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PhotoPat Description

PhotoPat is a truly unique Windows image processing package. Bitmap images are read in (or transferred via the Window's Clipboard) and then converted into "color-by-number" patterns. A sophisticated algorithm is used to optimally select pixels into appropriate color-balanced pieces. B-spline based edge detection techniques are then used to construct the piece outlines. A user-definable palette (with as many as 240 colors) is used in matching up the regions. The user is also able to control the number of pieces allowing for designs of different complexity. The pattern may be customized by several means including line color and style, font selection, and a grid. A selection of palettes and sample images are provided. Various scaling options are available when printing allowing for poster-size output. Patterns can be saved as bitmap images (in a BMP format) or as vector output (in HPGL and DXF formats)

Patterns generated by PhotoPat are extremely photo-realistic, making them quite different for those found in Children's "color-by-number" kits. PhotoPat patterns can use colors from the entire set of crayons, making the spectrum of available shades and tints much greater than an 8-color kit. Because PhotoPat "averages" and "optimizes" the color matching, the resulting drawn pictures closely match the original image.

Drawing the pattern is quite a challenge and makes for an entertaining puzzle. It can take up to an hour to carefully draw in the pattern, during which time your child (or even you!) will be totally immersed, particularly if the pattern has some relevance (like a picture of him/herself).

Applications for PhotoPat include "color-by-number" designs and puzzles, sign making, stain-glass design, needle craft work, etc.

PhotoPat has been designed to be a well behaved Windows Application making it easy to learn and use. Features include a simple setup program, context sensitive help, standard looking Windows menus with dialogs, a toolbar, a status bar, and clipboard support.

To create a pattern, open up a 256 color BMP image (or copy one in from the clipboard) and select Pattern/CREATE PATTERN!! . In moments the pattern will be displayed on your screen. You are then able to print the pattern out (along with a color chart), or save it to a 256 color BMP image file.

PhotoPat 1.5 is a product of Rainbow Scan, Inc.
Copyright © 1994 All Rights Reserved.

Freely distributed installation compression program is LHARC:
LHA's SFA 2.13S © Yoshi, 1991

Detail Areas

Detail areas are regions in the image which contain important visual information that you may want to preserve (or emphasize) during the process of creating a pattern. To define an area, simply hold the left mouse button down and drag the cursor so that a detail area is drawn. Many detail areas can be defined over the same image.

Creating a Palette

A palette is a set of colors that you want to make a pattern with. When the pattern is created, the colors of the pieces are matched to the closest palette color. There is always a current palette which is used when running PhotoPat. To create a new palette select PALETTE/NEW from the menu. To modify the current palette select PALETTE/EDIT. To change the current palette select PALETTE/OPEN. Note that changing the palette will remove all existing patterns.

The file extension for PhotoPat palettes is ".PAL". The format of this file is unique to PhotoPat.

Colors in the Palette may be added to the end (ADD COLOR), inserted in the middle (INSERT COLOR), or deleted (DELETE COLOR). A palette color can be moved to by single clicking and edited by double clicking. To add a color, the color name, identifier, and definition need to be specified. The color name is used as a description when the palette (and other reports) are printed out. The identifier is used as identification on the pattern. The definition describes the color (either a Red-Green-Blue or Hue-Saturation-Luminous scale may be used.)

Using PhotoPat with Microsoft Paintbrush

Microsoft Paintbrush is a general painting program which is included with the Windows release. It is generally found in the Accessories Group.

You can use Paintbrush as a quick way of coloring in the patterns. This makes for a fun and creative puzzle.

When you create a pattern in PhotoPat do the following:

- o Set the line style in the Design Pattern dialog to a solid thick line. This will allow you to use the paint roller in Paintbrush to fill in the pieces.
- o If you want to "color-by-number" with the colors in Paintbrush, create the pattern using pbrush.pal as the palette. Also make sure the color ids are displayed and the pieces are not displayed. The colors in Paintbrush are numbered going left-to-right, top-to-bottom:

1	2	3	4	5	6	7	8	9	1	1	1	1	1
									0	1	2	3	4
1	1	1	1	1	2	2	2	2	2	2	2	2	2
5	6	7	8	9	0	1	2	3	4	5	6	7	8

- o If you don't want to "color-by-number" in Paintbrush, make sure the color ids are not displayed and the pieces are not displayed. You can have some creative fun filling in the pieces with random colors.

- o Use the Clipboard to transfer to image over to Paintbrush and color in using the paint roller. Be careful not to color the outline!

Coloring with Crayons

Here are some tips when coloring with crayons:

- o You can easily make poster size prints by scaling. This will help by enlarging the smallest pieces.
- o Keep the crayons sharp.
- o Print out the Palette so that you have an easily accessible list of the crayon colors and their ids.
- o Divide the crayons into groups of 16 (typically how they are packaged anyway) and color one group at a time.
- o Have fun!

File menu commands

The File menu offers the following commands:

<u>New</u>	Creates a new image.
<u>Open</u>	Opens an existing image. Both BMP and PCX file formats may be opened.
<u>Close</u>	Closes an opened image.
<u>Save</u>	Saves an opened image using the same file name.
<u>Save As</u>	Saves an opened image to a specified file name.
<u>Print</u>	Brings up the print dialog where you can select to print the image, the pattern, and/or several reports.
<u>Print Preview</u>	Brings up the print dialog where you can select to preview the image, the pattern, and/or several reports as they would appear printed.
<u>Print Setup</u>	Selects a printer and printer connection.
<u>Exit</u>	Exits PhotoPat

Edit menu commands

The Edit menu offers the following commands:

<u>Undo</u>	Reverse previous image modifying operation.
<u>Copy</u>	Copies the entire image to the clipboard..
<u>Paste</u>	Replaces the current image with the image in the clipboard.
<u>Delete</u>	Deletes the generated pattern. The image remains the same.
<u>Pattern</u>	

View menu commands

The View menu offers the following commands:

<u>Toolbar</u>	Shows or hides the toolbar.
<u>Status Bar</u>	Shows or hides the status bar.
<u>Pattern</u>	Shows or hides the pattern.
<u>Image</u>	Shows or hides the image.

