code Warrior Project as shown in the previous section.

2. Write a setupfilter() routine to install the filter.
   QuarkXPress will call this routine automatically once at startup.
   Set the variables fcreator, and ftype to be the four-character Macintosh file types (for example, TEXT , or XDOC) that refer to the file creator that you want to read, and the file type of the document (see *Inside Macintosh* for an explanation of Macintosh file types).
   Set the variable importok to TRUE if you can read the file format, and set exportok to TRUE if you can write the file format; set them to FALSE otherwise.
   Set the two strings, getstr and savestr , to be the strings that you want to appear in the *Get Text ...* and *Save Text...* Dialog boxes.
   The fextension field is the three character file extension of a text import file (the .ABC extension from DOS). If your filter does not use DOS files, pass this value as NULL.

Writing a Word Processing Filter

```
Example:
void setupfilter(OSType *fcreator,OSType *ftype,bool8 *importok,bool8 *exportok, Str255 getstr,
Str255 savestr, Str255 fextension)
{
        *fcreator = OURTEXTCREATOR;                 /* set up file creator information */
        *ftype = OURTEXTTYPE;               /* set up file type information */
        *importok = *exportok = TRUE;    /* we can import and export this format */
        GetIndString(getstr,STRINGRESID,IMPORTSTRID);    /* get Get Text String */
        GetIndString(savestr,STRINGRESID,EXPORTSTRID); /* get Save Text String */

        maxtabs = maxnumoftabs();     /* always get the maximum number of tabs */
}
```

3. Write a startread() routine
    When called, this routine will initialize variables and open the necessary files to start
    importing text. The example below shows the global storage set up and allocation
    that may be needed.
    QuarkXPress will call this routine each time the user chooses Get Text... from the
    file menu, and selects your file type from the dialog box..
    Decide what kind of global storage your filter will need, and whether you will need to
    allocate buffers, etc.
    Do all setup, allocation, and initialization during startread()
    On entry, fnum will contain the file reference number that is automatically assigned to
    each file. The file reference number is used a reference, don t open this file,
    QuarkXPress will do this for you.

Writing a Word Processing Filter

```
Example:
void startread(int16 fnum)
{
        int16 i;

        mytextattr = (filtertxtattribptr)NewPtr(sizeof(filtertxtattrib));
        myparaattr =(filterparaattribptr)NewPtr(sizeof(filterparaattrib)
+maxtabs*sizeof(filtertabspec));

        mytextattr->font = helvetica;          /* set text to 12 point helvetica */
        mytextattr->Face = PLAIN               /* set text to plain style */
        mytextattr->size = 12L<<16; /* point size is fixed notation, so  << 16 */
        mytextattr->kern = 0L;                 /* auto kerning */
        mytextattr->shade = 0x00010000;        /* 100% shade color */
        mytextattr->hscale = 0x00010000;       /* 100% horizontal scaled text */
        mytextattr->track = 0L;

        myparaattr->relative = FALSE;          /* not relative leading */
        myparaattr->just = LEFT;               /* left justified text */
        myparaattr->leftindent = 0L;           /* no left indent */
        myparaattr->firstindent = 0L;      /* no first line of paragraph indent */
        myparaattr->rightindent = 0L;          /* no right indent */
        myparaattr->leading = 0L;              /* 0 means auto leading */
        myparaattr->spcbefore = 0L;    /* no space before or after paragraphs */
        myparaattr->spcafter = 0L;

        /* tabs every .5 inches (all -1L means default)...*/
        for (i = 0; i < maxtabs; i++)
                myparaattr->tabs[i].tabindent = -1L;

        thetextcolor.red = 0;                  /* text color is black */
        thetextcolor.green = 0;
        thetextcolor.blue = 0;

        filebuffer = (unsigned int8 *)NewPtr(BUFSIZE);
        remaining = doffset = 0;
}
```

4. Write a startwrite() routine
    QuarkXPress will call this routine when the user chooses Save Text... from the File
    menu, and selects your text format.
    Use this routine set up any global data structures you will need and initialize any vari-
    ables.
    Note that fnum is used the same way as with startread().

Writing a Word Processing Filter

Example:
```
void startwrite(int16 fnum)
{
        mydlog = GetNewDialog(20000,0,(WindowPtr) -1L);
        displaywind = TRUE;
        ShowWindow(mydlog);
}
```

5. Write a readchar() routine

> QuarkXPress will call the readchar() routine to read one character at a time from the file buffer.
>
> The variable fnum is the file reference number that is automatically assigned to the file.
>
> The example code below can be used to fill a buffer with characters, and return one character at a time using readchar().

Example:
```
void readchar(int16 fnum)
{
        int16 err;

        if (remaining == 0) {
                        /* if buffer is empty then read a buffer full */
                remaining = BUFSIZE;
                err = FSRead(fnum,&remaining,filebuffer);
                if (err && !remaining) {
                        if (err != eofErr) return (err);
                        return (0xFF);
                }
                doffset = 0;
        }
        remaining ;
        return(filebuffer[doffset++]);
}
```

6. Write your readtext() routine

> Your filter will import text using the readtext() routine, and will export text using the writetext() routine.
>
> readtext() and writetext() routines will be repeatedly called as long as there is text to read or write.
>
> A text run is a series of characters with identical attributes (i.e. font, size, color). A text run automatically ends when either a text attribute changes, the maximum number of 256 characters is read, or the end of a paragraph is reached, marked \r . If the textbuffer consists of 256 characters, it is referred to as a Chunk.
>
> If a text run is longer than 256 characters, return it one chunk at a time. When you have filled your buffer with a text run, set the text attributes and return the buffer (along with the character count) in textbuffer (For more information see the Display Chunks sample Bulb).
>
> QuarkXPress will call the readtext() routine to read a text run from the source file and import it into QuarkXPress in the data structures provided.

Writing a Word Processing Filter

Import the attributes of the text using the textattribs and paraattribs data structures.

Import the text color in the textcolor record as an RGB bvalue. QuarkXPress will convert the RGB bvalue into the closest matching QuarkXPress color (there are 8 such colors: red, green,blue, yellow, black, cyan, magenta, and white). For more information about the RGB structure see Inside Macintosh .

The count parameter should contain the number of characters in the textbuffer. When you are finished reading text, set the count parameter to 0.

