Pixel By Number

Foreward

Thank you for playing DamPBN - and if you have a physical copy of the manual that came in the retail box, then thank you for actually buying DamPBN! If you haven't sent out your registration card, do so as soon as you can - I'll be sending out regular image update disks to people who have.

This game is the result of a few months of effort back in late 2021 and early 2022, combined with a ton more effort in the early part of 2023 to finish what I started. What originally contained just a couple of test images now includes dozens of images out of the box, with literally thousands more available for download (or included on expansion disks for registered physical game owners). There's even a utility to batch create images - literally point the tool at a directory of image files, and out comes a directory of picture files,all sized and color reduced to fit the game's constraints.

As to the reasoning for a physical version? I'm obviously not trying to get rich since I'm selling these at more or less the cost of production; I just think that owning new retro games is cool, especially when you can hold them in your hand, or see the physical PC big box on the shelf. I just want to give those few people who still enjoy that the opportunity to do so.

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Introduction

Damaniel's Pixel by Number (DamPBN) is as much a casual experience as it is a game; a way to waste some time between other DOS gaming sessions. For anyone who's played one of the many Android or iPhone grid based coloring apps (think something like Cross Stitch World), you'll feel right at home. For those who haven't, the goal of the game is to complete an image by filling in a grid of colored squares one at a time. There are no time limits (though there is a timer to keep track of total progress!), no failure modes, and no pressure. To people looking for an action game, this will seem pretty boring - and in that sense, it is. However, it's really meant as a relaxing diversion, and I think it works pretty well in that regard.

Roughly 70 Images are included in the floppy based version of the game, but hundreds of additional puzzles can be found in the project's Github repo (https://github.com/Damaniel/DamPBN).

System requirements

The game has the following minimum system requirements:

· DOS 5.0 or higher, including MS-DOS, DR-DOS, FreeDOS, or DOSBox
· A 386 or faster CPU (a 33MHz 486 or faster is recommended)
· 2MB of RAM (4MB or more is recommended)
· Any VGA or compatible card
· 3MB of hard drive space (10MB or more is recommended, especially when working on larger picture files)
·(Optional) a mouse for mouse-based control

Installation

For real DOS devices:
- Insert the included floppy disk into your retro PC of choice
- Run the following commands from your DOS prompt:
  - CD A:\
  - INSTALL

(Note that this assumes your 3.5" floppy drive is assigned to A - if not, replace A with your floppy's drive letter.)
- Enter the path you want to install the game to (or press Enter to accept the default)

For emulated devices (PCEm/86Box/DOSBox/etc):
- Download the latest floppy image for the game from my GitHub repo
- Mount the disk image using whatever method your emulator of choice uses
- Run the following commands from your DOS prompt
  - CD A:\
  - INSTALL

(Note that this assumes your emulated floppy drive is A - if not, replace A   with your floppy's drive letter.)
- Enter the path you want to install the game to (or press Enter to accept the default)

Running the game

To run the game, run the following commands from your DOS prompt:

- CD <whatever install directory you used>
- DAMPBN

Configuration

Configuring sound:

DamPBN supports SoundBlaster compatible cards for digital sound, and will use OPL, OPL2 or OPL3 (whichever is available) from either an Adlib or SoundBlaster for the internal MIDI player. If your card(s) are configured with the most common settings (i.e. I/O port 220h, IRQ 7, DMA 1, FM port 388h), nothing further needs to be done. If your settings are different (for example, if you use IRQ 5 instead of 7), open **allegro.cfg** in the DamPBN directory with a text editor, and change the values of *sb_port, sb_dma, sb_irq* and *fm_port* accordingly.

Providing music:

DamPBN has an integrated MIDI player that will play a set of provided MIDI files while working on a Picture. There is also support for title screen and completed image MIDIs. However, due to the relative lack of permissive (i.e. Creative Commons / public domain) MIDI files, none are included in the base distribution of the game. To add music:

- In-game MIDI files go into **RES\MUSIC**. The first 16 files found will be played in a loop with a small delay between each one.
- The title and image complete music go into **RES\APPMIDI**. They should be called *title.mid* and *complete.mid*, respectively.