Image menu commands

The Image menu offers the following commands:

<u>Flip Vertical</u>	Flips the image about its center vertical axis.
<u>Flip Horizontal</u>	Flips the image about its center horizontal axis.
<u>Rotate 90 Degrees</u>	Rotates the image 90 degrees counterclockwise.
<u>Rotate 180 Degrees</u>	Rotates the image 180 degrees counterclockwise.
<u>Rotate 270 Degrees</u>	Rotates the image 270 degrees counterclockwise (or 90 degrees clockwise).
<u>Crop</u>	Crops the image to the selected region.
<u>Brightness/Contrast</u>	Allows you to adjust the brightness and contrast in the image.
<u>Blur</u>	Blurs the image.
<u>Sharpen</u>	Sharpens the image.
<u>Edge Detection</u>	Emphasizes edges in the image.
<u>Emboss</u>	Embosses the image.
<u>Gray Scale</u>	Converts the image to gray scale colors.
<u>Invert Colors</u>	Inverts the colors in the image
<u>Resample</u>	Allows you to resample (change resolution) of the image.
<u>Information</u>	Displays information about the image.
<u>Zoom 25%</u>	Zooms the image by 25%
<u>Zoom 33%</u>	Zooms the image by 33%
<u>Zoom 50%</u>	Zooms the image by 50%
<u>Zoom 100%</u>	Zooms the image by 100%
<u>Zoom 150%</u>	Zooms the image by 150%
<u>Zoom 200%</u>	Zooms the image by 200%
<u>Zoom 250%</u>	Zooms the image by 250%
<u>Zoom 300%</u>	Zooms the image by 300%
<u>Zoom 400%</u>	Zooms the image by 400%
<u>Zoom 600%</u>	Zooms the image by 600%
<u>Zoom 800%</u>	Zooms the image by 800%

100% - No Zoom
Zoom In
Zoom Out

Display the image at normal resolution (no zoom)
Zooms in on the image by one step
Zooms out of the image by one step.

Pattern menu commands

The Pattern menu offers the following commands, which enable you both create a pattern and design several features of it as well.

CREATE PATTERN!
Design Pattern
Statistics
Save Pattern As

Creates a pattern for the image.
Allows you to design various pattern features.
Display information about the pattern.
Lets you save the pattern in one of several formats.

Palette menu commands

The Palette menu offers the following commands, which enable you to design and select palettes to match your pattern with.

<u>New</u>	Creates a new palette.
<u>Open</u>	Opens an existing palette.
<u>Edit</u>	Allows you to edit the colors in the current palette
<u>Print</u>	Prints the current palette
<u>Save</u>	Save the current palette
<u>Save As</u>	Saves the current palette to a specified file name.

Reports menu commands

The Reports menu offers the following commands, which enable you to print reports about your palette and pattern.

<u>Palette</u>	Prints a report of the palette (identifiers and colors).
<u>Colors</u>	Prints a report showing the colors used in the pattern.
<u>Pieces</u>	Prints a report showing the pieces in the pattern

Window menu commands

The Window menu offers the following commands, which enable you to arrange multiple views of multiple images in PhotoPat

<u>Cascade</u>	Arranges windows in an overlapped fashion.
<u>Tile</u>	Arranges windows in non-overlapped tiles.
<u>Arrange Icons</u>	Arranges icons of closed windows.
<u>Window 1,</u> <u>2, ...</u>	Goes to specified window.

Help menu commands


The Help menu offers the following commands, which provide you assistance with this application:

<u>Registration</u>	Provides information on registering PhotoPat
<u>Distribution</u>	Explains how you can distribute PhotoPat
<u>Disclaimer</u>	Disclaimer on PhotoPat
<u>Shareware</u>	Explains what Shareware is
<u>Credits</u>	Gives credit where credit is due
<u>Index</u>	Offers you an index to topics on which you can get help.
<u>Using Help</u>	Provides general instructions on using help.
<u>Search for Help</u>	Allows you to search for topics based on key words.
<u>On...</u>	
<u>About</u>	Displays the version number and registration information for PhotoPat.

New command (File menu)

Use this command to create a new image in PhotoPat. You can open an existing document with the Open command. Bitmaps may be copied into the new image from the clipboard,

Shortcuts

Toolbar: 
Keys: CTRL+N

Open command (File menu)

Use this command to open an existing image in a new window. You can open multiple documents at once. Use the Window menu to switch among the multiple open images. See Window 1, 2, ... command.

You can create new images with the New command.

Shortcuts


Toolbar: 
Keys: CTRL+N

Print command (File menu)

Use this command to print the active image and pattern . The print choices dialog will come up.

The printed page will match the display at the time of printing. You can control what is displayed by using the View menu.

Shortcuts

Toolbar: 
Keys: CTRL+P

Print Preview command (File menu)

Use this command to preview what a the printed pages would look like. The print choices dialog will come up.

While you are previewing, you are able to view two pages at a time. You can zoom in on the previewed pages as well.

Print Setup command (File menu)

Use this command to set up the active printer. Pages printed from PhotoPat will be directed to this printer

Close command (File menu)

Use this command to close the active image . PhotoPat suggests that you save changes to your image before you close it. If you close an image without saving, you lose all changes made since the last time you saved it. Before closing an untitled image, PhotoPat displays the Save As dialog box and suggests that you name and save the image.


You can also close an image by using the Close icon on the image's window, as shown below:



Save command (File menu)

Use this command to save the active image to its current name and directory. When you save an image for the first time, PhotoPat displays the Save As dialog box so you can name your image. If you want to change the name and directory of an existing image before you save it, choose the Save As command.

Shortcuts

Toolbar: 
Keys: CTRL+S

Save As command (File menu)

Use this command to save and name the active image. PhotoPat displays the Save As dialog box so you can name your image.

To save an image with its existing name and directory, use the Save command.

Exit command (File menu)

Use this command to end your PhotoPat session. You can also use the Close command on the application Control menu. PhotoPat prompts you to save images with unsaved changes.

Shortcuts

Mouse: Double-click the application's Control menu button.