The fnum parameter contains the file reference number for use with the Macintosh File Manager routines.

```
Example:
void readtext(int16 fnum,Str255 textbuffer,int32 *count,
filtertxtattrib *textattribs,filterparaattrib *paraattribs,RGBColor *textcolor)
{
        int8 ch;
        int16 i;

        i = 0;
        while (TRUE) {
                ch = readchar(fnum); /* See readchar() above */
                /* Handle the characters you read here */
                if (ch >=     || ch == \t || ch == \r )
                        textbuffer[i++] = ch;
                if (ch == \r  || i == 256) break;
                else if (ch == -1) break;
        }
        /* set the text attributes before returning */
        textattribs->font = mytextattr->font;
        textattribs->face = mytextattr->face;
        textattribs->size = mytextattr->size;
        textattribs->hscale = mytextattr->hscale;
        textattribs->shade = mytextattr->shade;
        textattribs->kern = mytextattr->kern;
        textattribs->track = mytextattr->track;
        paraattribs->relative = myparaattr->relative;
        paraattribs->just = myparaattr->just;
        paraattribs->leftindent = myparaattr->leftindent;
        paraattribs->firstindent = myparaattr->firstindent;
        paraattribs->rightindent = myparaattr->rightindent;
        paraattribs->leading = myparaattr->leading;
        paraattribs->spcbefore = myparaattr->spcbefore;
        paraattribs->spcafter = myparaattr->spcafter;
        BlockMove(paraattribs->tabs,myparaattr->tabs,
        maxtabs*sizeof(filtertabspec));

        textcolor->red = thetextcolor.red;
        textcolor->green = thetextcolor.green;
        textcolor->blue = thetextcolor.blue;

        *count = i;       /* tell QXP how many characters are in the text buffer */
}
```

Writing a Word Processing Filter

       7.   Write your writetext() routine.

             Use this routine to write out your text data.

             QuarkXPress will call the writetext() routine as long are there are characters to be written out.

             The fnum parameter contains the file reference number for use with the Macintosh File Manager routines.

             textbuffer contains the characters that need to be written out.

             count contains the number of characters in textbuffer.

             textcolor is an RGB value that matches the color of the text being written.

             NOTE: textbuffer is NOT a Pascal string, begin writing from textbuffer[0] .

```
Example:
void writetext(int16 fnum,Str255 textbuffer,int32 count,filtertxtattrib *textattribs,filterparaattrib
*paraattribs,RGBColor *textcolor)
{
        int8 ch;
        int16 i,j;
        int32 size;
        int16 fserr;
        Str255 tempbuffer;

        for (j = i = 0; i < count; i++) {
                ch = textbuffer[i];
 /* Remember to filter special characters here, See the Sample XTLite Bulb */
        }
        size = j;
        fserr = FSWrite(fnum,&size,tempbuffer);
}
```

       8.   Deallocate your buffers with endread().

             The endread() function is automatically called when you are finished reading text and have set the count parameter in readtext() to 0.

             Dispose of any storage that you had previously allocated as shown in the example below.

```
Example:
void endread(int16 fnum)
{
        if (filebuffer) DisposPtr((Ptr)filebuffer);
        DisposePtr((Ptr)mytextattr);
        DisposePtr((Ptr)myparaattr);
}
```

       9.   De-initialize your variables with endwrite().

             Call the endwrite() function at the end of text export to de-initialize variables.

             Dispose of any storage that you had previously allocated as shown in the example below.

```
Example:
void endwrite(int16 fnum)
{
        int32 size;
        int16 fserr;

        DisposeDialog(mydlog);
}
```

       10. For more information see the section in this document titled Technical Support .

Tutorials

Adding a Menu Item

Items are Added to the Utilities Menu XTLite gives you the ability to add a menu item to the Utilities menu of QuarkXPress.

Add Code to the MenuShell Sample Bulb To add a menu item you will need to add your own code to the two routines setupmenu() and menucall().

One Menu Item per Bulb Each Bulb may add only one menu item. Write an additional Bulb for each menu item you need to add. The maximum number of Bulbs you can add to QuarkXPress is 50.

1. Set up your Metrowerks Code Warrior project as shown in the previous section.

2. Add your own MENUSTRID to setupmenu()

3. Return TRUE in setupmenu()
   This routine is called once at the startup of QuarkXPress to determine if your Bulb will add a menu item in the Utilities menu.
   The variable menustr should contain the text, that will appear to the user, of the menu item.
   Set setupmenu() to TRUE if you want to add your own menu item and FALSE otherwise.
   The routine GetIndString() is a Macintosh toolbox call that gets the menu name text string from a resource.

Example:
```
bool8 setupmenu(Str255 menustr)
{
      GetIndString(menustr,STRINGRESID,MENUSTRID);    /* get Menu String */
      return (TRUE);
}
```

4. Write your own menucall() routine
   This routine is called each time the user selects your menu item from the Utilities menu.
   At this point, the code you write in this routine will be activated.

Example:
```
void menucall(void)
{
/* Put you own code here! */
      SysBeep(1);
}
```

5. For more information see the section in this document titled Technical Support .

Trapping and Posting User Events

User Events can be Trapped: The XTLite interface allows user events to be trapped before they are sent to QuarkXPress.

Add Code to the EventShell Sample Bulb: XTLite traps events through the use of the routines setupidle() and idlecall().

1. Set up your Metrowerks Code Warrior compiler as previously shown.
2. Set the value of setupidle() to TRUE
   This routine is called once at the startup of QuarkXPress to determine if your Bulb wants to handle Idle calls.
   Set the value of setupidle() to TRUE if you want to handle Idle calls, and FALSE otherwise.

Example:
```
bool8 setupidle(void)
{
        return(TRUE)    /* Idle calls will be handled */
}
```

3. Write your own idlecall() routine
   QuarkXPress calls this routine each time it cycles through its main event loop, which is approximately three times a second, but in some cases there may be long delays. For instance, if an alert appears, you won t receive idle calls until the user clicks OK. Whatever code you have in the idlecall() routine will be activated during each pass.
   The Macintosh EventRecord is passed into this routine, which lists the most recent user event that has occurred.
   The example code below demonstrates the trapping of the mouseDown event.
   See Inside Macintosh for a complete listing of items in the EventRecord structure.
   The example idlecall() demonstrates the trapping of the mouseDown event.

Example:
```
void idlecall(EventRecord *myevent)
{
        /* Insert your code here */
        if(myevent->what == mouseDown)
                SysBeep(0);
}
```

4. Use PPostEvent in idlecall()
   To post user events, call the Macintosh toolbox routine PPostEvent() from idlecall().
   PPostEvent() will post the event and return a pointer to the event queue.
   The following sample code demonstrates how to post the keyboard event Command K.

