

## CONCEPT OF PLAIN AND FORMATTED TEXT:

**Plain text:** Now let us see "What is plain text?"  
**Definition:** Plain text Refers to textual data in ASCII format. In field of computer, plain text is a word used for an normal "unformatted" sequential file readable as textual matter without a large amount processing.

Plain text is the most portable format because it is supported by nearly every application on all machines. Plain text is also called *clear text*. It is quite limited, though, because it cannot contain any formatting commands. Plain text files can be opened, read, and edited with most text editors. Examples include Notepad (Windows), edit (DOS), ed, vi, vim or Gedit (Unix, Linux), SimpleText (Mac OS), or TextEdit (Mac OS X). Other computer programs are also capable of reading and importing plain text. It can also be used by simple computer tools such as line printing text commands like type (DOS and Windows) and cat (Unix). ASCII is short form for the *American Standard Code for Information Interchange*. Pronounced *ask-ee*, ASCII is a code for representing English characters as numbers, with each letter assigned a number from 0 to 127. Nearly everyone computers use ASCII codes to represent text, which makes it possible to transfer data from one computer to another. Text files stored in ASCII format are sometimes called ASCII files. Text editors and word processors are usually capable of storing data in ASCII format, even though ASCII format is not always the default storage format. Most data files, mainly if they contain numeric data, are not stored in ASCII format. Executable programs are never stored in ASCII format. Plain text files are almost common in programming; a source code file containing instructions in a programming language is almost always a plain text file. Plain text is also commonly used for configuration files, which are read for saved settings at the startup of a program. Plain text is the original and ever popular method of transmission e-mail. HTML formatted e-mail messages often include an automati-

cally-generated plain text copy as well, for compatibility reasons. Notepad is a basic text editor that you can use to create simple documents. The most common use for Notepad is to view or edit text (.txt) files, but many users find Notepad a simple tool for creating Web pages. Because Notepad supports only very basic formatting, you cannot accidentally save special formatting in documents that need to remain plain text. This is especially useful when creating HTML documents for a Web page because special characters or other formatting may not appear in your published Web page or may even cause errors. We can save our Notepad files as Unicode, ANSL, UTF-8, or big-endian Unicode. These formats provide you greater flexibility when working with documents that use different character sets. The standard ASCII character set uses just 7 bits for each character. There are several larger character sets that use 8 bits, which gives them 128 additional characters. These extra characters are used to represent non-English characters, graphics symbols, and mathematical symbols. Several companies and organizations have proposed extensions for these 128 characters. The DOS operating system uses a superset of ASCII called *extended ASCII* or *high ASCII*. The encoding has usually been either ASCII, one of its many derivatives such as ISO/IEC 646 etc., or sometimes EBCDIC. No other encodings are used in plain text files which neither contains any (character-based) structural tags such as heading marks, nor any typographic markers like bold face, italics, etc.

### Formatted text:

Now let us see "What is formatted text?"

**Definition :** Formatted text that is also known as styled text or rich text, as opposed to plain text, has styling information beyond the minimum of semantic components: colors, styles (boldface, italic), sizes and special features (such as hyperlinks).

Formatted text cannot correctly be identified with binary files or be separate from ASCII text. This is because formatted text is not essentially binary, it may be text-only, such as HTML, RTF or enriched text files.

and it may be ASCII-only. On the other hand, a plain text file may be non-ASCII (in an encoding such as Unicode UTF-8). Text-only formatted text is accomplished by markup which too is textual, at the same time as some editors of formatted text like Microsoft Word save in a binary format. Formatted text has its beginning in the first interactive systems, where users made up for the lack of formatting in ASCII by using certain symbols as substitutes. Since the invention of MacWrite, the first WYSIWYG (What You See Is What is Get) word processor, in which the typist codes the formatting visually rather than by inserting textual markup, word processors have tended to save to binary files. Opening such files with a text editor make known the text embellished with various binary characters, either around the formatted areas (e.g. in WordPerfect) or separately, at the beginning or end of the file (eg in Microsoft Word). Formatted text documents in binary files have, however, the disadvantages of formatting scope and secrecy. Whereas the extent of formatting is accurately marked in markup languages, WYSIWYG formatting is based on memory that is, keeping for example your pressing of the boldface button until cancelled. This can lead to formatting mistakes and maintenance troubles. As for secrecy, formatted text document file formats tend to be proprietary and undocumented, leading to difficulty in coding compatibility by third parties, and also to unnecessary upgrades because of version changes.

PDF is another formatted text file format that is usually binary (using compression for the text, and storing graphics and fonts in binary). It is generally an end-user format, written from an application such as Microsoft Word or OpenOffice.org Writer, and not editable by the user once done. With WordPad, you can create and edit documents with complex formatting and graphics. You can save your WordPad file as a text file, rich text file, text file for MS-DOS, or Unicode. These formats provide greater flexibility when working with other programs. Documents that use multiple languages should be saved as rich text files.

Now let us see "How to Format Text in Microsoft Word?"

Text formatting allows you to add a professional look to your documents but be careful and don't overuse the effects as this will make your document look anything un-professional.

It is always best to use the one Font Type throughout the whole document, as this gives the document a look of conformity. The use of different colors and funky fonts detract from a document and makes them look completely unprofessional.

You can format text in Microsoft Word by changing font types, font size, and font style (bold, italics, underline and color, etc.).

To format text in MS-Word follows the following steps :

1. Select the text you want to format by highlighting.
2. Go to the Format menu and select Font. The Font window opens.
3. Select the Font tab, if it is not already selected.
4. Select the Font, Font Style, and Font Size you want to use.
5. Go to the Underline drop-down menu and select the type of underline you want, if any.
6. Go to the Color drop-down menu and select the font color you want; black is the default color.
7. Select the Effects you want in the Effects box by clicking on the checkbox for each effect you want the text to have.
8. Preview your changes in the Preview box at the bottom of the window.
9. Click OK.
10. To only change the font type, highlight the text, go to the Font menu in the Formatting toolbar, and select the font you want to use.

### ADVANCED TEXT FORMATTING

You can add special effects to the font of text by using advanced text formatting. You can underline text in several ways, write in subscript or superscript, leave space between two characters. You can also add animation.

To use advanced formatting, use the following steps :

- ↪ Select the text.
- ↪ Click the Format menu, choose Font.

A Font window should appear like one in the figure. There is a preview section which displays the changes on the text and tells how it will look actually.

The table describes different commands with their effects :

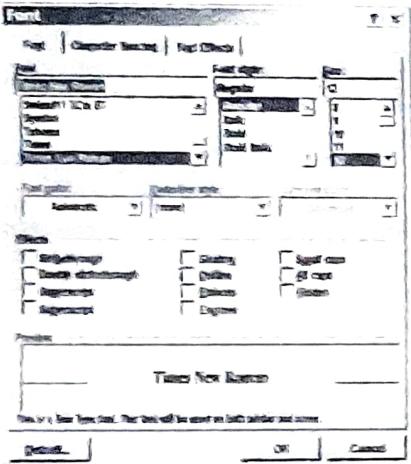


Fig. : Font dialog box

## USING VARIOUS TEXT EFFECT

You can give special effects to your text like you may blink your text in order to attract users' attention or encircle it. One is given in the figure.

To give the special effects to your text, you need to follow the instructions as mentioned ahead-

- ↪ Click the Format menu and select Font. The Font window appears.
- ↪ Then, select Text Effects tab and then select the animation piece as desired from Animations box.

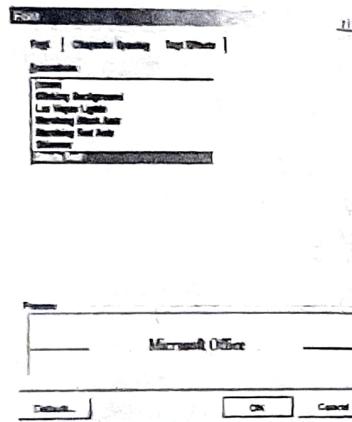


Fig. : Animation of the text from Font dialog box

COMMANDS	EFFECTS
Strikethrough	Pragya
Double Strikethrough	Pragya
Superscript	$E = mc^2$
Subscript	$K_2SO_4 \cdot Al_2(SO_4)_3 \cdot 24H_2O$
Shadow	Pragya
Outline	Pragya
Emboss	Pragya
Engrave	Pragya
Small Caps	PRAGYA
All Caps	PRAGYA
Hidden	

Table : Commands with their effects

## RTF & HTML TEXT:

### RTF (Rich Text Format):

**Definition:** "The Rich Text Format (RTF) Specification is a method of encoding formatted text and graphics for easy transfer between applications. In other words we can say that The Rich Text Format (RTF) is a document file format developed by Microsoft in 1987 for cross-platform document interchange. Most word processors are able to read and write RTF documents."

At present, users depend on particular translation software to move word-processing documents between different MS-DOS, Windows, OS/2, Macintosh, and Power Macintosh applications.

RTF Specification provides a format for text and graphics interchange that can be used with different output devices, operating environments, and operating systems. RTF uses the ASCII PC-S, Macintosh, or IBM PC character set to control the representation and formatting of a document, both on the screen and in print. With the RTF Specification, documents created under different operating systems and with different software applications can be transferred between those operating systems and applications. RTF files created in Word 6.0 (and later) for the Macintosh and Power Macintosh have a file type of "RTF." Software that takes a formatted file and turns it into an RTF file is called a writer. An RTF writer separates the application's control information from the actual text and writes a new file containing the text and the RTF groups linked with that text. Software that translates an RTF file into a formatted file is called a reader. The sample RTF reader is not a for-sale product, and Microsoft does not provide technical or any other type of support for its sample RTF reader code or the RTF specification. RTF is an 8-bit format. That would limit it to ASCII, but RTF can encode characters beyond ASCII by escape sequences. The character escapes are of two types: code page escapes and Unicode escapes.

When an RTF file is opened in a text editor, without formatting or processing of formatting, the plain text is readable and the markup language (formatting) elements are not too disturbing. Most word processing software implementations support RTF format importing and exporting, and/or direct editing, frequently making it a "common" format between otherwise incompatible word processing softwares and reading systems. These factors contribute to interoperability.