Keys: ALT+F4

1, 2, 3, 4 command (File menu)


Use the numbers and filenames listed at the bottom of the File menu to open the last four image files you closed. Choose the number that corresponds with the image you want to open.

Undo/Can't Undo command (Edit menu)

Use this command to reverse the last image editing action, if possible. The name of the command changes, depending on what the last action was.

The last 30 operations may be undone.


Shortcuts

Toolbar: 
Keys: CTRL+Z or
ALT-BACKSPACE

Copy command (Edit menu)

Use this command to copy the entire image onto the clipboard. Copying data to the clipboard replaces the contents previously stored there. PhotoPat uses a CF_BITMAP clipboard format for the image which is widely accepted by other image/paint programs including Paintbrush


Shortcuts

Toolbar: 
Keys: CTRL+C

Paste command (Edit menu)

Use this command to replace the current image with a copy of the clipboard contents. This command is unavailable if the clipboard is empty. PhotoPat accepts both CF_BITMAP and CF_DIB clipboards formats which are commonly used formats for images.

Shortcuts

Toolbar: 
Keys: CTRL+V

Delete Pattern command (Edit menu)

Use this command to delete the pattern associated with the image. This command is unavailable if no pattern has been generated.

Several operations will also cause the pattern to be deleted:

- Changing the palette.

- Resampling the image to a different resolution.

This operation cannot be undone.

Toolbar command (View menu)

Use this command to display and hide the Toolbar, which includes buttons for some of the most common commands in PhotoPat, such as File Open. A check mark appears next to the menu item when the Toolbar is displayed.

See [Toolbar](#) for help on using the toolbar.

Status Bar command (View menu)

Use this command to display and hide the Status Bar, which describes the action to be executed by the selected menu item or depressed toolbar button, and keyboard latch state. A check mark appears next to the menu item when the Status Bar is displayed.

See [Status Bar](#) for help on using the status bar.

Pattern command (View menu)

Use this command to display and hide the Pattern. If no pattern has been generated, then this command will be disabled. A check mark appears next to the menu item when the Pattern is displayed.

Shortcuts

Toolbar:



Image command (View menu)

Use this command to display and hide the Image. Hiding the image when the pattern is visible allows for better viewing of the pattern. A check mark appears next to the menu item when the Image is displayed.


Shortcuts

Toolbar:




Flip Horizontal command (Image menu)

Use this command to flip the image about its center horizontal axis.


You can undo this operation by selecting the Undo button .

Shortcuts


Toolbar: 

Flip Vertical command (Image menu)

Use this command to flip the image about its center vertical axis.


You can undo this operation by selecting the Undo button .

Shortcuts


Toolbar: 

Rotate 90 Degrees command (Image menu)

Use this command to rotate the image about its center point by 90 degrees counterclockwise.


You can undo this operation by selecting the Undo button .

Shortcuts


Toolbar: 

Rotate 180 Degrees command (Image menu)

Use this command to rotate the image about its center point by 180 degrees counterclockwise.


You can undo this operation by selecting the Undo button .

Shortcuts


Toolbar: 

Rotate 270 Degrees command (Image menu)

Use this command to rotate the image about its center point by 270 degrees counterclockwise.


You can undo this operation by selecting the Undo button .

Shortcuts


Toolbar: 

Crop command (Image menu)

Use this command to crop the image using the selected region as the new contents. If no region is selected, this command is disabled. A region is selected by holding down the left mouse button and dragging a rectangular area.


You can undo this operation by selecting the Undo button .

Shortcuts

Toolbar: 


Brightness/Contrast command (Image menu)

Use this command to adjust the Brightness and Contrast in the image. The Brightness/Contrast dialog will come up.

You can undo this operation by selecting the Undo button .


Blur command (Image menu)

Use this command to blur the image. Blurring results in a smoother looking image and reduces the amount of color changes from pixel to pixel.

You can undo this operation by selecting the Undo button .


Sharpen command (Image menu)

Use this command to sharpen the image. Sharpening results in a crisper looking image and enhances the color changes from pixel to pixel.

You can undo this operation by selecting the Undo button .


Edge Detection command (Image menu)

Use this command to edge detect the image. Edge Detection emphasizes any edges in the original image.

You can undo this operation by selecting the Undo button .


Emboss command (Image menu)

Use this command to emboss the image. Embossing creates a raised up effect in the image. The image looks as if it consists of 3-D layers of metal or stone.

You can undo this operation by selecting the Undo button .


Gray Scale command (Image menu)

Use this command to convert the image to gray scale. The image will be displayed using colors along the gray scale (black to gray to white).

You can undo this operation by selecting the Undo button .

Invert Colors command (Image menu)


Use this command to invert the colors in the image. The colors are inverted based on a RGB red-green-blue scale. For example a pixel with a color of all red, no green, and all blue (magenta) will be changed to no red, all green, and no-blue (green). This can create some bizarre and fun effects. Inverting the image twice will return to the original image.

You can undo this operation by selecting the Undo button .

Resample command (Image menu)

Use this command to change the resolution of the image. The Resample Dialog will come up.

The pixel's color information is averaged into the new pixels in the resampled image. The resampling can be done in either the x (width) or y (height) or both direction(s) and doesn't have to be proportional in both directions. This can create some interesting scaling effects.


You can undo this operation by selecting the Undo button .

Information command (Image menu)

Use this command to bring up the Image Info dialog. The information displayed includes resolution, color, and original format.


Zoom 25% command (Image menu)

Use this command to zoom in 25% on the image.

You can undo this operation by selecting the Undo button .


Zoom 33% command (Image menu)

Use this command to zoom in 33% on the image.

You can undo this operation by selecting the Undo button .


Zoom 50% command (Image menu)

Use this command to zoom in 50% on the image.


You can undo this operation by selecting the Undo button .

Zoom 100% command (Image menu)

Use this command to zoom in 100% on the image. The image is display without any scaling.


You can undo this operation by selecting the Undo button .

Shortcuts

Toolbar: 


Zoom 150% command (Image menu)

Use this command to zoom in 150% on the image. The image is display without any scaling.

You can undo this operation by selecting the Undo button .


Zoom 200% command (Image menu)

Use this command to zoom in 200% on the image.