Example:
```
#define KELLEQUIV 0x4B    /* Post a Command  K */

        /* need variable ...*/
        EvQE1 *eventqueue;
        /*post event and return pointer to event queue... */
        PPostEvent(keyDown, (int32)KILLEQUIV, &eventqueue);
        /* set command key modifier... */
        eventqueue->evtQModifies = cmdKey;
```

5. For more information see the section in this document titled Technical Support .

Routines

Required Routines

Include all Eleven of these Routines in your Bulb, even if you do not add any code to them (for more information see the section titled Adding Code to your Bulb).

Each Routine is listed in this section alphabetically, and is categorized as either a Word Processing, Menu Item, or User Event routine.

For More Information and an example of how to use each routines, see the corresponding section in the chapter titled Tutorials .

Routine	Prototype	Page Number
endread()	void endread(int16 fnum)	18
endwrite()	void endwrite(int16 fnum)	19
idlecall()	void idlecall(EventRecord *myevent)	20
menucall()	void menucall(void)	21
readtext()	void readtext(int16 fnum, Str255 textbuffer, int32 * count, filtertxtattribs *textattribs, filterparaattribs *paraattribs,RGBColor *paraattribs)	22
setupfilter()	void setupfilter(OSType *fcreator, OSType *ftype, bool8 *exportok, Str255 getstr, Str255 savestr, Str255 fextension)	23
setupidle()	bool8 setupidle(void)	24
setupmenu()	bool8 setupmenu(Str255 menustr)	25
startread()	void startread(int16 fnum)	26
startwrite()	void startwrite(int16 fnum)	27
writetext()	void startwrite(int16 fnum)	28

endread() W ord Processing

Synopsis
void endread(int16 fnum)

Description
Add code to this routine to deallocate the buffers used to read text into QuarkXPress.

QuarkXPress will automatically call this routine when you are finished reading text, and have set the count parameter in readtext() to 0.

Entry
fnum   The file reference number that is automatically assigned to the file, do not attempt to set or change the value of this variable.

Exit
fnum   The file reference number that is automatically assigned to the file, do not attempt to set or change the value of this variable.

Example

```
void endread(int16 fnum)
{
    if (filebuffer) DisposPtr((Ptr)filebuffer);
    DisposePtr((Ptr)mytextattr);
    DisposePtr((Ptr)myparaattr);
}
```

See Also
endwrite(), readtext()

endwrite() W ord Processing

Synopsis
void endwrite(int16 fnum)

Description
Add code to this routine to deallocate the buffers used to write text from QuarkXPress.

QuarkXPress will automatically call this routine when you are finished writing text, and have set the count parameter in writetext() to 0.

Entry
fnum   The file reference number that is automatically assigned to the file, do not attempt to set or change the value of this variable.

Exit
fnum   The file reference number that is automatically assigned to the file, do not attempt to set or change the value of this variable.

Example

```
void endwrite(int16 fnum)
{
    int32 size;
    int16 fserr;

    DisposeDialog(mydlog);
}
```

See Also
endread(), writetext()

idlecall()   User Event

Synopsis
void idlecall(EventRecord *myevent)

Description
Add your own code to this routine to trap events from EventRecord, and post events with
the toolbox call PPostEvent().

QuarkXPress will call this routine each time it cycles through its main event loop (approxi-
mately 3 times per second, although long delays can occur).

Entry
myevent   The Macintosh EventRecord that lists the most recent user event
    that has   occurred.

Exit
myevent   The Macintosh EventRecord.

Example

```
void idlecall(EventRecord *myevent)
{
    /* Insert your code here */
    if(myevent->what == mouseDown)
        SysBeep(0);
}
```

Caveats
See Inside Macintosh for more information about the Macintosh EventRecord.

See Also
setupidle()

menucall()   Menu Item

Synopsis
void menucall(void)

Description
The code you add to this routine will be executed each time the user selects the menu item
set up with the routine setupmenu().

QuarkXPress will call this routine each time the user selects the setupmenu() menu item.

Entry
    None.

Exit
    None.

Example

```
void menucall(void)
{
/* Put you own code here! */
    SysBeep(1);
}
```

See Also
setupmenu()

readtext() W ord Processing

Synopsis
void readtext(int16 fnum, Str255 textbuffer, int32 *count, filterxtattribs *textattribs, filterparaattribs *paraattribs, RGBColor *paraattribs)

Description
Use this routine to import text into QuarkXPress from a source file.

QuarkXPress will call this routine each time the user selects Get Text... with your file import type selected.

Entry
fnum   The file reference number that is automatically assigned to the file, do not attempt to set or change the value of this variable.

Exit
fnum   The file reference number that is automatically assigned to the file, do not attempt to set or change the value of this variable.

textbuffer   This buffer of text that is to be read into QuarkXPress.

count   The number of characters in textbuffer.

textattribs   The text attributes data structure.

paraattribs   The paragraph attributes data structure.

textcolor   The text color data structure (the RGB structure in Inside Macintosh).

Example
```
void readtext(int16 fnum,Str255 textbuffer, int32 *count,
filtertxtattrib *textattribs, filterparaattrib *paraattribs,
RGBColor *textcolor)
{
    int8 ch;
    int16 i;

    i = 0;
    while (TRUE) {
        ch = readchar(fnum); /* See readchar() above */
        /* Handle the characters you read here */
        if (ch >=    || ch == \t || ch == \r )
                textbuffer[i++] = ch;
        if (ch == \r  || i == 256) break;
        else if (ch == -1) break;
    }
    /* initialize all text attributes here */
    /* initialize all paragraph attributes here */

        BlockMove(paraattribs->tabs,myparaattr->tabs,
    maxtabs*sizeof(filtertabspec));

    /* initialize all text color attributes here */

    *count = i; /* tell QXP how many characters are in the text buffer */
}
```
See Also
writetext()

setupfilter()   Word Processing

Synopsis
void setupfilter (OSType *fcreator, OSType *ftype, bool8 *importok, bool8 *exportok,
Str255 getstr, Str255 savestr, Str255 fextension)

Description
Add code to this routine to setup the necessary elements of your word processing
filter.

QuarkXPress will call this routine once at startup to install your word processing filter.

Entry
    None.

Exit

fcreator	Set this to be the four-character Macintosh file creator.
ftype	Set this to be the four-character Macintosh file type.
importok	Set this to TRUE if the filter can import text, FALSE otherwise.
exportok	Set this to TRUE if the filter can export text, FALSE otherwise.
getstr	Set this to be the string you want to appear in the Get Text... QuarkXPress dialog box.
savestr	Set this to be the string you want to appear in the Save Text... QuarkXPress dialog box.
fextension	Use this field as the three character file extension of a text import file (i.e. the .ABC extension from DOS). If your filter does not use DOS files, pass this value as NULL.