On the whole, since 1987, RTF files may be transferred back and forth between many old and new computer systems even though differences between operating systems and their versions. This makes it a useful format for basic formatted text documents such as instruction manuals, resumes, letters, and modest informa-

tion documents. These documents at minimum support bold, italic, and underline text formatting. Also classically supported are left-, center-, and right- justified text. In addition, font specification and document margins are supported in RTF documents.

Font and margin defaults, as well as style presets and other functions will vary according to program defaults. On the other hand, the RTF format is reliable enough from computer to computer to be considered highly portable and quite acceptable for cross-platform use.

RTF specification timeline is as follows:

1. 1987: RTF 1.0
2. January 1994: RTF 1.3
3. April 1997: RTF 1.5
4. May 1999: RTF 1.6
5. August 2001: RTF 1.7
6. April 2004: RTF 1.8
7. March 2008: RTF 1.9.1

## HTML Text

Now let us see "What is HTML Text?"

HTML text include two things first is plain text and second is HTML Tag. Therefore we can say that HTML text is a combination of plain text and HTML Tag. We can represent this concept as follows:

**HTML Text = Plain Text + HTML Tag**

HTML is a language for describing web pages. HTML stands for Hyper Text Markup Language. HTML is not a programming language; it is a markup language. A markup language is a set of markup tags. HTML uses markup tags to describe web pages.

**Definition :** "HTML is an abbreviation for Hypertext Markup Language; a cross-platform text-formatting system for creating web pages, including copy, images, sounds, frames, animation and more." In other words we can say that "HTML is a language used to create electronic documents, especially pages on the World Wide Web, that contain connections called hyperlinks or HTML (Hypertext Markup Language) is the set of markup symbols or codes inserted in a file

intended for display on a World Wide Web browser page and by which Web servers and client browsers communicate. The markup tells the Web browser how to display a Web page's words and images for the user."

## HTML Tags

HTML markup tags are usually called HTML tags.

1. HTML tags are keywords surrounded by angle brackets like <html>
2. HTML tags normally come in pairs like <div> and </div>
3. The first tag in a pair is the start tag, the second tag is the end tag
4. Start and end tags are also called opening tags and closing tags.

The purpose of a web browser (like Internet Explorer or Firefox) is to read HTML documents and display them as web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page. A typical HTML document has the following form:

```
<html>
<head>
<title> my first web page</title>
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph</p>
</body>
</html>
```

## USING TEXT PREPARATION TOOLS AND STANDARD SOFTWARE:

Now let us see some most common text preparation tools.

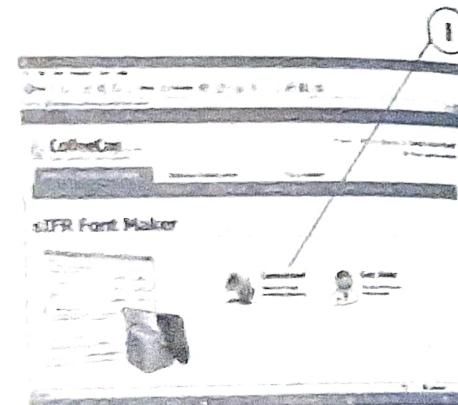
### 1- CoffeeCup sIFR Font Maker :

The CoffeeCup sIFR Font Maker 1.0 and High LogicPoniCreator are important text preparation tools. These have an intuitive interface that allows beginners to become

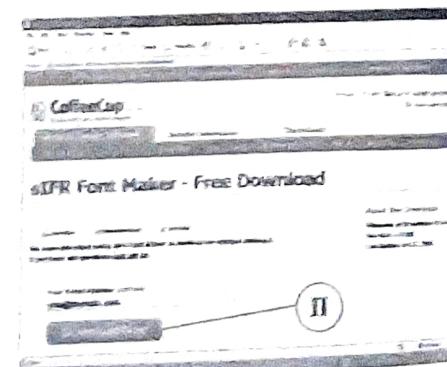
productive immediately and it contains the powerful drawing tools that font designers require to create and edit high-quality TrueType and OpenType fonts.

Now let us see installation process of the CoffeeCup sIFR Font Maker 1.0 software. To install CoffeeCup sIFR Font Maker 1.0 follow the following steps:

1. Download this software from the URL <http://www.coffeecup.com/freestuff/> or <http://www.coffeecup.com/sifr-font-maker/>

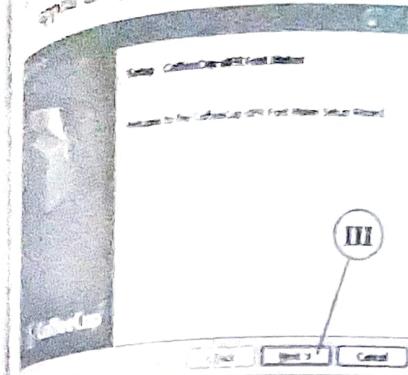


2. Click on the Download button to free download for sIFR Font Maker.
3. Then the following window will appear.

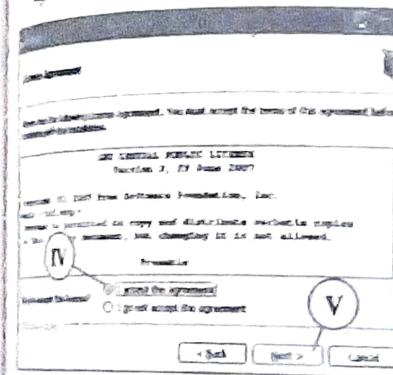


4. Click on the Download Now button. Then the downloading of .exe file of this software is start. After completion of downloading click on the Run button to run setup file.

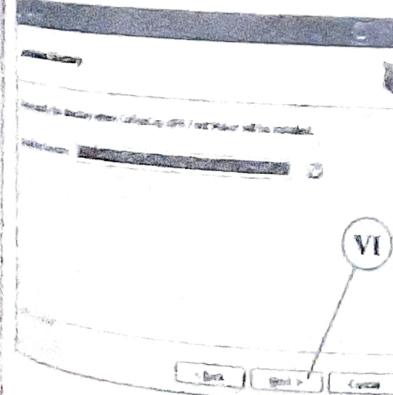
Now the setup wizard of this software will open as figure.



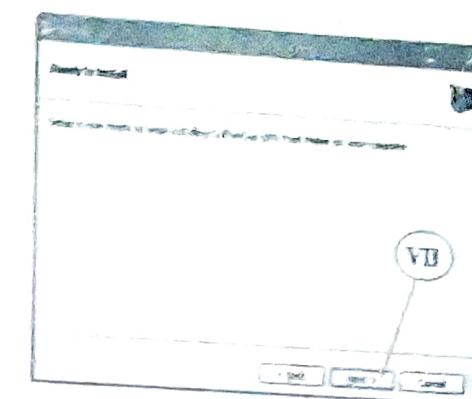
Click on the Next button then the license agreement window will appear as figure.



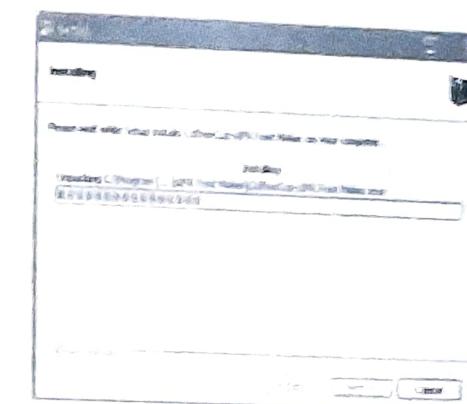
Click on then I accept the agreement radio button and then click on the Next button. Again click on Next button as figure.



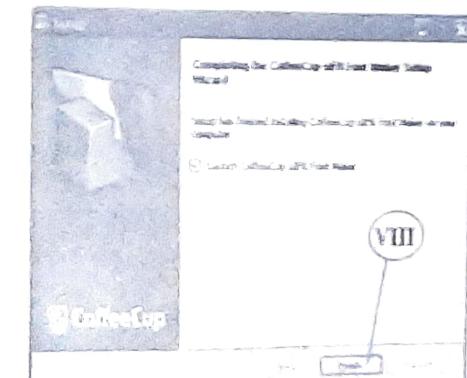
9. Once again click on the Next button as figure.



10. Then installation of CoffeeCup sIFR Font Maker will start as figure.



11. Then click on the Finish button as figure.



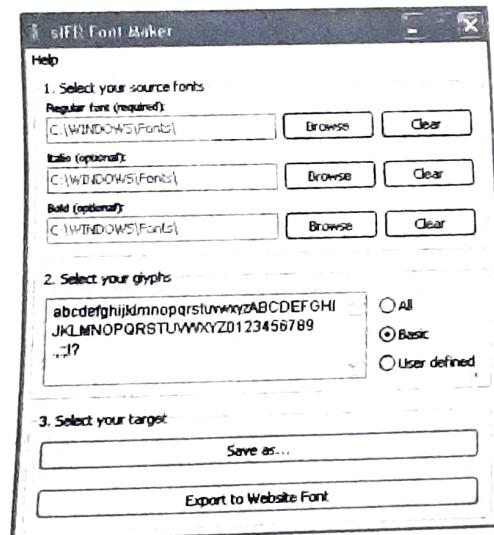
## Working with CoffeeCup sIFR Font Maker 1.0

CoffeeCup sIFR Font Maker allows you to convert any Latin-based font installed on your computer (including TTF, DFONT, OTF, and extensionless fonts) to SWF. Converting fonts to sIFR allows you to use them in CoffeeCup Website Font. Here's how it works:

**Step 1:** Click the Browse button to search your computer for the font you want to convert. Then, select the italic and bold versions of that font. This step is optional, but necessary if you want to be able to bold or italicize the font in Website Font.

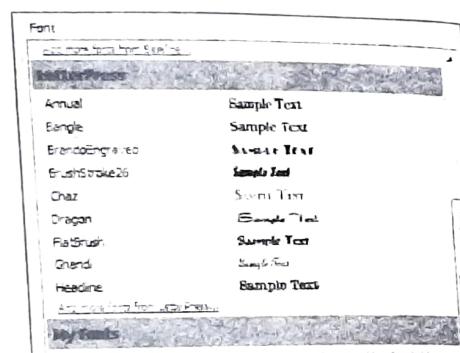
**Note:** Due to swfmill limitations, sIFR Font Maker cannot convert non-Latin-based fonts such as Chinese, Japanese, Hebrew, etc.