You can undo this operation by selecting the Undo button .


Zoom 250% command (Image menu)

Use this command to zoom in 250% on the image.

You can undo this operation by selecting the Undo button .


Zoom 300% command (Image menu)

Use this command to zoom in 300% on the image.

You can undo this operation by selecting the Undo button .


Zoom 400% command (Image menu)

Use this command to zoom in 400% on the image.

You can undo this operation by selecting the Undo button .


Zoom 600% command (Image menu)

Use this command to zoom in 600% on the image.

You can undo this operation by selecting the Undo button .


Zoom 800% command (Image menu)

Use this command to zoom in 800% on the image.


You can undo this operation by selecting the Undo button .

100%-No Zoom command (Image menu)

Use this command to zoom in 100% on the image. The image is display without any scaling

You can undo this operation by selecting the Undo button .

Shortcuts


Toolbar: 

Zoom in command (Image menu)


Use this command to zoom in on the image to the next scale factor:

<u>At this</u> <u>factor</u>	<u>New scale</u> <u>factor</u>
25%	33%
33%	50%
50%	100%
100%	200%
200%	300%
300%	400%
400%	600%
600%	800%

At 800% the image is zoomed in as far as it can and this option is unavailable

You can undo this operation by selecting the Undo button .

Shortcuts


Toolbar: 

Zoom out command (Image menu)


Use this command to zoom out on the image to the next scale factor:

<u>At this</u> <u>factor</u>	<u>New scale</u> <u>factor</u>
33%	25%
50%	33%
100%	50%
200%	100%
300%	200%
400%	300%
600%	400%
800%	600%

At 25% the image is zoomed out as far as it can and this option is unavailable.

You can undo this operation by selecting the Undo button .

Shortcuts

Toolbar: 

CREATE PATTERN! command (Pattern menu)

Use this command to generate a pattern for the image. The configure pattern dialog will come up.

You will be able to specify how detailed you want the pattern to be, the smallest piece size, and the smoothness of the outlines.

If your image is large (greater than 60000 pixels), you will be asked whether you would like to resample the image down to a smaller size. Because PhotoPat averages colors, the process does not generally require a large bitmap to create a suitable pattern.

Shortcuts

Toolbar:



Design Pattern command (Pattern menu)

Use this command to design how the pattern looks. The Pattern Design Dialog will come up. In it you can change any of the following:

Outlines

Whether Outlines of pieces are displayed
Color of the outlines
Line style of the outlines

Identifiers

Whether Identifiers of pieces are displayed
Color of the identifiers
Font of the identifiers -Identifiers can also be drawn in the color of their respective piece.
Whether identifiers indicate colors or pieces. (Pieces can be numbered from smallest to largest, or from largest to smallest)

Pieces

Whether the pieces are displayed

Background

Whether a background is displayed
Color of the background

Grid

Spacing of the horizontal grid lines
Spacing of the vertical grid lines
Whether horizontal grid lines should start at the top or bottom
Whether vertical grid lines should start at the left or right
Color of the grid lines

Shortcuts

Toolbar:



Save Pattern As command (Pattern menu)

Use this command to save the pattern into one of several formats.

bmp	Windows Bitmap format
plt	<u>HPGL graphics format</u>
dxf	<u>AutoCad data exchange format</u>

Statistics command (Pattern menu)

Use this command to display statistics about the created pattern. Information includes the number of pieces and the number of colors used. More detailed information can be found in some of the Reports.

New command (Palette menu)

Use this command to create a new palette.

Open command (Palette menu)

Use this command to open an existing palette.

Shortcuts

Toolbar:



Edit command (Palette menu)

Use this command to edit the current palette.

Shortcuts

Toolbar:



Print command (Palette menu)

Use this command to print the current palette. The palette report contains the palette ids, descriptions, and color definition.

Save command (Palette menu)

Use this command to save the current palette.

Save As command (Palette menu)

Use this command to save the current palette with a new file name.

Palette command (Reports menu)

Use this command to generate a report of the palette. The report shows the color identifiers, the color names and the red-green-blue components.

Colors command (Reports menu)

Use this command to generate a report of the colors used in the pattern. The report shows the color name, the number of pixels using that color, and the percentage of total pixels using that color.

Pieces command (Reports menu)

Use this command to generate a report of the pieces in the pattern. The report shows the pieces, the number of pixels in that piece, and the piece's percentage of the total design.

Cascade command (Window menu)

Use this command to arrange multiple opened windows in an overlapped fashion.

Tile command (Window menu)

Use this command to arrange multiple opened windows in a non-overlapped fashion.

Arrange Icons Command (Window menu)

Use this command to arrange the icons for minimized windows at the bottom of the main window. If there is an open document window at the bottom of the main window, then some or all of the icons may not be visible because they will be underneath this document window.

1, 2, ... command (Window menu)

PhotoPat displays a list of currently open document windows at the bottom of the Window menu. A check mark appears in front of the document name of the active window. Choose a document from this list to make its window active.

Registration

The author of this program is a member of the Association of Shareware Professions (ASP).



PhotoPat 1.5 is a shareware product. As such, it is provided to you at little or no initial expense for a trial period of 30 days. After the 30 day period if you find that you do not wish to purchase the program simply delete it from your hard disk and/or floppies. If like the program, thank us by sending a check for \$25. **It is not free.** We have spent a great deal of effort in putting this program and concept together. Your registration will ensure continuing innovative products like this, as well as helping to support the shareware concept.

Mail your check for \$25(per registration) (\$22 + \$3 postage, material, and handling) to:

Rainbow Scan, Inc.
135 Beech Lake Court
Roswell, Georgia 30076

Also as described below, you are entitled to 2 complementary scans of photographs. (Additional scans are \$6 each).

Feel free to print this topic as a registration form, and complete the following:

Name :
Address :
City :
State :
ZIP :
Daytime Phone Number :
Evening Phone Number:

Your registered version will come on high density 3.5 diskettes.

Registration entitles you to the following:

- + Custom registered version with no more registration reminder screens or "unregistered version" text appearing on your printouts!.
- + A printed User's Guide.
- + More sample bitmaps and palettes.
- + A useful screen saver for your bitmaps and patterns!!
- + Three months of support via mail, telephone (404) 642-7515, and CompuServe

(75027,3674).