Controls

Keyboard controls (loading screen)

Key	Action
Up / Down	Move up or down through the active list one entry at a time
SHIFT+Up/ SHIFT+Down	Move up or down through the active list one page at a time
PgUp / PgDn	Move up or down through the active list one page at a time
Left	Move to the Collection list
Right	Move to the Image list
Tab	Toggle between the Collection and Image lists
Enter	Loads the highlighted Image if incomplete
P	Replays the highlighted Image if complete
R	Resets progress for the selected Image
Esc	·(From the main menu) Returns to the main menu ·(From in-game) Returns to the game

Controls (continued)

Keyboard controls (in-game)

Key	Action
Up / Down / Left / Right	Move the cursor by one square up, down, left, or right, respectively
SHIFT+Up / SHIFT+Down / SHIFT+Left / SHIFT+Right	Move the in-progress Image by one page up, down, left or right, respectively
Space	Color the active square, or erase an incorrect color
Left Bracket ([) Right Bracket (])	Select the previous or next color in the palette, respectively
P	Toggle between the two palette pages if the image has more than 32 colors
S	Save the current progress
L	Show the Load Image dialog
T	Change the style of all colored squares
K	Mark all squares of the active color (see 'Marking Squares', page 9)
O	Show the Options Menu (page 13)
M	Show the Map (see 'The Map', page 12)
H	Display the Help screen
X Esc	Exit the game and return to the main menu
Q / W	Plays the previous and next MIDI tracks, respectively
E	Pauses the playing music. Press the key again to unpause

Controls (continued)

Mouse controls (loading screen)

General:
- Clicking in the Collection or Image section will make that section active
- Clicking on an entry in the active section will highlight that entry
- Clicking on a highlighted Image a second time will load or replay it, depending on whether the Image is complete or not

For both the Collection and Image lists:
- Clicking the scrollbar area below the scrollbar (if present) moves the list down by one page
- Clicking the scrollbar area above the scrollbar (if present) moves the list up by one page

Mouse controls (in-game)

- Clicking on a square colors it in the currently selected color, or removes the color if the incorrect color was placed there
- Clicking the right scrollbar area above the scrollbar (if present) moves the Image up one page
- Clicking the right scrollbar area below the scrollbar (if present) moves the Image down one page
- Clicking the bottom scrollbar area to the left of the scrollbar (if present) moves the Image left by one page
- Clicking the bottom scrollbar area to the right of the scrollbar (if present) moves the Image right by one page
- Clicking any of the buttons in the lower right corner of the screen activates that feature
- Clicking a color in the palette selects it
- Clicking the 'Next page' or 'Previous page' buttons changes the palette page if there are more than 32 colors
- Clicking and dragging within the preview area in the upper right corner of the screen moves the Image area accordingly

Loading an Image file

The Load Picture menu contains the following items:

1) Collection section. Collections are a group of Images with a common theme.
2) Image section. This is a list of Images in the selected collection.
3) Section highlight. This yellow box surrounds the currently active section of the dialog.
4) Metadata. This section shows information about the currently selected Image, including:
    · Category
    · Dimensions (in pixels)
    · Number of colors in the Image
    · Progress (number of filled in squares versus total squares)
5) Basic controls. These are a subset of the available controls. See the Controls (loading screen) section for a list of all controls.

Playing the Game

The play area contains the following items:

1) Main play area. It consists of a grid of squares, each with a number inside, corresponding to a palette entry.
2) Main play area scrollbars. These show which portion of the Image is visible.
3) Overview area. This is a high level overview of the image, with each colored pixel representing a set of 4x4 pixels in the Image. See 'The Preview Area' (page X) for more information.
4) Palette. This section contains a selection of 32 colors and two buttons to change between palette pages, for Images with more than 32 colors. The number displayed by each palette entry corresponds to the numbers in the main play area.
5) Action buttons. Each of these controls a different action. See the following sections for details. Each button has a shortcut key, highlighted in the button.

Playing the Game (continued)

Filling in squares with color

To fill in a square of color, press **Space** or left click the mouse over the square to be filled in. If the correct color is placed, then that square is finished and can't be changed. If an incorrect color is filled in, the square will show an X over the incorrect color. Pressing the Space bar or clicking again will remove the incorrect color.

Moving around the Image

· Use the arrow keys (**Up**/**Down**/**Left**/**Right**) to move one square at a time. Holding down **SHIFT** while using the arrow keys will move the Image by an entire page.
· Click in the scrollbar area outside of the extents of the scrollbar itself to move the Image by one page in the directory relative to the scrollbar
· Click and drag inside the Overview area to change the visible part of the Image.