Example

```
void setupfilter(OSType *fcreator,OSType *ftype,bool8 *importok,
bool8 *exportok, Str255 getstr,Str255 savestr, Str255 fextension)
{
*fcreator = OURTEXTCREATOR; /* set up file creator information */
*ftype = OURTEXTTYPE; /* set up file type information */
*importok = *exportok = TRUE; /* we can import/export this format */
GetIndString(getstr,STRINGRESID,IMPORTSTRID);/*  Get Text String*/
GetIndString(savestr,STRINGRESID,EXPORTSTRID); /*  Save Text String*/
maxtabs = maxnumoftabs(); /* get the maximum number of tabs */
}
```

Caveats
See Inside Macintosh for more information about Macintosh file types.

setupidle() User Event

Synopsis
bool8 setupidle(void)

Description
Use this routine to inform QuarkXPress that you want to receive idle calls.

QuarkXPress will call this routine once at startup.

Entry
   None.

Exit
Function Return   TRUE if your Bulb will receive idle calls (meaning the idlecall() routine in your Bulb will be called by QuarkXPress), and FALSE otherwise.

Example

```
bool8 setupidle(void)
{
    return(TRUE)    /* Idle calls will be handled */
}
```

Caveats
See Inside Macintosh for more information about receiving user events via the Macintosh EventRecord.

See Also
idlecall()

setupmenu()   Menu Item

Synopsis
bool8 setupmenu(Str255 menustr)

Description
Use this routine to set up the name of your menu item.

QuarkXPress will call this routine on startup to put menustr in the Utilities menu.

Entry
None.

Exit
menustr   The string corresponding to your menu item that appears in the
    QuarkXPress   Utilities menu.

Example

```
bool8 setupmenu(Str255 menustr)
{
    /* get Menu String... */
    GetIndString(menustr,STRINGRESID,MENUSTRID);
    return (TRUE);
}
```

Caveats
See Inside Macintosh for more information about the GetIndString() routine.

See Also
menucall()

startread() W ord Processing

Synopsis
void startread(int16 fnum)

Description
Use this routine to initialize any variables and open any necessary files to start importing text.

QuarkXPress will call this routine when the user selects Get Text... with your file type.

Entry
fnum   The file reference number that is automatically assigned to the file, do not attempt to set or change the value of this variable.

Exit
fnum   The file reference number that is automatically assigned to the file, do not attempt to set or change the value of this variable.

Example

```
void startread(int16 fnum)
{
    int16 i;

    mytextattr = (filtertxtattribptr)NewPtr(sizeof(filtertxtattrib));
    myparaattr =(filterparaattribptr)NewPtr(sizeof(filterparaattrib)
    +maxtabs*sizeof(filtertabspec));

    /* Initialize text attributes here ...*/

    /* Initialize paragraph attributes here ...*/

/* tabs every .5 inches (all -1L means default)... */
    for (i = 0; i < maxtabs; i++)
        myparaattr->tabs[i].tabindent = -1L;

    /* Initialize RGB color attributes here ...*/

    filebuffer = (unsigned int8 *)NewPtr(BUFSIZE);
    remaining = doffset = 0;
}
```

See Also
startwrite(), readtext()

startwrite() W ord Processing

Synopsis
void startwrite(int16 fnum)

Description
Use this routine to initialize any variables and open any necessary files to start exporting text.

QuarkXPress will call this routine when the user selects Save Text... with your file type.

Entry
fnum   The file reference number that is automatically assigned to the file, do not attempt to set or change the value of this variable.

Exit
fnum   The file reference number that is automatically assigned to the file, do not attempt to set or change the value of this variable.

Example

```
void startwrite(int16 fnum)
{
    mydlog = GetNewDialog(20000,0,(WindowPtr) -1L);
    displaywind = TRUE;
    ShowWindow(mydlog);
}
```

See Also
startread(), writetext()

writetext()

Synopsis

void writetext(int16 fnum, Str255 textbuffer, int32 *count, filterxtattribs *textattribs, filterparaattribs *paraattribs, RGBColor *paraattribs)

Description

Use this routine to export text from QuarkXPress into a destination file.

QuarkXPress will call this routine each time the user selects Save Text... with your file export type selected.

Entry

fnum   The file reference number that is automatically assigned to the file, do not attempt to set or change the value of this variable.

Exit

fnum   The file reference number that is automatically assigned to the file, do not attempt to set or change the value of this variable.

textbuffer This buffer of text that is to be read into QuarkXPress.

count   The number of characters in textbuffer.

textattribs The text attributes data structure.

paraattribs The paragraph attributes data structure.

textcolor   The text color data structure (see Inside Macintosh).

Example

```
void writetext(int16 fnum,Str255 textbuffer,int32 count,
filtertxtattrib *textattribs,filterparaattrib *paraattribs,
RGBColor *textcolor)
{
    int8 ch;
    int16 i,j;
    int32 size;
    int16 fserr;
    Str255 tempbuffer;

    for (j = i = 0; i < count; i++) {
        ch = textbuffer[i];
/* Remember to filter special characters here, */
/* See the Sample XTLite Bulb */
    }
    size = j;
    fserr = FSWrite(fnum,&size,tempbuffer);
}
```

See Also

readtext(), startwrite()

Routines

Optional Routines

Twelve Optional Routines: In addition to the eleven required routines that make up the XTLite Toolbox, there are twelve optional routines available. You may use these routine in your Bulb, or write your own version of these routines, as you see fit.

Use these routines to manipulate text and paragraph attributes, and to work with QuarkXPress data structures.

For More Information see the example below, and the sample Bulbs included in this toolkit.

deletetext()

Synopsis
bool8 deletetext(int32 offset, int32 numberofcharacters)

Description
This routine will delete text from the current text box.

Entry
offset   Set this to be the text offset amount that you want.
numberofcharacters   Set this to be the number of characters to delete.

Exit
Function Return   TRUE if the text was deleted, and FALSE otherwise.

Example
See the example at the end of this section, on page 42.

See Also
gettext(), inserttext()

getparaattribute()

Synopsis
bool8 getparaattribute(int16 whichattribute, Fixed *attribute, int32 startoffset, int32 endoffset)

Description
Use this routine to get the attributes of a paragraph.

Entry
whichattribute	The paragraph attribute you want.
attribute	Storage for the value of the attribute.
startoffset	The start of the offset.
endoffset	The end of the offset.

Exit
attribute	The value of the attribute requested in whichattribute.
Function Return	TRUE if whichattribute was returned in the attribute field; and FALSE if the paragraph attribute could not be returned or there was a conflict (i.e. more than one value for that paragraph attribute in the given text range).

Example
See the example at the end of this section, on page 42.