+ Information on upcoming releases, bug notices, scanning services, and design contests!!

+ Two free scans of your favorite photographs so that you can use them with PhotoPat. Simply send them along with your registration. If there are any special cropping instructions, attach a note. They will be scanned at a standard resolution and be suitable for use in PhotoPat as well as for Windows wallpaper, screen savers, and other graphics programs which accept BMP files. They will be returned to you with your registered version.

+ Low cost scans of photographs and drawings. Aside from the 2 complementary scans mentioned above, Rainbow Scan, Inc. will make additional scans at a very low price: only \$6 each.

Please send us any suggestions you might have for improvements, palettes, and new features. We'd also like to hear about how you might be using PhotoPat. Your comments are very important to us.

You may copy this program and share it with others, but you may not sell the software. For more information, refer to the distribution topic.

Distribution of PhotoPat

You may copy this program and share it with others, but you may not sell the software. Anyone wishing to charge people a fee for giving them a copy of PhotoPat must have the written authorization of the author and/or Rainbow Scan Inc., without which, the distributor is guilty of copyright violation. To receive such authorization, print and sign the agreement listed below and send it to me at the address listed above. Include \$3 to cover postage and handling for the latest version of PhotoPat. For distributors already recognized by the Association of Shareware Professionals, this authorization is not necessary.

TERMS OF DISTRIBUTION OF PHOTOPAT

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2. Your libraries catalog or listing must state that this program is not free, but is copyrighted software that is provided to allow the user to evaluate it before paying.
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Credits

A special credits screen can be found "Easter-egg" style, somewhere off the About box!!

Index command (Help menu)

Use this command to display the opening screen of Help. From the opening screen, you can jump to step-by-step instructions for using PhotoPat and various types of reference information.

Once you open Help, you can click the Contents button whenever you want to return to the opening screen.

Using Help command (Help menu)

Use this command for instructions about using Help.

Search for Help On... command (Help menu)

Use this command to look for help topics based on key words.

About command (Help menu)

Use this command to display the copyright notice and version number of your copy of PhotoPat 1.5.

Context Help command



Use the Context Help command to obtain help on some portion of PhotoPat. When you choose the Toolbar's Context Help button, the mouse pointer will change to an arrow and question mark. Then click somewhere in the PhotoPat window, such as another Toolbar button. The Help topic will be shown for the item you clicked.

Shortcut

Keys: SHIFT+F1

Move command (Control menu)

Use this command to display a four-headed arrow so you can move the active window or dialog box with the arrow keys.



Note: This command is unavailable if you maximize the window.


Shortcut

Keys: CTRL+F7

Minimize command (Control menu)

Use this command to reduce the PhotoPat window to an icon.

Shortcut

Mouse: Click the minimize icon  on the title bar.
Keys: ALT+F9

Maximize command (System menu)

Use this command to enlarge the active window to fill the available space.

Shortcut

Mouse: Click the maximize icon  on the title bar; or double-click the title bar.
Keys: CTRL+F10 enlarges a document window.

Next Window command (Image Control menu)

Use this command to switch to the next open image window. PhotoPat determines which window is next according to the order in which you opened the windows.

Shortcut

Keys: CTRL+F6

Close command (Control menu)

Use this command to close the active window or dialog box.

Double-clicking a Control-menu box is the same as choosing the Close command.



Shortcuts

Keys: CTRL+F4 closes an image window
ALT+F4 closes the PhotoPat window or active dialog box

Restore command (Control menu)

Use this command to return the active window to its size and position before you chose the Maximize or Minimize command.

Switch to command (Control menu)

Use this command to display a list of all open applications. Use this "Task List" to switch to or close an application on the list.

Shortcut

Keys: CTRL+ESC

Dialog Box Options

When you choose the Switch To command, you will be presented with a dialog box with the following options:

Task List

Select the application you want to switch to or close.

Switch To

Makes the selected application active.

End Task

Closes the selected application.

Cancel

Closes the Task List box.

Cascade

Arranges open applications so they overlap and you can see each title bar. This option does not affect applications reduced to icons.

Tile

Arranges open applications into windows that do not overlap. This option does not affect applications reduced to icons.

Arrange Icons

Arranges the icons of all minimized applications across the bottom of the screen.

Size command (System menu)

Use this command to display a four-headed arrow so you can size the active window with the arrow keys.



After the pointer changes to the four-headed arrow:

1. Press one of the DIRECTION keys (left, right, up, or down arrow key) to move the pointer to the border you want to move.
2. Press a DIRECTION key to move the border.
3. Press ENTER when the window is the size you want.

Note: This command is unavailable if you maximize the window.

Shortcut

Mouse: Drag the size bars at the corners or edges of the window.

Choose Font dialog box

The Font Dialog allows you to customize the font used to display the identifiers. You can select from any font installed on your system. You can change the style, size, and various effects like strikeout and underline.

Choose Color dialog box

The Choose Color Dialog allows you to precisely define a color used in the palette. You can choose a basic pre-defined color, or define your own. Colors can be defined by either a hue-saturation-luminous color space or a red-green-blueHID_RGB color space.

In addition to the color, the Choose Color Dialog lets you set the identifier and name for the color. The identifier is used on the pattern to identify the color. The name is displayed on the palette report.

Use this command to repeat the last editing command carried out. The Repeat menu item changes to Can't Repeat if you cannot repeat your last action.

File Save As dialog box

The following options allow you to specify the name and location of the image file you're about to save,

Dialog box items

File Name

Type a new filename to save an image with a different name. A filename can contain up to eight characters and an extension of up to three characters. PhotoPat adds the extension you specify in the Save File As Type box.

Drives

Select the drive in which you want to store the image.

Directories

Select the directory in which you want to store the image.

Network...

Choose this button to connect to a network location, assigning it a new drive letter.

Brightness Contrast dialog box

Dialog box items

Brightness

Allows you to change the brightness from all white to all black

Contrast

Allows you to change the contrast from a minimum to maximum.

Preview

Allows you to view the brightness/contrast adjustments before actually changing them.