If you decide you don't want to use a font you have chosen, or if you have finished converting a font and want to convert another, click the Clear buttons to clear the **Regular**, **Italic**, and **Bold** fields.



**Step 2:** Select the glyphs (characters) you want to include in the conversion. The **All** option consists of every character, and **Basic** consists of every letter in capital and lowercase, the numbers 0-9, and basic punctuation. If you wish to select a different group of glyphs, select **User**

defined and type in the desired characters. **Step 3:** Once you have selected your fonts, the next step is to convert them. The **Save As...** location or under a different name. The **Export to Website Font** option converts and exports available under the **No Foundries** section of the Font pane. This area is not automatically refreshed, so to see your new fonts, navigate to **Font menu > Update font list**.



### About Swfmill

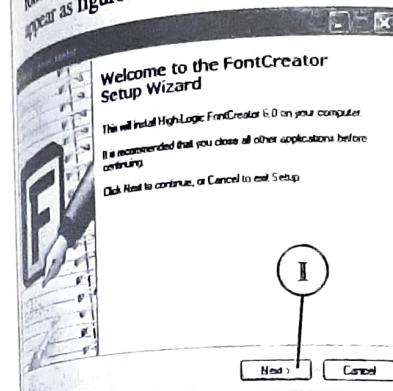
sIFR Font Maker is powered by swfmill, a free processor released under the GNU General Public License (GPL). Swfmill works well in most cases, but cannot convert every font. For more information about the GPL, refer to **Help > About sIFR Font Maker**.

### 2- FontCreator :-

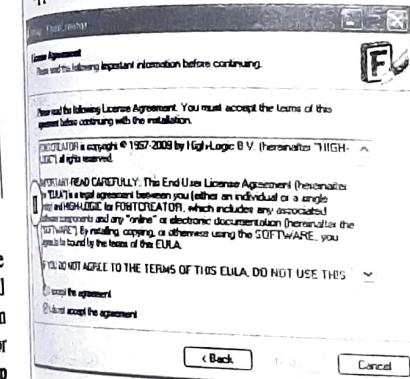
It is the most popular font editor. With more than 2.5 million downloads, FontCreator is the world's most popular font editing software. It has an intuitive interface that allows beginners to become productive immediately and it contains the powerful drawing tools that font designers require to create and edit high-quality *TrueType* and *OpenType* fonts.

Now let us see installation process of the FontCreator software.  
To install FontCreator follow the following steps:

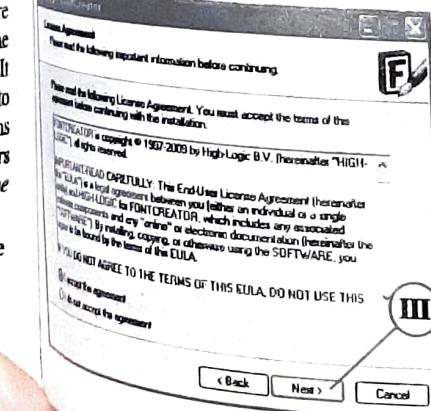
Click on the setup button of the FontCreator software (after free downloading). Then the following Setup-FontCreator window will appear as figure. Click on the Next button.



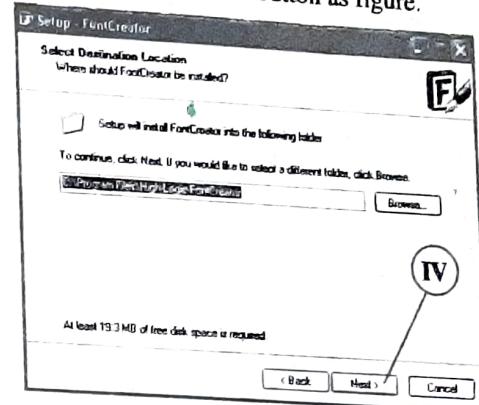
Then the license agreement window will appear as figure.



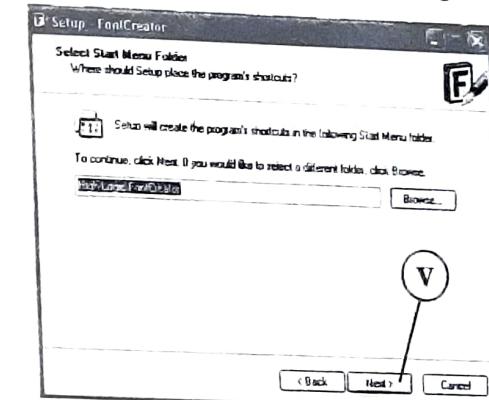
Click on then I accept the agreement radio button and then click on the Next button.



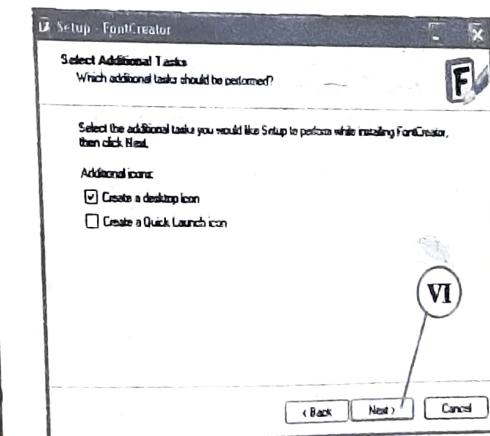
4. Again click on Next button as figure.



5. Once Again click on Next button as figure.

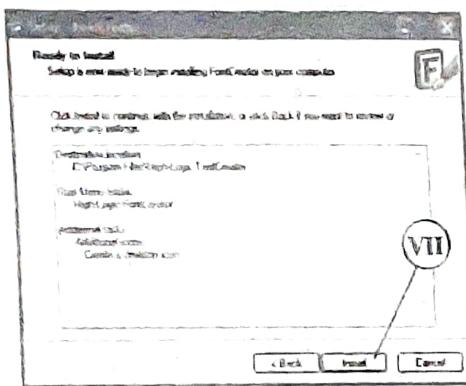


6. Again click on Next button as figure.

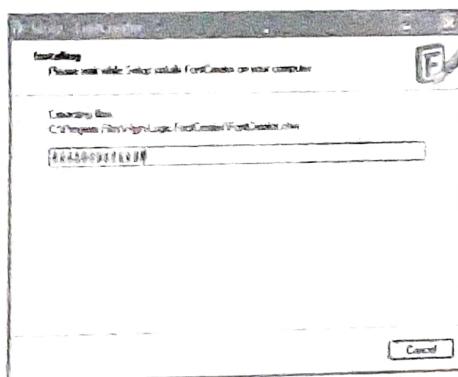


VI

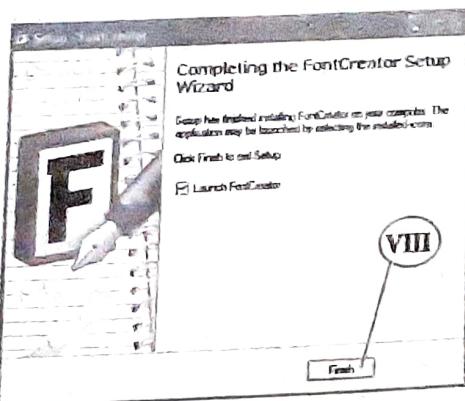
7. Again click on Install button as figure.



8. Then installation will be started as figure.



9. Finally click on the Finish button as figure.

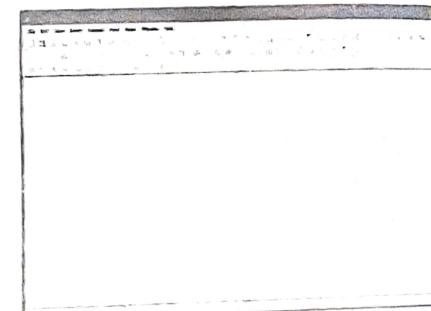


## Working with FontCreator:

To start FontCreator 6.0 click on the start → All Programs → High-Logic FontCreator → High-Logic FontCreator as figure.



Then the FontCreator 6.0 window appears as figure.

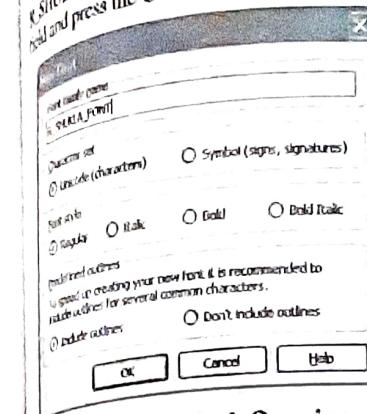


The quickest way to introduce you to FontCreator is to make a font. To make it personal we will describe how to make a font of your own handwriting.

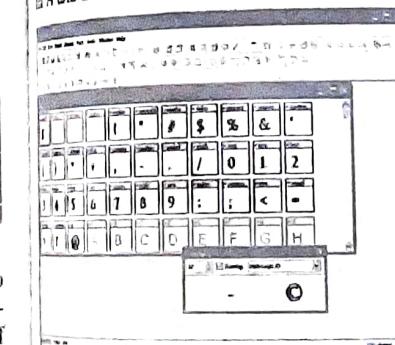
Click on the New option from the File menu to create a new font.

It is important to give our handwriting font a personal name, otherwise we will not be able to identify (and install) the font properly. The font name is not the same as the filename (for example *timesbd.ttf* has *Time New Roman Bold* as the font name, where *Times New Roman* is the font family name and *Bold* is the font style).

To give our font a name we type “*KAILA\_FONT*” in the Font family name field and press the OK button as figure.



Now you will see the **Glyph Overview** window. All cells have a caption and to give you a visual guidance, most cells contain a sample character shown as light blue outlines. Sample characters don't really exist in the font, you have to add this data for glyphs mapped to characters A and B.



### Edit a Glyph - Character A

From the **Glyph Overview** window we double-click on the cell with the caption “A”. Now we see the corresponding **Glyph Edit** window. Choose **Contour** from the **Insert** menu. During this operation a left mouse-click creates a point on the contour and a right mouse-click creates a point off the contour.