See Also
setparaattribute()

gettext()

Synopsis
bool8 gettext(int32 offset, int32 numberofcharacters, uchar *textstr)

Description
Use this routine to get text from the current text box.

Entry

offset	The text offset amount that you want.
numberofcharacters	The number of characters to delete.
textstr	The start of the offset.

Exit

Function Return	TRUE if the offset, numberofcharacters were returned from the current box in the string textstr; and FALSE otherwise.

Example
See the example at the end of this section, on page 42.

See Also
gettextinfo(), deletetext()

gettextattribute()

Synopsis
bool8 gettextattribute(int16 whichattribute, Fixed *attribute, int32 startoffset, int32 endoffset)

Description
Use this routine to get the attributes of text.

Entry
whichattribute	The text attribute that you want (i.e. T_SIZE).
attribute	Storage for the value of the attribute.
startoffset	The start of the text offset.
endoffset	The end of the text offset.

Exit
attribute	The value of the attribute requested in whichattribute.
Function Return	TRUE if whichattribute was returned in the attribute field; and FALSE if the text attribute could not be returned or there was a conflict (i.e. more than one value for that text attribute in the given range).

Example
See the example at the end of this section, on page 42.

See Also
settextattribute()

gettextinfo()

Synopsis
bool8 gettextinfo(int32 selectionstart, int32 selectionend, int32 totallength)

Description
Use this routine to get general information about the current text from the current text box.

Entry
None.

Exit

selectionstart	The start of the selected text.
selectionend	The end of the selected text.
totallength	The total length of the text in the story.

Example
See the example at the end of this section, on page 42.

See Also
gettext(), deletetext()

inserttext()

Synopsis
bool8 inserttext(int32 numberofcharacters,uchar *textstr, int32 offset)

Description
Use this routine to insert text into the current text box with the given offset.

Entry
numberofcharacters   The number of characters to insert.
textstr   The text string to be inserted.
offset   The text offset amount.

Exit
Function Return   TRUE if numberofcharacters of the string textstr were inserted into
                      the current box by the given offset amount; and FALSE otherwise.

Example
See the example at the end of this section, on page 42.

Caveats
The variable textstr is not a Pascal string, start reading from textstr[0] .

See Also
deletetext(), gettext().

istextboxcurrent()

Synopsis
bool8 istextboxcurrent(void)

Description
Use this routine to determine if a text box is currently selected.

Entry
   None.

Exit
Function Return   TRUE if a text box is both current selected and the current tool mode
                       is CONTENTS mode, and FALSE otherwise.

Example
See the example at the end of this section, on page 42.

readchar()

Synopsis
void readchar(int16 fnum)

Description
Use this routine to read characters, one at a time, from a file buffer.

Entry
fnum   The file reference number that is automatically assigned to the file, do not
              attempt to modify it.

Exit
fnum   The file reference number that is automatically assigned to the file, do not
              attempt to modify it.

Example
See the sample Bulb Display Chunks.

See Also
gettext()

setparaattribute()

Synopsis
bool8 setparaattribute(int16 whichattribute, Fixed *attribute, int32 startoffset, int32 endoffset, bool16 redrawtext)

Description
Use this routine to set the attributes of a paragraph.

Entry

whichattribute	The paragraph attribute that you want to set (i.e. P_LEFTINDENT)..
attribute	Storage for the new attribute value (i.e. 72L<<16(1 inch)).
startoffset	The start of the offset.
endoffset	The end of the offset.
redrawtext	Set to TRUE if you want the paragraph redrawn and FALSE other wise.

Exit

Function Return	TRUE if whichattribute was set and FALSE if the paragraph attribute could not be set.

Example
See the example at the end of this section, on page 42.

See Also
getparaattribute()

settextattribute()

Synopsis
bool8 setparaattribute(int16 whichattribute, Fixed *attribute, int32 startoffset, int32 endoffset, bool16 redrawtext)

Description
Use this routine to set a text attribute.

Entry
whichattribute	The text attribute that you want to set (i.e. T_SIZE).
attribute	Storage for the new attribute value, (i.e. 72L<<16(1 inch)).
startoffset	The start of the offset.
endoffset	The end of the offset.
redrawtext	Set to TRUE if you want the text redrawn and FALSE otherwise.

Exit
Function Return	TRUE if whichattribute was set and FALSE if the text attribute could not be set.

Example
See the example at the end of this section, on page 42.

See Also
gettextattribute()

settextselection()

Synopsis
bool8 settextselection(int32 startoffset, int32 endoffset)

Description
Use this routine to set the current text selection range, and redraw the text range.

Entry
startoffset   The start of the text offset.
endoffset   The end of the text offset.

Exit
Function Return   TRUE if the text selection range was set, and FALSE if the text
     selec-

                         tion range could not be set.

Example
See the example at the end of this section, on page 42.

Caveats
The turnofftextselection() routine should have been called prior to this routine to turn off the
same text.

See Also
turnofftextselection()

turnofftextselection()

Synopsis
bool8 turnofftextselection(void)

Description
Use this routine to turn off the current text selection range.

Entry
None.

Exit
None.

Example
See the example at the end of this section, on page 42.

Caveats
If you use this routine, always make sure that you call the settextselection() routine after you have finished working with text.

See Also
settextselection()

Optional Routines - Example

```
void idlecall(EventRecord *myevent)
{
        register int32 c;
        int32 start,end,amount,textlen;
        Fixed kern;
        int16 character;
        uchar ch;
        bool8 plus;

#define PLUSTRACKCHAR (30<<8)            /* the + track value character } */
#define MINUSTRACKCHAR (33<<8)   /* the - track value character { */

        character = (*myevent).message&keyCodeMask;
        if (((*myevent).what == keyDown || (*myevent).what == autoKey)
              && ((*myevent).modifiers&(controlKey+shiftKey+cmdKey)) ==
        controlKey+shiftKey+cmdKey
              && (character == PLUSTRACKCHAR || character == MINUSTRACKCHAR)) {
              if (istextboxcurrent()) {
                      gettextinfo(&start,&end,&textlen);
                      if (start != end) {
                              plus = character == PLUSTRACKCHAR;
                              amount = ((*myevent).modifiers&optionKey) ? 1L<<16:
                      10L<<16;
                              turnofftextselection();
                              for (c = start; c < end; c++) {
                                      gettext(c,1L,&ch);
                                      if (ch ==    && c != textlen) {
                                              gettextattribute(T_KERN,&kern,c,c+1);
                                              if (plus) {
                                                      kern += amount;
                                                      f
                                      (!settextattribute(T_KERN,kern,c,c+1,FALSE)) {
                                                              SysBeep(1);
                                                              break;
                                                      }
                                              }
                                              else {
                                                      kern -= amount;
                                                      f
                                      (!settextattribute(T_KERN,kern,c,c+1,FALSE)) {
                                                              SysBeep(1);
                                                              break;
                                                      }
                                              }
                                      }
                              }
                              settextselection(start,end);
                      }
                      else SysBeep(1);
                      (*myevent).what = nullEvent;
              }
        }
}
```

Technical Support for XTLite

Peer Support for XTLite is available on America Online, CompuServe, and the Internet.