Grid Design dialog box

Dialog box items

Vertical

Starting on the left/right

Vertical grid lines can be placed starting on either the left or right side.

Minor Lines every _ pixels

Minor vertical grid lines are spaced by this number of pixels. If this value is 0, no vertical lines are drawn.

Major Lines every _ minor lines

A single major vertical grid line is drawn instead of a minor grid line, this number of minor lines. If this number is 0, no major vertical lines are drawn.

Horizontal

Starting on the top/bottom

Horizontal grid lines can be placed starting on either the top or bottom side.

Minor Lines every _ pixels

Minor horizontal grid lines are spaced by this number of pixels. If this value is 0, no horizontal lines are drawn.

Major Lines every _ minor lines

A single major horizontal grid line is drawn instead of a minor grid line, this number of minor lines. If this value is 0, no major horizontal lines are drawn.

Major Lines

Color

Allows you to select a color for drawing major lines

Style

Allows you to select a line style line style for drawing major lines

Minor Lines

Color

Allows you to select a color for drawing minor lines

Style

Allows you to select a line style line style for drawing minor lines

Pattern Design dialog box

Dialog box items

Outlines

Display Outlines

Select whether you want the piece outlines to be drawn. The outlines show how the pieces are laid out.

Color

Select one of a predefined set of colors to use when drawing the outlines.

Style

Select one of a predefined set of line styles to use when drawing the outlines.

Background

Display Background

Select whether you want a background drawn. A background sets the display to a solid color prior to drawing the rest of the pattern. It is helpful when you want to view the outlines by themselves, rather than on top of the original image.

Background Color

Select one of a predefined set of colors to use when drawing the background.

Grid

Display Grid

Select whether you want a grid to be drawn. A grid is helpful in laying out the pattern and transferring the pattern to different materials.

Design Grid

Brings up the Grid Design dialog which lets you customize features of the grid (spacing, color, line type).

Identifiers

Display Identifiers

Select whether you want the piece identifiers to be displayed.

Color

Select one of a predefined set of colors to use when drawing the identifiers.

Mapping

Select the mapping used to determine the text of identifier.

Identifier Font

Selecting this button will bring up the Choose Font dialog. This font will be used when drawing the identifiers.

Pieces

Display Pieces

Select whether the pieces (areas within outlines) are drawn using the palette colors. Each piece is drawn in palette color assigned to it.

Colors**Show All Colors**

Selects all of the colors listed in the "Colors to show" list box. Hence all pieces will be displayed.

Show No Colors

Selects none of the colors listed in the "Colors to show" list box. Hence none of the pieces will be displayed.

Colors To Show

This multiple choice list box allows you to select only the colors of pieces you want to see. The list box contains only those colors from the palette that were used in the pattern.

Default

Changes the values in this dialog box (as well as the grid and font selections dialogs) to default values.

Pattern Statistics dialog box

Number of Pieces

Displays the number of created pieces in the pattern

Number of Colors

Displays the number of colors from the palette used in the pattern.

Palette Name/Desc

Displays the name of the palette (and its description) used to create the pattern.

Resample dialog box

Dialog box items

X resolution

Displays the X (horizontal) resolution of the original image.

Y resolution

Displays the Y (vertical) resolution of the original image.

Uniform Resampling

Selecting this option will force the resampling percentage to be the same in both X and Y. This will keep the aspect ratio of the original image the same in the new image. Turning this option off, will cause "stretching" in the new image.

X%

This sets the percentage of resampling in the X (horizontal) direction.

Y%

This sets the percentage of resampling in the Y (horizontal) direction.

New X Resolution

This sets the final X (horizontal) resolution in the new image.

New Y Resolution

This sets the final Y (vertical) resolution in the new image.

Quick/Accurate

This controls the method used to do the resampling. Either a quick method or a very accurate method can be applied. In most cases with PhotoPat, the Quick method is adequate.

Note: The amount of resampling can be set by either changing the resampling percentage or setting the final resolution. Both are interrelated; changing one will change the other. You have the flexibility to use either to determine the amount of resampling.

Image Info dialog box

Name of Image

Disk name and location of the image file.

X resolution

X (horizontal) resolution of the image file.

Y resolution

Y (vertical) resolution of the image file.

Compression

Whether the image was originally in a compressed bitmap format.

of Bits per pixel

The number of bits/pixel in the original image file. The more bits per pixel, the more colors a pixel can represent. For example with 1 bits/pixel, each pixel's color can be one of $2^1=2$ colors; with 8 bits/pixel each pixel's color can be one of $2^8=256$ colors.

X DPI

The number of X (horizontal) dots-per-inch in the image file. This is usually set when the image gets created (e.g. by scanning at a particular dpi)

Y DPI

The number of Y (vertical) dots-per-inch in the image file. This is usually set when the image gets created (e.g. by scanning at a particular dpi)

File Type

The original file type of the image file (e.g. BMP, PCX)

Size

The size (in bytes) of the image file. This includes header information, the color table, and the pixels.

Modified

Whether the image file has been modified in PhotoPat from its original (on disk) form.

Palette Design dialog box

This dialog is used to design colors in the palette.

Color Buttons

Color shown is the color assigned to that palette slot.

Buttons are laid out in slot order.

The button is labeled with the identifier assigned to that palette slot.

Color is enabled if no "X" appears on the button. Color is disabled if an "X" appears on the button.

The current slot is indicated by a bold border.

Add Color

Adds a new color at the next available slot.

Insert Color

Inserts a new color before the current slot.

Enable All

Enables all of the colors. All of the colors will be available for the next generated pattern.

Disable All

Disables all of the colors. None of the colors will be available for the next generated pattern.

Note: Enabling/Disabling of colors is useful when you have a standard palette of colors, but are temporary "out" of a particular color.

Pattern Configuration dialog box

This dialog is used to configure the pattern generation process.

Dialog box items

Pattern Quality

Defines how detailed you want the pattern to be. Choices for pattern quality are simple, medium, detailed, and complex.

Smallest Piece Size

Allows you to specify how small (in pixels) you want the smallest piece to be. This size does not apply in detail areas.