Marking squares

Pressing the **K** key or clicking on the Mark button toggles mark mode. When mark mode is active, all squares of the currently selected palette color will be highlighted in the Image area, in order to make them easier to find (if desired).

Unmarked (left) vs marked (right) squares

Playing the Game (continued)

Selecting Styles

When a square is colored in, the default coloring method is to use a flat square of the chosen color. By pressing the **T** key or clicking on the Style button, a total of 3 different styles can be cycled through and selected from.

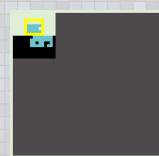*The 3 available styles: flat (left), raised (middle), cross stitch (right)*

All existing filled in squares and any newly filled in squares will be displayed using the selected style.

Replay

When an Image is completely filled in correctly, a replay will be shown - this will show the map area, but pixels will be drawn into it in the order the player filled them in when completing the Image. This allows the player to see how they went through the process of filling things in. Pressing **Enter** or clicking the mouse will exit replay mode.

From the loading screen, complete Images can't be edited, but their replays can be viewed again by pressing the **P** key or clicking the mouse while the Image is selected in the list. If the player wants to remove progress for an Image, pressing the **R** key on the load screen will prompt the user and delete any progress if requested.

Playing the Game (continued)

The Preview Area

The preview area, showing completed, incomplete, and unstarted regions

The upper right corner of the game screen displays an overview of the picture called the preview area. Each pixel within this area represents a 4x4 area of the Image, drawn in one of the following colors:

- **black:** no colors have been filled in within this 4x4 block
- **blue:** at least one correct color pixel has been filled in within this 4x4 block, and zero incorrect pixels have been filled in
- **white:** this 4x4 block is completely, correctly filled in
- **red:** at least one pixel in this 4x4 block is incorrectly colored

At any given time, a cursor surrounds the section of the preview area corresponding to the visible portions of the Image area.

Playing the Game (continued)

The Map

The map, showing a Picture in progress

By pressing the **M** key or clicking on the Map button, the map will be displayed. This shows the Image as a 1 to 1 pixel representation corresponding to the actual amount of the Image completed so far. Pressing the **M** key or clicking the mouse on the map screen will return to the game.

The Options Screen

Pressing the **O** key in game will bring up the options screen, shown below:

The options screen

The following options are available:

- **Sound:** On to enable sound, Off to disable it
- **Sound volume**: sets the global sound volume
- **Music:** On to enable music, Off to disable it
- **Music volume:** sets the global music volume
- **Autosave:** Saves the Image automatically at a regular interval. The options are:
  - *Off* : don't autosave
  - *1m, 2m, 5m, 10m*: Save every 1, 2, 5, and 10 minutes, respectively
- **Save on exit**: Saves the Image before returning to the title screen

Use the **Up** and **Down** arrows to select options, the **Left** and **Right** arrows to adjust options. Press **Enter** when OK is highlighted to save the current settings to the global configuration file, or press **Esc** at any time to cancel.

About the Included Images

Currently, the Images provided are in the following collections:

Collection Name	Description
DCSS_001	A collection of 50 monster sprites from the Dungeon Crawl Stone Soup tileset
FULLSIZE	A set of full size (320x200) images from a mix of open source and personal photos
TEST	A series of test images that were used to validate different features of the game
GERVAIS	A few monster sprites from the David Gervais Angband tileset

Additional Image sets can be found in the TOOLS directory of the GitHub repo, or (eventually) installable via expansion floppies.

Images generally don't contain their name (to maintain the surprise), but fall into one of the following general categories, which are shown in the file information area of the load screen:

- Landscape
- Animal
- Fantasy
- Abstract
- Pattern
- Uncategorized
- Miscellaneous

Other categories may be added in the future.

Licenses and Miscellania

Licenses

All included Image files are based on my own images, or come from public domain / CC0 sources. DamPBN itself is licensed under the MIT license, the text of which is shown below:

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Getting the Source Code (and Additional Pictures)

For more Pictures, and a copy of the source code, go to my DamPBN GitHub page:

https://github.com/Damaniel/DamPBN

For other DOS (and even some non-DOS) programming projects, check out my general GitHub page:

https://github.com/Damaniel

Notes