Press the **Apply** button (or click on the first point) to finish the contour. We create two contours in order to complete the glyph.

Contours that need to be filled black must have a clockwise direction. If we want to make a white area inside an existing contour we must make the direction of the new contour counter-clockwise.

The contours should stay within the visible area, this area is defined by the two black horizontal lines and the left and right bearings (vertical dashed lines). Make sure the glyph is within this area, parts outside this area will most likely be invisible. The left and right bearings can be changed by dragging them to their desired position. The glyph should be positioned between these lines, otherwise characters will overlap each other.

We close the **Glyph Edit** window to return to the **Glyph Overview** window.

### Edit a Glyph - Character B

To personalize character “B” we want to import an image of our own handwritten “B”. This image should not be too small or too large, we recommend an image dimension of 300x300 pixels. Bitmap, GIF and JPG images can be created with a paint program and if you have a scanner you could also import an image of your character “B” into the appropriate software.

From the **Glyph Overview** window we double-click on the cell with the caption “B”. Choose **Import Image** in the **Tools** menu. Press the **Load** button to select the image you want to use and press the **Generate** button. Now you will see your image in the **Glyph Edit** window. Finally make sure the contours are within the visible area (as described in the previous section); if necessary adjust the left and right bearings.

### Test and Install the Font

Now we have finished the first two characters we want to see the result. We test the new font by selecting **Test** in the **Font** menu. Type upper case “A” and “B” in the text field to see your creation.

In order to install a font we first need to save the file. Select Save as in the File menu and choose the name (for example C:\MyFonts\ R\_SHUKLA\_FONT.tff) and destination.

## CONVERSION TO AND FROM OF VARIOUS TEXT FORMATS:

**Overview of HTMLAsText utility:** HTMLAsText utility converts HTML documents to simple text files, by removing all HTML tags and formatting the text according to your preferences. This utility is released as freeware. You are allowed to freely distribute this utility via floppy disk, CD-ROM, Internet, or in any other way, as long as you do not charge anything for this. If you distribute this utility, you must include all files in the distribution package, without any alteration.

### Features of HTMLAsText utility

- HTMLAsText automatically removes all tags and scripts from the document.
- The remained text is formatted according to the number of characters per line that you select.
- All HTML entities (e.g.: &amp, &lt) are converted into the corresponding ASCII characters.
- Unordered lists (`<ul>` tag) and ordered lists (`<ol>` tag) are formatted accordingly. The bullet is beside the items of unordered lists are replaced by ASCII characters according to your selection.
- Definition lists are formatted by adding spaces in the left side of the definition lines.
- Optionally, centered and right-aligned paragraphs are formatted accordingly by adding space characters in the left side of the lines.
- Optionally, HTMLAsText allows you to add a line under each heading (`<h1>` - `<h6>` tags).
- Simple tables can be delimited by spaces, tab characters, commas, or CRLF.
- Preformatted text blocks (`<pre>` tag) are copied "as is", without formating the text.
- You can convert multiple HTML files in the same folder at once, by using wildcard. (e.g.: `c:\files\*.html`)

### Versions History

- Version 1.11:
  - The configuration is now saved to a file instead of the Registry.
- Version 1.10:
  - Fixed bug: String preceding a remark HTML section (`<!-- -->`) was missing in the converted text file.
- Version 1.06:
  - Added support for additional 30 escape codes (&xxxx;)
  - When using /run command-line, if a full path is not specified in source/destination files, the path of the cfg file is used.
- Version 1.05:
  - Fixed bug with `<>` tag out of a `<td>` tag in table
- Version 1.04:
  - New option: Scan Subfolders.
  - If you don't specify a folder in the wildcard fields, the current folder is used.
- Version 1.03:
  - Fixed problems with unclosed `<>` tag
- Version 1.02:
  - New formating option: Enclose bold text (`<b>` tag) with the characters that you select.
  - New formating option: Links Display Format
- Version 1.01:
  - Fixed bug: convert filenames with more than one dot (e.g: aaa.bbb.html) in multiple files mode.
  - Fixed bug: Convert unicode characters correctly (&#xxxx;)
- Version 1.00: First Release.

### Using HTMLAsText

HTMLAsText is a small and standalone executable. You don't need to install anything, and additional DLLs are not required for using this utility. Just copy the executable to any folder you like, and run it.

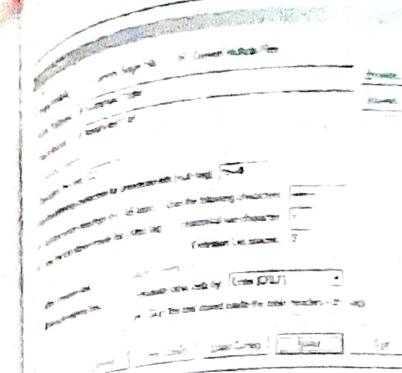


Figure: HTMLAsText utility

The main screen of HTMLAsText utility, you are allowed to set the configuration required for converting your HTML files to text files. The following options are available in HTMLAsText

**Single/Multiple:** In this option you should specify whether you want to convert a single file or multiple files:

**Convert Single File:** If you choose this option, the HTML file specified in 'HTML File' field will be converted into the text file specified in the 'Text File' field.

**Convert Multiple Files:** If you choose this option, the 'HTML Wildcard' field should contain wildcard for the HTML files you want to convert, with full path, for example:

C:\MyFiles\HTML\\*.html  
D:\Projects\HTML\Test\\*\\*.htm  
The 'Text Wildcard' field should contain wildcard for the text files you want to save, for example:  
C:\MyFiles\Text\\*\\*.txt

**Scan Subfolders:** If you select this option, HTMLAsText search for html files in all subfolders under the specified folder of 'HTML Wildcard' field.

Available only if 'Convert Multiple Files' is selected.

**Characters Per Line:** Maximum number of characters per line in the converted text file

- **Unordered List Characters:** The characters specified in this field will be used for replacing the bullets of unordered lists. You can specify here up to 5 characters (for nested lists).
- **Add line under headings:** If this option is checked, a line will be added under each heading. The line will be created by using the 6 characters that you specify - first character for `<h1>` tag, second character for `<h2>` tag, and so on.
- **Skip the text stored inside <title> tag:** Just like it sounds - if this option is checked, the text inside the `<title>` won't be added to the converted text file.
- **Horizontal rule character:** The character that will be used for displaying horizontal rule in the text file.
- **Definition List spaces:** Number of spaces to add to definition line. (`<dd>` tag)
- **Allow centered text:** If this option is checked, the text of centered paragraphs is centered by adding spaces in the left side of the lines.
- **Allow right-aligned text:** If this option is checked, the text of right-aligned paragraphs is aligned to the right by adding space characters.
- **separate table cells by\_ :** Determines how the cells of tables are separate: by space, by comma, by tab or CRLF (Enter).
- **Enclose bold text with the following characters:** If this option is checked, bold text (`<b>` tag) is enclosed with the start/end characters that you select.
- **Links Display Format:** Determines how to represent a link (`<a>` tag) in your text file. You can select one of the predefined formats, or create your own. the '%T' represents the text of the link, the '%L' represents the URL address.

After setting the conversion options according to your requirements, press the 'Convert' button in order to convert your HTML file(s) to text. You can also use the 'Save Config' option to save the current configuration, and then use it later by loading it again with 'Load Config'.

## Text to HTML converter (txt2html)

Now let us see "What is txt2html?"

The txt2html is a Perl program that converts plain text to HTML. It uses the HTML::TextToHTML perl module to do so. HTML::TextToHTML is a Perl module that converts plain text to HTML. It supports headings, lists, some tables, simple character markup, and hyperlinking, and is highly customizable. It recognizes some of the obvious structure of the source document (mostly whitespace and typographic layout), and attempts to mark that structure explicitly using HTML.

Now let us see "What is txt2html not?"

The txt2html is not a program to convert word processor files or other marked-up document formats. It is also not a program to convert HTML to text. Most HTML browsers do that. If you need to convert something other than plain text to HTML, or you need to convert from HTML, you should look for a more appropriate tool. The txt2html is not a program for automatically generating a table-of-contents from a file. If you want that, then use txt2html to generate a HTML file, and then use hmltoc or hypertoc on the HTML file.

## OBJECT LINKING AND EMBEDING CONCEPT

Object linking and embedding (OLE) is a process of exchanging information between applications. Using OLE, you can take selected objects or entire files from one application, called the source application, and place them into another application, called the destination application.

You can freely move objects and files between applications as long as all the applications involved support OLE. Word pad, MS- Word, CorelDRAW etc. lets you create and edit OLE objects, as well as insert objects and files created in other applications.

Linking results in a larger file size but is useful when you want to use an object or file in multiple files. To change every instance of the object or the file, you only need to change the

object in the source application. Linking is also useful when the destination application does not directly support files created in the source application. Embedding is useful when you want to include all objects in one file.

In this section, you'll learn about

1. inserting linked or embedded objects
2. editing linked or embedded objects

### Inserting linked or embedded objects

CorelDRAW lets you insert CorelDRAW files as linked or embedded objects in other applications. You can also insert a linked or embedded object in CorelDRAW. A linked object remains connected to its source file; whereas an embedded object is not linked to its source file but is integrated into the active document.

To insert a linked object follow the following steps :

1. In CorelDRAW, select an object.  
Make sure that the file is saved first.
2. Click Edit → Copy.
3. In the destination application, click Edit → Paste special.
4. Click Edit → Paste special in the destination application.
5. Enable the Paste link option.
- To insert a linked object into the active drawing from another application, click Edit → Insert new object. In the Insert new object dialog box, enable the Create from file option, browse to the file you want to insert, and enable the Link check box.

To insert an embedded object follow the following steps :

1. In the destination application, click Edit → Insert new object.
2. Enable the Create from file option.
3. Click the Browse button.
4. Click a filename.
- You can also create an embedded object by enabling the Create new option, and choosing the application in which you want to create the object from the Object type list box.

You can also insert an embedded object by clicking an object in the source application, and dragging it to the window of the source application.