Curve Degree

Defines how smooth you want the piece outlines to be. Choices for curve degree are straight, smooth, and very smooth.

Default

Sets all values in this dialog to their default values.

If a detail area is defined, you can also specify the following:

Process using Detail Areas

Allows you to choose whether to apply special processing to detail areas. If detail areas are processed, pieces in them will be formed with a smaller-color tolerance. Generally more pieces will be created in detail areas.

Smallest Detail Area Piece Size

Allows you to specify (in pixels) how small you want the smallest piece in the detail area to be. This may and should be smaller than the smallest piece size

Print Choices dialog box

This dialog is used to select which items to print.

Dialog box items

Information

Pattern

Print the pattern. This item is only active if there is a pattern generated.

Pattern-Color Separated

Print the pattern, one color per page. On each page only the pieces for that color will be printed. This is useful when you need to separate out the colors in the pattern. This item is only active if there is a pattern generated.

Image

Print the image. This item is always active.

Palette

Print a report of the colors in the palette. The report contains the color names, identifiers, and RGB components.

Piece Report

Print a report of the pieces in the pattern.. The report shows the pieces, the number of pixels in that piece, and the piece's percentage of the total design.

Color Usage Report

Print a report of the colors used in the pattern. The report shows the color name, the number of pixels using that color, and the percentage of total pixels using that color.

Size

1 to 1

Each pixel in the image/pattern is mapped to a single dot on the printer. The aspect ratio of the image/pattern is preserved.

Actual Size

DPI (dots per inch) information in the image/pattern is used in scaling so that the printed image is the same size as the original image.

Fit to Page

The image/pattern is scaled so that the printed image will fill a single printer page.

Scale

The image/pattern is scaled so that any size output (including poster size) can be generated. Note that 100% scaling is equivalent to the 1 to 1 size.

Hint: When using the HPLJ printer, select the "Print Truetype as Graphics" option to allow for precise clipping of text on poster size output.

Scale Ids

For patterns, you can choose to scale the size of the piece identifiers as well

as the pattern. Usually you want to keep the size of ids as small as possible, so the default for this option is no scaling.

Width

Displays the X (Width) size of the to-be printed image/pattern.

Height

Displays the Y (Height) size of the to-be printed image/pattern.

Units

Allows you to view the Width and Height in different units (inches, points, centimeters, and pixels).

Labeling

Title

A title is printed at the bottom center of the image/pattern. You can enter any text to used for the title.

Tag

A tag is printed at the bottom left of the image/pattern. You can enter any additional information (e.g. Date, Palette, etc.) to be used for the tag.

All

Selects all of the information selections to be printed. This option is only available if a pattern has been generated.

File Open dialog box

The following options allow you to specify which image file to open:

Dialog box items

File Name

Type or select the filename you want to open. This box lists files with the extension you select in the List Files of Type box.

List Files of Type

Select the type of image file you want to open:
BMP - (Windows 3.1 Bitmap format) - 256 Colors
PCX - (ZSoft PC Paintbrush format) - 256 Colors

Drives

Select the drive in which PhotoPat stores the image file that you want to open.


Directories

Select the directory in which PhotoPat stores the image file that you want to open.

Network...

Choose this button to connect to a network location, assigning it a new drive letter.

Shortcuts

Toolbar: 
Keys: CTRL+O

No Help Available

No help is available for this area of the window.

No Help Available

No help is available for this message box.

Toolbar



The toolbar is displayed across the top of the application window, below the menu bar. The toolbar provides quick mouse access to many tools used in PhotoPat,

To hide or display the Toolbar, choose Toolbar from the View menu (ALT, V, T).

Click	To
-------	----



Open a new document.



Open an existing document. PhotoPat displays the Open dialog box, in which you can locate and open the desired file.



Save the active document or template with its current name. If you have not named the document, PhotoPat displays the Save As dialog box.



Copy the selection to the clipboard.



Insert the contents of the clipboard at the insertion point.



Print the active document.



Generate a Pattern for the Image.



Rotate image 90 degrees counterclockwise.



Rotate image 180 degrees.



Rotate image 270 degrees counterclockwise.



Flip the image about its horizontal center.



Flip the image about its vertical center.



Zoom in to the image.



Display the image at 100%.



Zoom out of the image.



Undo the last change to the image.



Edit/display the current palette.



Crop the image



Turn the display of the image on and off



Turn the display of the pattern on and off



Bring up PhotoPat's About Box



Bring up Context Sensitive Help

Status Bar



The status bar is displayed at the bottom of the PhotoPat window. To display or hide the status bar, use the Status Bar command in the View menu.

The left area of the status bar describes actions of menu items as you use the arrow keys to navigate through menus. This area similarly shows messages that describe the actions of toolbar buttons as you depress them, before releasing them. If after viewing the description of the toolbar button command you wish not to execute the command, then release the mouse button while the pointer is off the toolbar button.

The right areas of the status bar indicate which of the following keys are latched down:

Indicator	Description
CAP	The Caps Lock key is latched down.
NUM	The Num Lock key is latched down.
SCRL	The Scroll Lock key is latched down.

Brightness

Brightness describes the overall lightness and darkness of the image. Brightness ranges from all black to all white

Contrast

Contrast describes the distribution of lightness and darkness in the image. Contrast ranges from min (gray) to max (full color differential).

Pattern Quality

Pattern Quality can be set to the following:

Simple	Max of 100 Pieces
Medium	Max of 300 Pieces
Detailed	Max of 500 Pieces
Complex	Max of 700 Pieces

The exact number of pieces in the pattern can be found in the statistics dialog.

Line Styles

The following line styles are supported:

- Thin solid
- Thin dash
- Thin dot
- Thin dash-dot
- Thin dash dot
dot
- Light solid
- Thick solid
- Heavy solid

Graphic representations of the line styles appear in the list boxes.

Predefined Colors

The following colors are predefined for use in displaying patterns:

Color Name	Red	Green	Blue
Black	0	0	0
Blue	0	0	255
Green	0	255	0
Cyan	0	255	255
Red	255	0	0
Magenta	255	0	255
Yellow	255	255	0
White	255	255	255
Gray	127	127	127
Light Blue	100	100	255
Light Green	100	255	100
Light Cyan	100	255	255
Light Red	255	100	100
Light Magenta	255	100	255
Light Yellow	255	255	100
Light Gray	200	200	200

Colors are represented in an RGB color space.