Questions, answers, suggestions, constructive comments, and bug reports may be posted on any of these forums.

America Online

The America Online forum for XTLite can be found by using:

Keyword Q U A R K

The XTLite toolkit can be found in the following location:

Quark Software Libraries
QuarkXTensions
Macintosh XTLite.sea
Power Macintosh XTLite.sea
CopyDesk XTLite.sea
QXP-Windows XTensions

CompuServe

The CompuServe forum for XTLite can be found in

the DTP Forum or by using the the keyword: GO DTPFORUM.

The XTLite toolkit can be located in:

DTP Forum (GO DTPFORUM)
Mac DTP Utilities (Library 5)
MACXTL.SEA (XTLite for Mac)
PMCXTL.SEA (XTLite for Power Mac)
CDKXTL.SEA (XTLite for CopyDesk)
PC DTP Utilities (Library 6)
XTLITE.ZIP (XTLite for PC)

AppleLink

There is no public forum for XTLite on AppleLink.

The XTLite toolkit can be found in the following location:

Software Sampler
3rd Party Demos/Updates
Software Updates
Companies K-R
Quark
Mac Software Libraries
XTensions
Macintosh XTLite.sea
CopyDesk XTLite.sea
Power Macintosh XTLite.sea

Internet

XTLite Listserver: A listserver exists on the Internet as a way for developers to send and receive messages. It works as a remailing service   once you subscribe you will receive ALL electronic mail messages any other XTLite subscriber posts on the server. Likewise, any electronic mail message you post on the server will be remailed to ALL other XTLite developers that have subscribed. If you want to ask a question of a specific developer, or are uncomfortable posting your question in a widely distributed forum, please don t use this listserver. Send any private messages directly to the electronic mail account of the person you want to contact.

Internet

To subscribe to the XTLite Listserver

Send the following one line message:

subscribe XTPD
to...

majordomo@csn.org

No other special commands are required.

To post a message to the XTLite Listserver

Send your message to...
XTPD@QUARK.COM

No other special commands are required.

To remove yourself from the XTLite Listserver

Send the one-line message

unsubscribe XTPD
to...

majordomo@csn.org

All commands must be sent to MAJORDOMO and NOT the list! Send ONLY mail contributions to XTPD@quark.com The commands go in the body of the mail, and not the subject.

Activities These public forums are designed to help XTLite developers share community knowledge specific to XTLite development. These activities are encouraged:

- Questions regarding programming XTLite Bulbs for QuarkXPress.
- Exchange of XTLite Bulbs with other XTLite developers.
- Public discussion of ways to improve the XTLite program. Please be constructive. It is easy to complain, but far more useful to work towards a solution.

Inappropriate Activities that will cause us to revoke your listserver subscription:

- Carping, complaining, and moaning without any intention of working towards a resolution.
- Personal messages to another developer.
- Exchange of any copyrighted materials. We assume that any material that is exchanged over this listserver is NOT proprietary or trade secret.

For More Information: Users of XTLite who may require additional assistance beyond the public domain forums can consider becoming a fully certified XTension developer.

Becoming an XTension Developer

Differences between XTLite Bulbs and XTensions

An XTLite Bulb can access three features of QuarkXPress, an XTension can access 100% of the features of QuarkXPress.

A Bulb communicates with QuarkXPress only when it is called, an XTension can send information to and receive information from QuarkXPress using special routines called Opcodes (there are approximately 100 Opcodes in the XTensions interface).

Each Bulb can add one menu item to the Utilities menu. An XTension can add several menu items, to any QuarkXPress menu except the File menu.

Each Bulb can handle one file type at a time, each XTension can handle multiple file types.

XTlite consists of eleven routines to communicate with QuarkXPress, the XTension inter-face consists of over 750 (see the following section for samples).

As an XTLite developer you receive Peer technical support, XTension developers receive free technical support from Quark XTension programmers through electronic mail, fax, and phone.

As an XTension developer you will receive a free subscription to a monthly technical newsletter, which is a compilation of regular electronic developer feeds that you will receive if you have an electronic mail account.

XTension developers are eligible to attend Quark-sponsored training camps at both inter-national and U.S. locations.

XTension developers are eligible to receive Gamma and Beta releases of upcoming Quark Software.

Availability

The XTension Developer Program is currently available for
- QuarkXPress for Macintosh (which includes Power Macintosh)
- QuarkXPress for Windows
- Quark Publishing System
  These programs are managed by our corporate U.S. headquarters. See the section titled Additional Information for the ground mail address, electronic mail address, and FAX number.

East Asian Japanese and Korean versions of QuarkXPress, which is handled through our Tokyo office. If you are interested in our East Asian developer program, please contact our Tokyo office:
  QMH Japan B.V., Japan Branch
  5FKHO Building
  3-14-16 Higashi
  Shibuya-ku
  Tokyo 150 Japan

Becoming an XTension Developer

How to become Certified

- Decide which program(s) you wish to write XTensions for. Developers can be certified for more than one platform.

- If you are interested in the Macintosh, Windows, or Quark Publishing System developer program, print the Application included in this document, fill it out, enclose the appropriate payment, and mail it to:

  U.S. QuarkXTension Developer Desk
  1800 Grant Street
  Denver, CO 80203

- Upon receiving your application, we will send you a Quark License agreement, and a ten-page brochure outlining the program.

- When we receive your signed license agreement, we will review your application and if approved you will receive an acceptance letter followed by the Inside QuarkXPress Developer Kit for the platform(s) you are certified for.

Cost

The current fee (U.S.) for certification is $500. For information about the cost of East Asian versions of QuarkXPress, contact our Tokyo office at the address above.

Becoming an XTension Developer

Sample Routines

The XTension documentation contains all of the information you need to write your own XTensions, including sample QuarkXTensions. Listed below are some of the types of routines that are available through the XTension interface (this is not a complete list).

Opcodes are the commands issued to denote events. They allow you to initialize an XTension and add it to the QuarkXPress environment, handle menu selections, and handle Quark system events.