### Editing linked or embedded objects

To edit a linked or embedded object. You can edit a linked object by editing its source file. Any changes you make to the source file are automatically applied to the linked object. You can also modify a linked object; for example, you can update a linked object, substitute the source file of a linked object for another, or break a link between a linked object and its source file.

To edit a linked or embedded object follow the following steps :

1. Double-click the linked or embedded object to start the source application.
2. Edit the object in the source application.
3. Save the changes in the source application.
4. Close the source application.
5. Return to the active application window to review the edits.

To modify a linked object follow the following steps :

1. Select a linked object using the Pick tool .
2. Click Edit ▾ Links.
3. Click one of the following buttons:
  - o Update now - updates the linked object to reflect changes made in the source file.
  - o Open source - opens the object in the source application.
  - o Change source - redirects the link to another file.
  - o Break link - disconnects the link so that the object is embedded in the file.

## BASIC OF FONT DESIGN:

### First steps in font design:

Yes, that you have decided to design your own font, where do you start? Well, you could start with a font that you previously hold the copy-right to, make a variety of changes and end up with a completely new font. But the actual fun

when designing your own fonts is drawing each individual letter and giving them a personality. But after you have a few font letters finished, you will realize that there is a method to the madness. It will make your job much easier if you make a decision on some basic measurements for your new font. How low do you want the bottom of the j or the q to extend? How tall do you want the letter 't' to be? How high do you want the top of the letter 'h' to be? Deciding on these few measurements and using them throughout the entire alphabet will give your font uniformity and make it easier to read. Well, it's your design and anything goes but below are some guidelines that can help you get started.



**Baseline:** Remember back when you first learned to write and your teacher told you to try to keep your letters on the lines of your paper? The baseline is the invisible line that the letters will sit on.

**Ascent:** This is the maximum distance above the baseline or the highest point for letters such as h and f.

**Descent:** This is the maximum distance below the baseline or the lowest point of any letters such as y and j.

**Font Height:** This is the total vertical height of your font or the distance between the maximum ascent and maximum descent numbers.

**X-Height:** This is the maximum height of the lower case letter such as m and n.

As a general rule, the ascent number is 4 times that of the descent number. For example, if the ascent number is 800, then the descent number would be 200 and the font height would be 1000.

## OVERVIEW OF SOME FONTS EDITING AND DESIGNING TOOLS:

When you cannot find the perfect font for your needs - make your own. But first, you will need the right kind of software for making digital type

and editing fonts. Following are the some important fonts editing and designing tools:

### 1. Overview of FontStruct:

**FontStruct**, which was opened to the public in April, is free, online tools that lets users speedily and easily create fonts by arranging geometrical shapes in a grid pattern, much like tiles or bricks. Working one letter at a time, users add and remove shapes including blocks and dots to accomplish a look they like. Once they're done building, **FontStruct** generates high-quality TrueType fonts, ready to use in any Mac or Windows application. Users can keep their "FontStructures" private, or they can share them with the **FontStruct** community for discussion, rating and downloading. They can also display them on other websites or blogs through the **FontStruct** widget.

### 2. Overview of FontCreator

**FontCreator** puts font creation within the grasp of the average PC user, typographers and graphic designers. The editor lets you easily select and modify the entire character set of any TrueType font and fonts based on OpenType font technology. Features include the ability to convert images to outlines, thus enabling you to create fonts with your own signature, logo and handwriting. The sensitive interface makes **FontCreator** the perfect tool for both new and experienced users. The advanced validation features make the design process easy and help you avoid common mistakes.

### What is New FontCreator version 6:

FontCreator version 6 contains many new features and improvements that will benefit type designers, font foundries, and power-users. The

most impressive new feature that makes designing fonts so much faster is direct import of vector-based images. This is the most reliable way to get illustrations made in vector-based image editing software (like Adobe Illustrator) into **FontCreator**.

### Key features of FontCreator:

- i. Create and edit TrueType and OpenType fonts
- ii. Redesign existing characters
- iii. Add missing characters
- iv. Convert vector and raster based images (e.g. a signature, logo or handwriting) to character outlines
- v. Edit or regenerate font names
- vi. Fix character mappings
- vii. Correct fonts that display incorrectly
- viii. Add or correct composite glyphs
- ix. Generate, modify and clean up kerning pairs
- x. Transform individual glyphs or an entire font (e.g. to make a bold version)
- xi. Preview fonts before installing
- xii. Install fonts in Windows
- xiii. Split TrueType Collection or Extract TrueType Fonts from TrueType Collection

### 3. Overview of CoffeeCup sIFR Font Maker 1.0:

CoffeeCup sIFR Font Maker allows you to convert any Latin-based font installed on your computer (including TTF, DFONT, OTF, and extensionless fonts) to SWF. Converting fonts to sIFR allows you to use them in CoffeeCup Website Font.

## SUMMARY

- Plain text Refers to textual data in ASCII format. In field of computer, plain text is a word used for an normal "unformatted" sequential file readable as textual matter without a large amount processing.
- Plain text is also called clear text.
- Plain text files can be opened, read, and edited with most text editors.

- Word pad, MS- Word, CorelDRAW etc. lets you create and edit OLE objects, as well as insert objects and files created in other applications.
- Linking results in a larger file size but is useful when you want to use an object or file in multiple files.
- Embedding is useful when you want to include all objects in one file.
- As a general rule, the ascent number is 4 times that of the descent number.
- FontStruct generates high-quality TrueType fonts, ready to use in any Mac or Windows application.
- FontCreator puts font creation within the grasp of the average PC user, typographers and graphic designers.

## EXERCISE

- What do you mean by Plain and Formatted text ?
- What is formatted text ? How do you format text in MS-Word ?
- What are differences between RTF and HTML text ?
- What do you mean by text preparation tools ? Explain any one Text preparation tool.
- Write all the steps to make your own font using any text preparation tool.
- What do you mean by conversion to and from of various text formats ? Explain.
- What is OLE ? Explain with suitable example.
- What are the basic of font design ? Explain.
- Explain some important fonts editing and designing tools.
- Write short note on the following :
  - OLE
  - RTF and HTML
  - FontCreator
  - Plain and Formatted text
  - Text to HTML Converter

## IMPORTANCE OF GRAPHICS IN MULTIMEDIA

Graphics may be used in many forms such as photos, charts, logos, environmental simulation etc. The familiar line, "A picture is worth a thousand words," is correct. Using an image in your print, marketing, education or any other field quickly and concisely shows a potential client what you are marketing/saying. Choosing the images to represent your equine business is an important marketing decision. Advertising images should grab your attention and also be an accurate representation of what you are marketing. Graphics help people to learn and keep more information from other forms of information. There are many kinds of graphics that are integrated into multimedia application. These are as follows:

1. Pictures, photographs and 3D pictures
2. Background
3. Button
4. Charts
5. Flow charts
6. Organization charts

Graphics are used in various field of our life such as:

- Web Designing
- Education
- Business
- Entertainment
- At Home
- Medical and Engineering
- Research

Generally we use graphics for web designing to fulfill various type of need for many person of different type of field such as Education, Business, Entertainment, Medical and Engineering, Research etc. So we are going to explain importance of graphics in Web Designing mainly.

### Graphics in Web Designing

Web graphics are as important as the content of your website. Good graphics can give your visitors/customers a creative thought of what they are looking at. You can add colors, visual appeal, to blow up a professional sense. Web sites

that are not filled with interesting graphics will not be viewed by many visitors. Photoshop, Flash and Dream weaver and fireworks are really great tools; you can use to create unique professional graphics. Graphic should be used to explain in the words. If your objective is to sell product then you just show your product through product pictures.

It's good to place web graphics in context with the information being presented. If you have product descriptions on your web site, then you should have the related graphic depiction next to them. It's better to use logos, cartoons, graphs and charts where they make a reasonable sense.

**During Web site designing remember the following basics Tips:**

- **Clarity in web page:** In a clear web the things should be placed and depicted according to their importance plus the related things must look relevant and related with the content.
- **Imagery:** Always try the level best to use a suitable image for best impact on the visitors.
- **Color:** Without color a page has no shimmer, with a balanced color scheme a page appears more well-mannered and living. Of course too much color create confusion in the minds of visitors Color should be used in a balanced way.
- **Color Contrast:** It is very important to have sufficient contrast between text and its background, therefore color contrast must have to be good and also relevant according to the nature of the site and graphics.
- **Readability:** Make sure not to change font sizes as they are a great differentiators, they show something important or a new section. Try to use sans-serif face for all body copy. Try to create emphasis through using underlines, bold and italics, but use them in sparing fashion.
- **Effective text:** Must use HTML text more often and properly as it is more effective than the other graphic word. In the web

environment, text has huge strengths. In many situations, using text delivers far better results than graphics.

**Page Layout:** The way elements are arranged on screen carries lots of meaning that we interpret when decoding web pages. The relative position implies relationships on lots of different levels. The key is to make sure you represent the correct relations.

**Alignment:** Alignment should have to directly visible on web pages. It looks clear and easily visible. Left-aligned text is easier to read than right-aligned text.

**3D Effect on the graphic design:** 3D creates a sense of space between different text and elements. 3-D illusion effects are powerful mode that can achieve great results. They can also be adding to overall page file size.

**Logo Design:** Logos are important in marketing because using your logo in the ad and in site helps visitors/potential customers to recognize your product and in understanding what the ad is all about, which helps in building trust ship and subsequent increase in sales.

**Navigation Buttons:** They are used to help the visitors navigate your web site. Your navigation should be placed on the top of the page under your logo, or down the left side.

You must take care on the subject of which graphic you like to show on the top of the screen mostly visitors ignore it and take it only as an advertisement. keep away from using graphic that has no relation with your text. Overusing graphics will only make the site look amateur. Make sure if you use web graphics as links that they work at all times. There is nothing worse than clicking on a graphic that does not work.

All these tips are important and they must have to be keeping in mind during graphic design. All graphic images on your web site should match in color, typeface, and special effects. You can use graphics in many of the ways on your web site. You can use them as markers, as links, as a branding mode and also as headings.

## VECTOR AND RASTER GRAPHICS

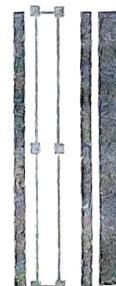
Now let us see "What are Vector and raster graphics? What are differences between them?"