Curve Degree

The piece outlines can be computed to one of 3 precisions:

Straight	Outlines are straight (linear) lines, exactly matching the pixel edges.
Curved	Outlines are approximations to quadratic bspline curves.
Very Curved	Outlines are approximations to cubic bspline curves.

Bsplines are curves which are numerically defined as piece wise polynomials (order 2= quadratic, order 3= cubic). Because most drawing and printing devices accept only straight lines, PhotoPat approximates these curves as straight lines when it creates the pattern. In many cases, over 150 lines are used to draw a curve separating two pieces.

Although the difference between using straight lines and curved lines is obvious, the difference between using curved and very curved lines may not be. In some cases very curved lines may result in a "truer" looking pattern.

RGB - Red Green Blue Color Space

A RGB (Red, Green, Blue) Color Space has 3 axes (one for Red, one for Green, and one for Blue). The values along each axis range from 0 (no component) to 255 (full component). RGB coordinates for some common colors are follows:

Color	Red	Green	Blue
Black	0	0	0
White	255	255	255
Red	255	0	0
Green	0	255	0
Blue	0	0	255
Yellow	255	255	0
Cyan	0	255	255
Magenta	255	0	255
Gray	127	127	127

Grid

A grid is a set of horizontal and vertical lines which is created as part of the pattern. It can be toggled on and off. The grid has major and minor lines in both directions which serve to easily provide dimensions to the pattern. Spacing, colors, and line types for the grid are all customizable.

Piece Identifiers

Piece Identifiers (ids) are used to label the pieces. The character font for the identifiers is customizable (font, size, etc.). Any Windows font can be used. The color for the identifiers is also selectable.

The mapping for the identifier can be one of the following

- The Palette Id of the color used for that piece.

- The numerical size order of the piece (in either ascending order or descending order).

Identifier Mapping

Identifiers are used to label the pieces. The text for the identifiers (ids) is determined by the mapping selected.

The mapping for the identifier can be one of the following

The Palette Id of the color used for that piece. Refer to the palette itself for the current palette ids defined. Each color in the palette can have an identifier of up to 10 characters.

The numerical size order of the piece (in either ascending order or descending order). For example in a pattern of 10 pieces in ascending order the largest piece will have an identifier of "10" and the smallest piece will have an identifier of "1".

Units

Here are some useful conversions between inches, centimeters, points, and picas all of which are occasionally used for printing units:

1 inch(in)	= 1.00 in	= 2.54 cm	= 72 pt	= 6 pi
1 centimeter(cm)	= 0.39 in	= 1.00 cm	= 28.08 p	= 2.34 pi
1 point(pt)	= 0.0139 in	= 0.0355 cm	= 1.00 pt	= 0.0834 pi
1 pica(pi)	= 0.167 in	= 12 pt	= 1.00pi	= 1.00pi

HPGL

HPGL (Hewlett Packard Graphics Language) is a defacto standard for plotting devices. When PhotoPat generates an HPGL file, it uses the following HPGL commands:

IN	Initialize Plotter
SP	Select Pen
	Pen 1 - used for piece outlines and identifiers
	Pen 2 - used for grid
PA	Pen Absolute mode
LT	Line Type
	-1 Solid
	0 dot at each coordinate
	1 dotted
	2 dashed
	3 long dashes
	4 dash-dot
	5 long dash, short dash
	6 long dash, short dash, short dash
PT	Pen Thickness (in millimeters)
SI	Absolute Character Size (in millimeters)
PU	Pen Up
PD	Pen Down
LB	Label

Note: PhotoPat assumes 500 plotting units per inch and outputs to a paper size of 8.0 x 10.5 inches.

Revision History

Version 1.0 - Release Date: August 14, 1994

1. Original Version

Version 1.5 - Release Date: September 30, 1994

1. Allowed for patterns to be separated by colors.
2. ASP acceptance
3. Allowed X/Y to be directly changed in resampling.
4. Incorporated quick resampling
5. Allowed for scaling, 1-1, and actual size printing.

6. Supported HPGL and DXF for vector output.
7. Added Help buttons to most of the dialogs.
8. Allowed for configurable Major and Minor lines in the grid.
9. Increased maximum size of user palette to 240 colors.
10. Fixed problem with sharpen filter

11. Allowed for enabling/disabling of palette colors.
12. Expanded Image/Info display.
13. Allowed for up to 30 undo operations.
14. Displayed pattern statistics.
15. Added Palette Save and Save As as menu selections

16. Improved font selection and scaling.
17. Automatically ask to resample when creating patterns with large images.
18. Changed wording of Curve degree listbox.
19. Displayed the zoom percentage and image/pattern indicator in Image Window Titles
20. Added image on/off and pattern on/off buttons.

21. General 1.0 to 1.5 changes.

AutoCAD DXF

AutoCad DXF (drawing interchange file) format is a standard ASCII file format for transferring CAD/line graphics files.

PhotoPat uses the following DXF commands:

Line Types:

- Continuous
- Dash
- Dot
- DashDot
- DashDotDot

Layers:

- Outlines
- Identifiers
- Minor Grid Lines
- Major Grid Lines

Entities:

- Polyline
- Line
- Vertex
- Text

Notes:

- The drawing size is set to 8.0 x 10.5 inches.
- The version set is AC1009.

Title Bar

The title bar is located along the top of a window. It contains "PhotoPat", the name of the image file (path excluded), the current zoom percentage, and whether the image, the pattern for the image, or both are currently being displayed.

To move the image/pattern window, drag the title bar. Note: You can also move dialog boxes by dragging their title bars.

A title bar may contain the following elements:

- Application Control-menu button
- Document Control-menu button
- Maximize button
- Minimize button
- Name of the application
- Name of the document
- Restore button

Scroll bars

Displayed at the right and bottom edges of the image window. The scroll boxes inside the scroll bars indicate your vertical and horizontal location in the image. You can use the mouse to scroll to other parts of the image.