BOX_ACTIVATE	MISC_CLICKOUT	MISC_SENDCLIPPATH
BOX_BYTESWAP	MISC_CLOSE	MISC_SETPLATE
BOX_CLICK	MISC_CONVERTEPS	MISC_SLUGBYTESWAP
BOX_COLOR	MISC_CREATEEPS-	MISC_TRAPINFOHELP
BOX_COLORIZE	FONTS	PS_COMMENTS
BOX_CREATE	MISC_DBPICT	PS_ENDDOC
BOX_CURSOR	MISC_DELETEITEM	PS_ENDEPS
BOX_DEACTIVATE	MISC_DOCSTATSINFO	PS_ENDPAGE
BOX_DISPOSE	MISC_DRAGNDROP	PS_ENDTIFF
BOX_DUPLICATE	MISC_DRAWBOX	PS_INITIALIZATION
BOX_FONTINFO	MISC_DUPTABLEEND	PS_OPIADDITIONAL
BOX_IDLE	MISC_DUPTABLESTART	PS_PROCSETS
BOX_KEY	MISC_EDITSAVE	PS_STARTDOC
BOX_MINSIZE	MISC_EXTSAVEPICT	PS_STARTEPS
BOX_MODIFY	MISC_FRAME	XT_ADDMENUITEMS
BOX_MOVE	MISC_GETCOLORSPACE	XT_BOXDEF
BOX_PRINTEND	MISC_IMAGEFILENAME	XT_COLORSEP
BOX_PRINTHEADER	MISC_INITPRINT	XT_COLORSTUFF
BOX_PRINTSTART	MISC_LAUNCHEPS	XT_DEINIT
BOX_RESIZE	MISC_LAUNCHPRINT	XT_DEINITTEXTREAD
BOX_SHADE	MISC_NETENTITY	XT_DEINITTEXTWRITE
BOX_STYLE	MISC_NETINIT	XT_DOCOMMAND
BOX_UPDATE	MISC_NETUPDATE	XT_DOMENUITEM
HIDDEN_CLICK	MISC_NEW	XT_FREEMEM
HIDDEN_COPY	MISC_OPEN	XT_GETSTATUS
HIDDEN_DELETION	MISC_OPENGUIDE	XT_HIDDEN
HIDDEN_DRAWTEXT	MISC_PRECOPYITEM	XT_IDLE
HIDDEN_LEADING	MISC_PREDELPAGES	XT_INIT
HIDDEN_PASTE	MISC_PREDUPITEM	XT_INITTEXTREAD
HIDDEN_WIDTH	MISC_PREPCOLLECT	XT_INITTEXTWRITE
MISC_ABORTPRINT	MISC_REGTEXT	XT_MISC
MISC_ADDEPSCOLOR	MISC_REPORTXT	XT_NETLISTCHANGE
MISC_BACKGROUND	MISC_REVERT	XT_NETRECEIVE
MISC_BOXCOPY	MISC_REVERTPREP	XT_OPENPALETTES
MISC_CHECKFILETYPE	MISC_SAVE	XT_PRINTEPS
MISC_CHECK-	MISC_SAVEAS	XT_PRINTPS
PAGERANGE	MISC_SAVECOMPLETE	XT_READSTUFF
MISC_CHECKPLATES	MISC_SAVEPREP	XT_WRITESTUFF

Sample Routines

Alphanumeric Routines handle string conversion and manipulation. With them you can convert between fixed values and strings, and copy, compare, and concatenate strings.

liucompstringpstrcmp	str2val2	strcpy
pstrconcat	str2valbuf	val2str2
pstrcpy	strcmp	val2strbuf
str2val	strconcat	

Error-Handling Routines allow quick error checking and reporting. These routines allow you to add error descriptions to the error list, notify the user of errors that may have occurred, and check values entered in dialog boxes for validity.

allocerrorclearerror	irangecheck	recorderror
fieldrangecheck	istrrangecheck	seterror
giveerror	rangecheck	strrangecheck

Dialog and Window Routines handle dialog boxes, palettes, and windows. These routines enable you to open windows, palettes, and dialog boxes, handle events that occur within windows, palettes and dialog boxes, handle controls, and set and retrieve values from fields.

activatewnd	getnewpaletteid	updatewnd
alertfilter	getpalettewptrs	WACTIVATE
BEGINWAP	invalditem	WAUTOZOOM
closewnd	isdocumentkind	WCHGDOCSTAT
dehilitetxt	ispalette	WCLICK
displaywindow	linedraw	WCLOSE
disposebits	locktexthilite	WCURSOR
dodialog	myalert	WDEACTIVATE
dotdotdot	openwnd	WDRAG
dotdotfullpath	outlines	WIDLE
doupdates	palettewsetup	wink
drawdisableditem	redisplaywindow	WKEY
edithilite	restorewnds	WKEYSWTCHOUT
ENDWAP	selectwindow	WOPEN
fgetfield	setcheck	WOTHER
findpalette	setditemenable	WRESIZE1
frontwindow	setfield	WRESIZE2
fsetfield	setkeywnd	WUPDATE
getfield	setmessageparams	
getnewdialog	setradio	

Sample Routines

Menu-Handling Routines add and handle menu items.

allochierid	allocmenuid	makestylemenu
allocmenuiconid	deltmpcolormitem	

Text Routines allow you to access the textual content of an open document. They enable you to create and delete characters, retrieve and change character attributes, and retrieve and change paragraph formats.

beginfract	getxepstuff2	xedrawall
blkcmp	getxetstuff	xedrawsel
chngpostatrib	getxetstuff2	xegetallattribs
cpos2bptr	locatenextstory	xegetattrib
create_fontlist	myfonttype	xegetinfo
cursorposition	nukedocs	xegetinfo2
delchars	putchar	xegetselrect
endfract	putchars	xegetstoryattb
extractword	recalcdoc	xegetstorylock
FCharWidth	setparafmt	xeputchar
getchar	showsel	xeputchars
getchars	storydirty	xesetattrib
getfontnameorid	textscroll	xesetcalc
getlos	updatfontlisthndl	xesetsel
getlos2	updathndlorvars	xesetstoryattb
getparafmt	xeactivate	xesetstorylock
getpattribs	xecalc	xgetcaretpos
gettattribs	xecopytext	xtgetauxfontinfo
getxepstuff	xedelchars	

Style Sheets and H&J Routines allow you to access style sheets and H&J specifications. These routines enable you to: add, modify, and delete style sheets; and add, modify, and delete H&J specifications.