There are two types of computer graphics - vector and raster. The raster graphic is composed of pixels and vector graphic is composed of drawing paths. It is important to understand the difference between these two types before you choose the graphics format.

### Vector Graphics

A vector graphic includes the drawing instructions other than the color value in pixels. These are made up of lines and curves defined by mathematical objects called vectors. Vectors describe an image according to its geometric characteristics. Vector Graphics typically are generated using drawing or illustration programs (e.g., Adobe Illustrator) and are composed of mathematically-defined geometric shapes-lines, objects and fills. Since vectors involve both magnitude and direction, vector elements therefore are comprised of line segments whose length represents magnitude and whose orientation in space represents direction.

Vector graphics are resolution-independent—that is, they can be scaled to any size and printed at any resolution without losing detail or clarity. Because vector elements are mathematically-defined, scaling simply requires modification of their mathematical locations. On the other hand, vector files do not support photographic imagery well and often can be problematic for cross-platform exchange. Vector graphics usually are saved as EPS format.



Vector Graphic contains drawing directions, like drawing a line, drawing a rectangle etc.

This makes vector graphics ideal for logo design. Creating a vector logo is more difficult but the effort pays for itself when the vector logo file is sent to printers or sign makers etc. The vector logo can be scaled up or down without losing quality and would enable smooth transition between various media.

### Bitmap Graphics (raster Graphics):

Bitmap images—technically called raster images—use a grid of colors known as pixels to represent images. Each pixel is assigned a specific location and color value. A bitmap is basically an array of pixels with values indicating the color. The bitmap sizes are defined in pixels. BMP, TIF, GIF, JPG, PNG and most other graphics formats are raster graphics. Since the sizes are measured in pixels, the print dimension depends on the resolution of the printer. BMP records every pixel in the image, so the size is very big even for small images.



Raster image is not scalable. The image degrades when it is scaled to larger size.

Now let us see an example. You generate a barcode with 1 inch wide and 0.75 inch tall. The display devices usually have a dpi of 96, which translate 96 pixels per inch. If you save the image into raster graphics format, you get a bitmap array with 96 pixels wide and 72 pixels in height. When you print from a laser printer at 600 dpi, the image shrink to 1/6 of the original size and become unreadable.

**Raster Graphic** graphics are produced by digital image capture devices: digital scanners or digital cameras, or by pixel editing programs (e.g., Adobe Photoshop). Raster images are composed of a matrix (grid) of bitmap of digital picture elements (pixels). Pixels are squares or rectangles described as black, white, and gray or color. Raster images typically are saved as TIFF format, but can be saved as EPS as well.

Whereas conversion from vector to raster is easily accomplished, raster conversion to vector is much more difficult (and often is not possible). Raster images typically are easily shared across various platforms, but can be more difficult than vector graphics to modify. As well, raster graphics are impacted by scaling. Creating a raster logo design using Adobe Photoshop might be ideal for web only usage but if you are serious about branding, then the resulting raster PSD logo file will be of limited use.

- ② Because computer monitors represent images by displaying them on a grid, both vector and bitmap data is displayed as pixels on-screen.

### IMAGE CAPTURING METHODS

There are various way to capture image using different image capturing device such as digital camera and scanner. Let us see "How capture image with the help of scanner ?"

To get image from a WIA (Windows Image Acquisition) Scanner follows the following steps

1. After installing software that come with your WIA (Windows Image Acquisition) Scanner connect your scanner to your computer
2. In Corel Paint Shop Pro Photo or any other image editing software, choose file → import → From Scanner or camera.
3. Then scanner is interface appears.
4. Put your image on the glass of the scanner.
5. Press copy button to start scanning operation.
6. Follow the instruction on your screen.

### VARIOUS ATTRIBUTES OF IMAGES

Now let us see "What are various attributes of Images?"

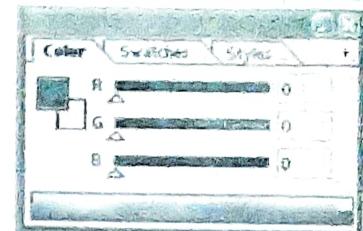
Images have the following four (4) attribute:

1. Size
2. Color
3. Depth
4. Image resolution

Now let us explain all these attributes of image one by one.

**1. Size:** The digital size of an image, measured in kilobytes (K), megabytes (MB), or gigabytes (GB). File size is proportional to the pixel dimensions of the image. Images with more pixels may produce more detail at a given printed size, but they need more disk space to store and may be slower to edit and print. For instance, a 1-by-1-inch, 200-ppi image contains four times as many pixels as a 1-by-1-inch, 100-ppi image and so has four times the file size. Image resolution thus becomes a compromise between image quality (capturing all the data you need) and file size. Another factor that affects file size is file format—due to varying compression methods used by GIF, JPEG, and PNG file formats, file sizes can vary considerably for the same pixel dimensions. In the same way, color bit-depth and the number of layers and channels in an image affect file size. Photoshop supports a maximum file size of 2 GB and maximum pixel dimensions of 30,000 by 30,000 pixels per image. This restriction places limits on the print size and resolution available to an image.

**2. Color :** Every Adobe Photoshop image has one or more channels, each storing information about color elements in the image. The number of default color channels in an image depends on its color mode. For example, a CMYK image has at least four channels, one each for cyan, magenta, yellow, and black information. Think of a channel as analogous to a plate in the printing process, with a separate plate applying each layer of color. In addition to these default color channels, extra channels, called alpha channels, can be added to an image for storing and editing selections as masks, and spot color channels can be added to add spot color plates for printing. An image can have up to 24 channels. By default, Bitmap-mode, grayscale, duotone, and indexed-color images have one channel; RGB and Lab images have three; and CMYK images have four. You can add channels to all image types except Bitmap-mode images.



**3. Depth :** Bit depth—also called pixel depth or color depth or only depth—measures how much color information is available to display or print each pixel in an image. Greater bit depth (more bits of information per pixel) means more available colors and more accurate color representation in the digital image. For example, a pixel with a bit depth of 1 has two possible values: black and white. A pixel with a bit depth of 8 has  $2^8$ , or 256, possible values. And a pixel with a bit depth of 24 has  $2^{24}$ , or roughly 16 million, possible values. Common values for bit depth range from 1 to 64 bits per pixel. In most cases, Lab, RGB, grayscale, and CMYK images contain 8 bits of data per color channel. This translates to a 24-bit Lab bit depth (8 bits x 3 channels); a 24-bit RGB bit depth (8 bits x 3 channels); an 8-bit grayscale bit depth (8 bits x 1 channel); and a 32-bit CMYK bit depth (8 bits x 4 channels). Photoshop can also read and import Lab, RGB, CMYK, and grayscale images that contain 16 bits of data per color channel.

**4. Image resolution :** the number of pixels displayed per unit of printed length in an image, usually measured in pixels per inch (ppi). In Photoshop, you can change the resolution of an image. In Photoshop, image resolution and pixel dimensions are interdependent. The amount of detail in an image depends on its pixel dimensions, while the image resolution controls how much space the pixels are printed over. Now let us see an example, you can modify an image's resolution without changing the actual pixel data in the image—all you change is the printed size of the image. On the other hand, if you want to maintain the same output dimensions,

changing the image's resolution requires a change in the total number of pixels. When printed, an image with a high resolution contains more, and therefore smaller, pixels than an image with a low resolution. For example, a 1-by-1-inch image with a resolution of 72 ppi contains a total of 5184 pixels (72 pixels wide x 72 pixels high = 5184). The same 1-by-1-inch image with a resolution of 300 ppi contains a total of 90,000 pixels. Higher-resolution images usually reproduce more detail and subtler color transitions than lower-resolution images. On the other hand, increasing the resolution of a low-resolution image only spreads the original pixel information across a greater number of pixels; it rarely improves image quality.

## VARIOUS IMAGE FILE FORMATS (FEATURES & LIMITATIONS)

- 1. BMP :** BMP stands for Bitmap Picture. BMP is a standard Windows image format on DOS and Windows-compatible computers. The BMP file extension normally represents that the file is an image. BMP files are normally used on Windows machines though many other operating systems have programs to view such files. BMPs can represent virtually any type of image imaginable, from photographs of cars to holiday clip-art.

BMP files are made up of pixels, tiny dots that represent color in an image. Some BMP files may only contain black-and-white images (1-bit), others images that have up to 16 colors (4-bit), other 256 colors (8-bit), some 65,536 colors (16-bit), and others 16 million (24-bit). The more colors that can be represented in a bitmap the larger the file.

You can shrink a bitmap's size to some extent and still retain much of the image quality. However, if you increase a bitmap's size, no new detail is automatically added. Thus, the more you resample a bitmap upward, the blockier and more jagged it will look as the pixels turn into larger blocks of the same color. This results in 'pixilated' low-quality images.

Virtually any image viewer/editor on Windows machines, and many on other operating systems, can view and edit bitmaps. BMP files are "uncompressed", meaning that computers perform no operations on these files to reduce their file size. Also, it means you can open and resave a bitmap as many times as you want and the file will remain looking the same (assuming you do not adjust the color depth), which is not the case for some other image file formats.

BMP format supports RGB, Indexed Color, Grayscale, and Bitmap color modes. You can specify either Windows or OS/2 format and a bit depth for the image. For 4-bit and 8-bit images using Windows format, you can also specify RLE compression. BMP images are normally written bottom to top; however, you can select the Flip Row Order option to write them from top to bottom. You can also select an alternate encoding method by clicking Advanced Modes.

- 2. EPS : Encapsulated PostScript (EPS)** is a standard file format for importing and exporting PostScript files. It is frequently a single page PostScript program that describes an illustration or a whole page. The purpose of an EPS file is to include it in other pages. Sometimes EPS files are called EPSF files. EPSF simply stands for Encapsulated PostScript Format. This file format can contain both vector and bitmap graphics and is supported by virtually all graphic, illustration, and page-layout programs. EPS format is used to transfer PostScript-language artwork between applications. An EPS file can contain any combination of text, graphics and images. While it is actually a PostScript file, it is the most versatile file format that is available. EPS-files usually contain a small preview image that is used to visualize the content of the file. This is done so that applications don't need a PostScript interpreter to display the content of the EPS file. Even office applications such as Microsoft Word can display the preview image. If an EPS file is sent to a printer that

doesn't support PostScript, it is once again this preview image that is printed. The quality will not equal that of the read EPS artwork but at least there is an image on the print-out. EPS files can be generated by all drawing applications as well as most layout applications. Image manipulation programs like Adobe Photoshop can also save bitmap images as EPS-files. Some printer drivers are also capable of generating EPS-files as well as PostScript files. EPS format supports Lab, CMYK, RGB, Indexed Color, Duotone, Grayscale, and Bitmap color modes, and does not support alpha channels. EPS does support clipping paths.

- 3. DIB: DIB** stands for **Device Independent Bitmap File**. A device-independent bitmap (DIB) is a format used to define device-independent bitmaps in various color resolutions. It is generic Windows or OS/2 bitmap graphic; much like a .BMP file, but without the BMP header; supports 1, 4, 8, and 24 bits per pixel if the image is uncompressed and 4 and 8 bits per pixel if the image uses RLE compression. The main purpose of DIBs is to permit bitmaps to be moved from one device to another (hence, the device-independent part of the name). A DIB is normally transported in metafiles (usually using the StretchDIBits() function), BMP files, and the Clipboard (CF\_DIB data format). DIB files are applied mainly in computer multimedia systems.

### Features in short:

**DIB-OS/2-RGB format supports 1, 4, 8, 24 bits per pixel - not compressed.**

**DIB-Windows-RGB format supports 1, 4, 8, 24 bits per pixel - not compressed.**

**DIB-Windows-RLE format supports 4, 8 bits per pixel - RLE compression.**

- 4. PICT :** PICT stands for Macintosh Picture. PICT is a file format that was developed by Apple Computer in 1984 as the native format for Macintosh graphics. PICT format is and **far and wide used among Mac OS graphics and page layout applications as an interme-**

**dary file format for transferring images between applications.** PICT format supports RGB images with a single alpha channel, and indexed-color, grayscale, and Bitmap-mode images without alpha channels. PICT format is particularly effective at compressing images with large areas of solid color. This compression can be dramatic for alpha channels with their large areas of white and black. When saving an RGB image in PICT format, you can choose either a 16-bit or 32-bit pixel resolution. For a grayscale image, you can choose from 2, 4, or 8 bits per pixel. PICT comes in two main flavors, corresponding to the two main revisions of QuickDraw:

- PICT files for version 1 of QuickDraw:** The original PICT format that was used on the original black and white Macintoshes which had QuickDraw 1.0. This version supports only monochrome graphics of limited size with a fixed resolution of 72 DPI.
- PICT files for version 2 of QuickDraw (Color QuickDraw):** This format supports large images.

- 5. PNG : PNG** stands for **Portable Network Graphics (PNG)** that is mainly developed as a patent-free alternative to GIF. The pronunciation 'Ping' is specifically mentioned in the PNG Specification. PNG was designed recently, with the experience advantage of knowing all that went before. The original purpose of PNG was to be a royalty-free GIF. PNG format is used for lossless compression and for display of images on the World Wide Web. Unlike GIF, PNG supports 24-bit images and produces background transparency without jagged edges; on the other hand, some Web browsers do not support PNG images. PNG format supports RGB, indexed-color, grayscale, and Bitmap-mode images without alpha channels. PNG preserves transparency in grayscale and RGB images. Image format that uses indexed colors and lossless compression (like a .GIF file), but without copy-

right limitations; cannot be animated like a GIF image, though the related MNG format can.

PNG images may also include an 8-bit transparency channel, which allows the colors in the image to fade from opaque to transparent. GIF images only support fully opaque or fully transparent pixels. PNG images are now supported by most Web browsers. PNG stores resolution internally as pixels per meter, so when calculating back to pixels per inch, some programs may show excessive decimal digits, perhaps 299.999 ppi instead of 300 ppi.

PNG has supplementary unique features, like an Alpha channel for a variable transparency mask. Its indexed color, palette values may have similar variable transparency values. PNG files may also contain an embedded Gamma value so the image brightness can be viewed properly on both Windows and Macintosh screens. These should be wonderful features, but in many cases these extra features are not implemented properly (if at all) in many programs, and so these unique features must be ignored for web pages. On the other hand, this does not interfere with using the standard features specifically for the effective and lossless compression. Netscape 4.04 and MS IE 4.0 browsers added support for PNG files on web pages, not to replace JPG, but to replace GIF for graphics. For non-web and non-graphic use, PNG would compete with TIFF. Different images will have varying compression sizes, but PNG is an excellent replacement for GIF and 24 bit TIFF LZW files.

6. **JPEG** : Joint Photographic Experts Group (JPEG or JPG) format is commonly used to display photographs and other continuous-tone images in hypertext markup language (HTML) documents over the World Wide Web and other online services. This is the right format for those photo images which must be very small files, for example, for web sites or for email. JPG is often used on

digital camera memory cards, but RAW or TIF format may be offered too, to avoid it. The JPG file is wonderfully small, often compressed to perhaps only 1/10 of the size of the original data, which is a good thing when modems are involved. However, this fantastic compression efficiency comes with a high price. JPEG format supports CMYK, RGB, and Grayscale color modes, and does not support alpha channels. Unlike GIF format, JPEG keeps all color information in an RGB image but compresses file size by selectively discarding data. A JPEG image is without human intervention decompressed when opened. A higher level of compression results in lower image quality, and a lower level of compression results in better image quality. In most cases, the Maximum quality option produces a result indistinguishable from the original. JPEG compression economizes on the way data is stored and also identifies and discards extra data, that is, information beyond what the human eye can see.

Because it discards data, the JPEG algorithm is referred to as "lossy". This means that once an image has been compressed and then decompressed, it will not be identical to the original image. In most cases, the difference between the original and compressed version of the image is indistinguishable.

In general, compressed JPEG images have compression ratios of between 5:1 and 15:1. You do not need to decompress images saved in the JPEG format. They are automatically decompressed when they are opened.

7. **TGA** : TGA stands for Truevision Targa format Bitmap graphics. TGA (Targa) format is designed for systems using the Truevision video board and is commonly supported by MS-DOS color applications. The TGA format file is widely used by high-end paint programs and ray tracing packages. It can handle images with up to sixteen million unique colors. It is an industry standard but is not as generally supported.

as PCX or TIFF formats. Targa format supports 16-bit RGB images (5 bits x 3 color channels, plus one unused bit), 24-bit RGB images (8 bits x 3 color channels), and 32-bit RGB images (8 bits x 3 color channels plus a single 8-bit alpha channel). Targa format also supports indexed-color and grayscale images without alpha channels. When saving an RGB image in this format, you can choose a pixel depth and select RLE encoding to compress the image. The Targa TGA format was developed by Truevision for their Targa and Vista products. TGA files may be saved compressed (run length encoded) or not compressed. While Windows does not recognize 16 & 32 bits per pixel, some applications will treat them as 24 bits per pixel. A 16 bits per pixel image will be up-graded to 24 bits per pixel, and a 32 bits per pixel image will be down-graded to a 24 bits per pixel image. This procedure will not affect the image since the 8 extra bits of a TGA 32 bits per pixel file are used to store Alpha or transparency information.

Features in short

- TGA format supports 8, 16, 24, 32 bits per pixel - not compressed.
  - TGA format supports 8, 16, 24, 32 bits per pixel - RLE compression.

- 8. **TIFF** : TIFF stands for **Tagged-Image File Format (TIFF)**. It is used to exchange files between applications and computer platforms. The Tagged Image File Format was primarily designed to become the standard format. In order to become the standard, the format was designed to handle just about any possibility. The result of this design provided the flexibility of an infinite number of possibilities of how a TIFF image can be saved. TIFF is a flexible bitmap image format supported by virtually all paint, image-editing, and page-layout applications. Also, virtually all desktop scanners can produce TIFF images. TIFF format supports CMYK, RGB, Lab, indexed-color, and grayscale images with alpha channels and

**Bitmap-mode images** without alpha channels. Photoshop can save layers in a TIFF file; however, if you open the file in another application, only the flattened image is visible. Photoshop can also save annotations, transparency, and multiresolution pyramids data in TIFF format. Tagged-Image File Format (TIFF) is used mainly for exchanging documents between different applications and different computer platforms.

The TIFF format uses 6 different encoding routines.

1. No-compression
  2. Huffman
  3. Pack Bits
  4. LZW
  5. Fax Group 3
  6. Fax Group 4

In addition it differentiates between types of images in 3 different categories:

- Black and white
  - Gray scaled
  - Colored

The TIFF format supports LZW method compression for image types.

### Features in short

- TIFF - with no compression format supports 1, 4, 8, 24 bits per pixel.
  - TIFF - Huffman format supports 1 bit per pixel.
  - TIFF - Pack Bits format supports 1 bit per pixel.
  - TIFF - LZW format supports 4, 8, 24 bits per pixel.
  - TIFF - Fax Group 3 format supports 1 bit per pixel.
  - TIFF - Fax Group 4 format supports 1 bit per pixel.

9. **GIF** : GIF stand for Graphics Interchange Format (GIF) . It is the file format commonly used to display indexed-color graphics and images in hypertext markup language (HTML) documents over the World Wide Web and other online services. GIF format preserves transparency in indexed-color

images; however, it does not support alpha channels. The CompuServe GIF is commonly used to upload documents to the CompuServe Information Service and to pass documents between other types of computers. The idea behind designing GIF files was to create the smallest possible image file for uploading and downloading from electronic Bulletin Board Systems (BBS), thus producing a highly compressed format that minimizes file transfer time over phone lines. The compression is accomplished by using the LZW method for indexed color tables.

There are two GIF file versions: 87a and 89a.

Both versions may use an encoding method referred to as interlacing. When an image is saved by using four passes instead of just one, it is called interlacing. On each pass, certain lines of the image are saved to the file. If the program decoding a GIF file displays the image as it is decoded, the user will be able to see the four passes of the decoding cycle. This will allow the user to get a good idea of what the image will look like before even half of the image is decoded. GIF files may contain multiple images.