addhandj	findhyphexcep	getstylebyindex2
addhyphexcep	findhyphexcepbyindex	getstylebyname
addstyle	gethandjbyindex	getstylebyname2
beginhyphexcep	gethandjbyindex2	hyphenateword
counthandjs	gethandjbyindex3	numhyphexceps
countstyles	gethandjbyname	sethandjbyindex
delhandjbyindex	gethandjbyname2	sethyphmethod
delhyphexcep	gethandjbyname3	setstylebyindex
delstylebyindex	gethyphmethod	setstylecontext
endhyphexcep	getstylebyindex	

Sample Routines

Import and Export Routines enable QuarkXPress to read and write new file formats from text to geometry and graphics.

addpicimport	addtextimport2	gettextpict2
addpicimport2	addtiffimport	importbuf
addtextexport	exportbuf	savetext
addtextexport2	getfilterinfo	savetext2
addtextimport	gettextpict	

System Routines allow you to access system parameters at both the document and system level.

getprefs	getsysdefs2	setstepoffsets
getspacealignvalues	getsysinfo	setsysdefs
getstepoffsets	setprefs	setsysdefs2
getsysdefs	setspacealignvalues	setsysinfo

File-Handling Routines give you the power to find files, save documents, and manipulate path names.

addftypealias	getfile	processstats
duplicatefile	getfilesbytype	putfile
extendedsave	getfilesbytype2	save
extractflname	getfullpath	setbackuppath
findfile	HandToXHand	setuppath2
getbackuppath	newsave	writestats

Network Communication Routines exchange information between XTensions so that you can find out who is available on a network; and send and receive information from other XTensions.

getnetinfo	qpacketcancel	sendq
getnetinfo2	qpacketsubscribe	
getnetlist	qphandler	
getruncount	rebuildnetlist	

Hidden Text Routines allow XTensions to insert hidden text data into the text stream. You can use the routines to anchor elements to text (anchored graphics are a form of hidden text), and identify text so that it can be read and processed by your machine.

cleanselrange	h_delchars	increment
decrement	h_getchar	inserthidden
findopcode	h_getchars	skiphidden

Sample Routines

Utility Routines provide XTensions with an array of flexible routines that allow you to simplify XTension source code, debug XTension source code, add and select tools, add menu commands, hyphenate words, obtain information about a printer, and send PostScript commands directly to a printer.

addhelp	docommand2	quitxpress
addtool	END_XT	registersecurext
ADDXT	getmode	registerext
ADDXTSECURE	getwarrantyinfo	scrollxticon
allocicon	getxtinfo	setmode
BEGIN_XT	LOCK_XT	setundo
cmdperiod	makeeps	spellmenu
copyprintsetup	postsend	UNLOCK_XT
devtype	postsendbuf	updatedocfonts
docommand	postsendnocr	zerodata

Box Routines allow you to access text and picture boxes so you can create, manipulate, and delete picture and text boxes; navigate between boxes, perform global operations on the contents of boxes, and identify boxes for current and future reference.

addframe	getscaledcontrgn	newbox2
box2page	getscaledframe	nextbox
bringforward	getscaledframerect	nexttextbox
copyitems	getslug	offsetbox
createmultbox	getslug2	pasteitems
curboxsprdorigin	getsprdbox	pasteitemsatxy
deletebox	gettextflowrgn	prevbox
disposebox	gotobox	prevtextbox
doframe	hasrunpolys	relinkbox
dohandles	inhandles	sendbehind
drawbox	installbox	setbox
fgetbbox	invalbox	setbox2
findslug	invalframe	setcurbox
findslug2	isapicture	setslug
finsetpoly	isgraphicbox	setslug2
firstbox	ismanualimage	settextoutset
free_pixmap	istextbox	simplefpoly
getbox	isuserbox	special
getbox2	lastbox	updatethebox
getboxtype	movebox	xelinkbox
getboxtypes2	newbox	xeunlinkbox

Box-Grouping Routines handle relationships between boxes. Using them, you can group boxes, add boxes to a group, ungroup boxes, get information about a group, and create a multiple-box selections.

addtogroup	getgroupelement	ungroup
boxesingroup	group	
constraingroup	isboxingroup	
deletegroupbox	recalcgpbox	

Sample Routines

Spread and Page Routines handle the creation and manipulation of spreads and pages. Use them to create, move, and delete spreads and pages; navigate among spreads and pages; apply master pages; and convert spread coordinates between spread and page coordinates.

applymaster2pages	insertpages	pagept2sprd
createmaster	insertpages2	redrawpage
deldefpages	interdoccopypages	replicateitems
deletepages	isdbldef	rightmaster
getdisppagenum	mousepage	setsectionstart
getfullmastername	movepages	setsprdorigin
getmastername	nummasterpages	sprd2pages
getpagedata	nummastersprds	sprdfrect2page
getpagedata2	numpages	sprdpt2page
getpageseq	numsprds	updatepagepalette
gotomaster	offpage	whichpage
gotopage	pagefrect2sprd	xtgetpageinfo

Guideline Routines give you the ability to add, move and delete page guides.

addguide	getallguides	registerguide
countguides	getallguides2	setguidebyindex
delguidebyindex	getguidebyindex	

Color Routines control the color attributes in a document and enable you to add, change, and delete colors; get information about specific colors; retrieve and change tap-ping values, convert between RGB, CMYK, and HSB color models.

addbackground	mygetgray	shadecolor
addcolor	pantone2rgb	xtgetlistcolor
cmyk2rgb	restorecolor	xtgetlistcolor2
countcolors	rgb2cmyk	
delcolorbyid	rgb2hsv	
getcolorbyindex	setcolor	
getcolorbyname	setcolorbyid	
hsv2rgb	shadecmykcolor	

Becoming an XTension Developer

Additional Information or to Apply to be an XTension Developer

To receive more information about the XTension Developer program, you may contact the Developer Desk by ground mail, electronic mail or Fax.

Electronic Mail: You can reach the XTension Developer Desk at Quark via electronic mail in several ways. Electronic mail messages can be received via AppleLink, CompuServe, and America Online. Messages received by electronic mail will receive priority of any other means of communication.

- Electronic Mail Address

        AppleLink   QUARKXT

        CompuServe   75140,1136

        Internet   75140.1136@COMPUSERVE.COM

    Japan Developer Desk (for East Asian Developers)

        AppleLink   QUARK.J.DVJ (send ATTN: XTension East Asian
                             Developer Desk)

- Ground Mail Address for all programs except East Asian

        U.S. QuarkXTension Developer Desk
        1800 Grant Street
        Denver, CO 80203

- Ground Mail Address for a East Asian Developers

        QMH Japan B.V., Japan Branch
        5FKHO Building
        3-14-16 Higashi
        Shibuya-ku
        Tokyo 150 Japan

- Fax Number
        (303) 894-3399