Features in short:

- **GIF Files can range from monochrome to 256-color.**
- **GIF - version 87a Non-Interlaced supports 1, 4, 8 bits per pixel.**
- **GIF - version 87a Interlaced supports 1, 4, 8 bits per pixel.**
- **GIF - version 89a Non-Interlaced supports 1, 4, 8 bits per pixel.**
- **GIF - version 89a Interlaced supports 1, 4, 8 bits per pixel.**

**10. PCX :** PCX format, well-known by Zsoft for its PC Paintbrush software, is commonly used by IBM compatible computers. With no standard to the industry, this format became the standard by default. This format is

supported by more applications than any other format. Version 3 does not contain palette information. Some applications will override this by using the default VGA colors used by Windows as the palette. This may result in a different looking images when using different viewers.

Most PC software support version 5 of the PCX format.

Features in short:

- **PCX - version 0 format supports 1 bit per pixel.**
- **PCX - version 2 format supports 1, 4 bits per pixel.**
- **PCX - version 3 format supports 1, 4 bits per pixel.**
- **PCX - version 5 format supports 1, 4, 8, 24 bits per pixel.**

## GRAPHICS FILE FORMATS CONVERSION

The file formats conversion is a process in which we can convert one format to another format with the help of various software tools such as Adobe Photoshop, Core PHOTO-PAINT etc. Now let us see various methods to save file in different format in Corel draw and converting them from one format to another format using Core PHOTO-PAINT.

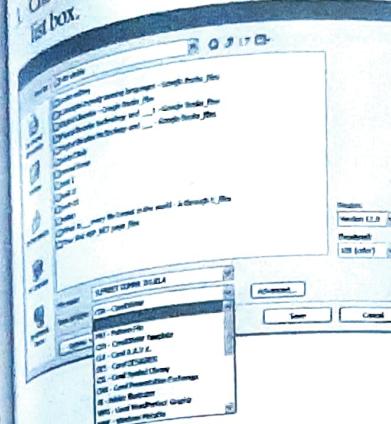
### Saving a file in different format:

To save a file to a different format in Corel draw-12 follow the following steps :

1. Click File ➤ Save as.

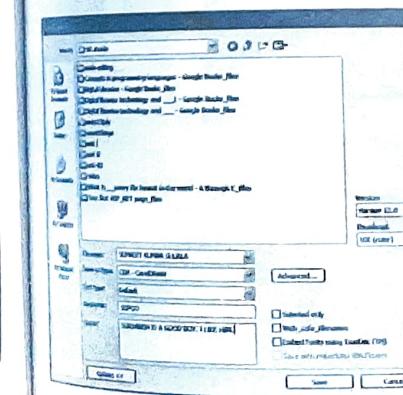


Choose the folder where you want to save the file.  
Choose a file format from the Save as type list box.

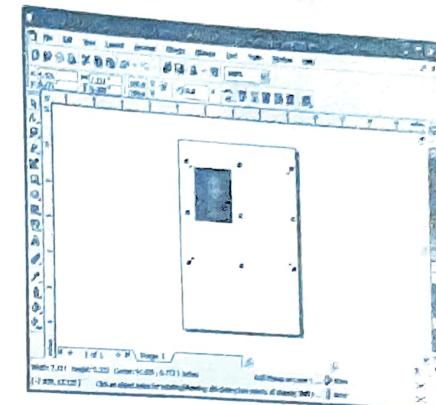


4. Type a filename in the **File name** list box.
5. Click **Options**, and enable any of the following active check boxes:

- **Selected only** — saves only the objects selected in the active drawing
- **Web safe filenames** — replaces the white space in a filename with an underscore. Special characters are replaced by characters suitable for Web-based filenames.
- **Embed fonts using TrueDoc** — lets you save fonts to the file using TrueDoc
- **Save with embedded VBA project** — lets you save, with the file, macros you have created in the VBA editor



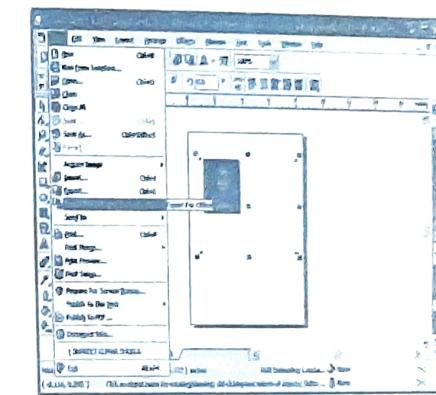
6. Click **Save**.



Therefore your file will be saved in your desired format.

To export to Microsoft Office or WordPerfect Office follow the following steps :

1. Click **File ➤ Export for Office**.



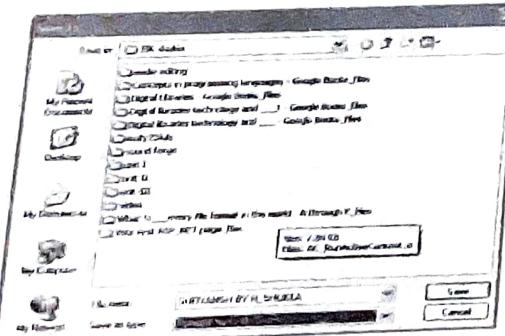
2. From the **Export to** list box, choose one of the following:
  - **Microsoft Office**
  - **Corel WordPerfect Office**
3. From the **Graphic should be best suited for** list box, choose one of the following:
  - **Compatibility**
  - **Editing**



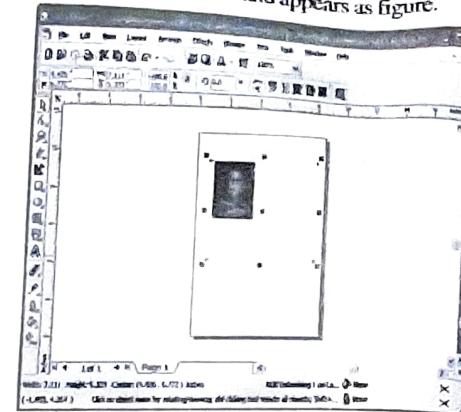
4. From the **Optimized for** list box, choose one of the following options:
- Presentation**
  - Desktop printing**
  - Commercial printing**



5. Click **OK**.  
 6. Locate the folder where you want to save the file.  
 7. Type a filename in the **Filename** list box.  
 8. From the **Save as type** list box, choose one of the following file formats:
- PNG - Portable Network Graphics**
  - BMP - Windows bitmap**



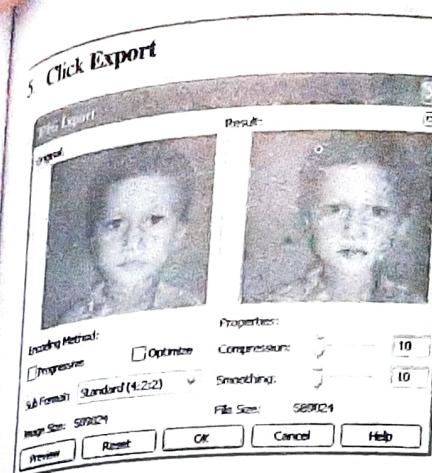
9. Finally click on the save button. After this your file will be saved and appears as figure.



**Conversion one file format to another format (from PNG to JPEG or JPG) :**

#### To export a JPEG file

1. In Corel PHOTO-PAINT-12 Click **File** → **Export**.
2. Locate the folder where you want to save the file.
3. Choose **JPG - JPEG bitmaps** from the **Save as type** list box.
4. Type a filename in the **File name** list box.

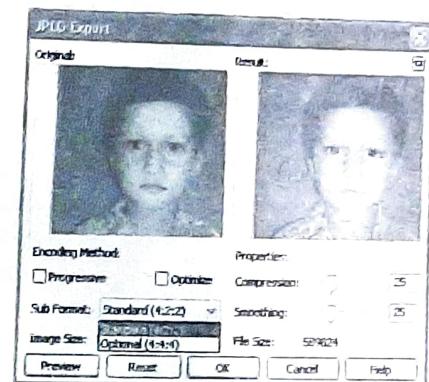


6. In the **Convert to bitmap** dialog box, adjust any of the settings.



8. In the **Encoding method** area, enable one of the following check boxes:

- Progressive** — loads the image gradually in certain browsers so that you can see portions of the image before it finishes loading
  - Optimize** — uses the optimal encoding method to produce the smallest file size
9. From the **Sub format** list box, choose one of the following encoding methods:
- Standard (4:2:2)** — creates a smaller file with some image quality loss
  - Optional (4:4:4)** — creates a larger file, but preserves image quality



10. Finally click on the **OK** button and therefore your file will be converted from PNG to JPEG format.

## SUMMARY

- Graphics may be used in many forms such as photos, charts, logos, environmental simulation etc.
- Graphics help people to learn and keep more information from other forms of information.
- Generally we use graphics for web designing to fulfill various type of need for many person of different type of field such as Education, Business, Entertainment, Medical and Engineering, Research etc.
- There are two types of computer graphics - vector and raster.

## EXERCISE

1. What are importance of graphics in multimedia ?
2. What are importance of graphics in Web designing ? Explain.
3. What are vector graphics and raster graphics ? Explain features and limitations of vector and raster graphics.
4. What do you mean by image capturing methods ?
5. What are various attributes of images ? Explain.
6. Write short note on the following :
  - (i) Image size
  - (ii) Image color
  - (iii) Color-Depth (Bit-Depth or Pixel Depth)
  - (iv) Image Resolution
  - (v) Image formats
7. Explain various Image file formats.
8. Write short note on the following :
 

<ol style="list-style-type: none"> <li>(i) Image for Web</li> <li>(iii) BMP</li> <li>(v) PNG</li> <li>(vii) JPEG</li> </ol>	<ol style="list-style-type: none"> <li>(ii) TIF format</li> <li>(iv) EPS</li> <li>(vi) GIF</li> <li>(viii) TGA</li> </ol>
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9. Explain differences between Raster and Vector graphics.
10. Explain the following :
  - (i) Vector graphics
  - (ii) Bitmap/Raster graphics
  - (iii) PICT
  - (iv) DIB
11. What do you mean by graphics file formats conversion ? How do you convert a graphics file from PNG to JPEG/JPG ?