CHAPTER 14 BITMAPS AND BITBLTS

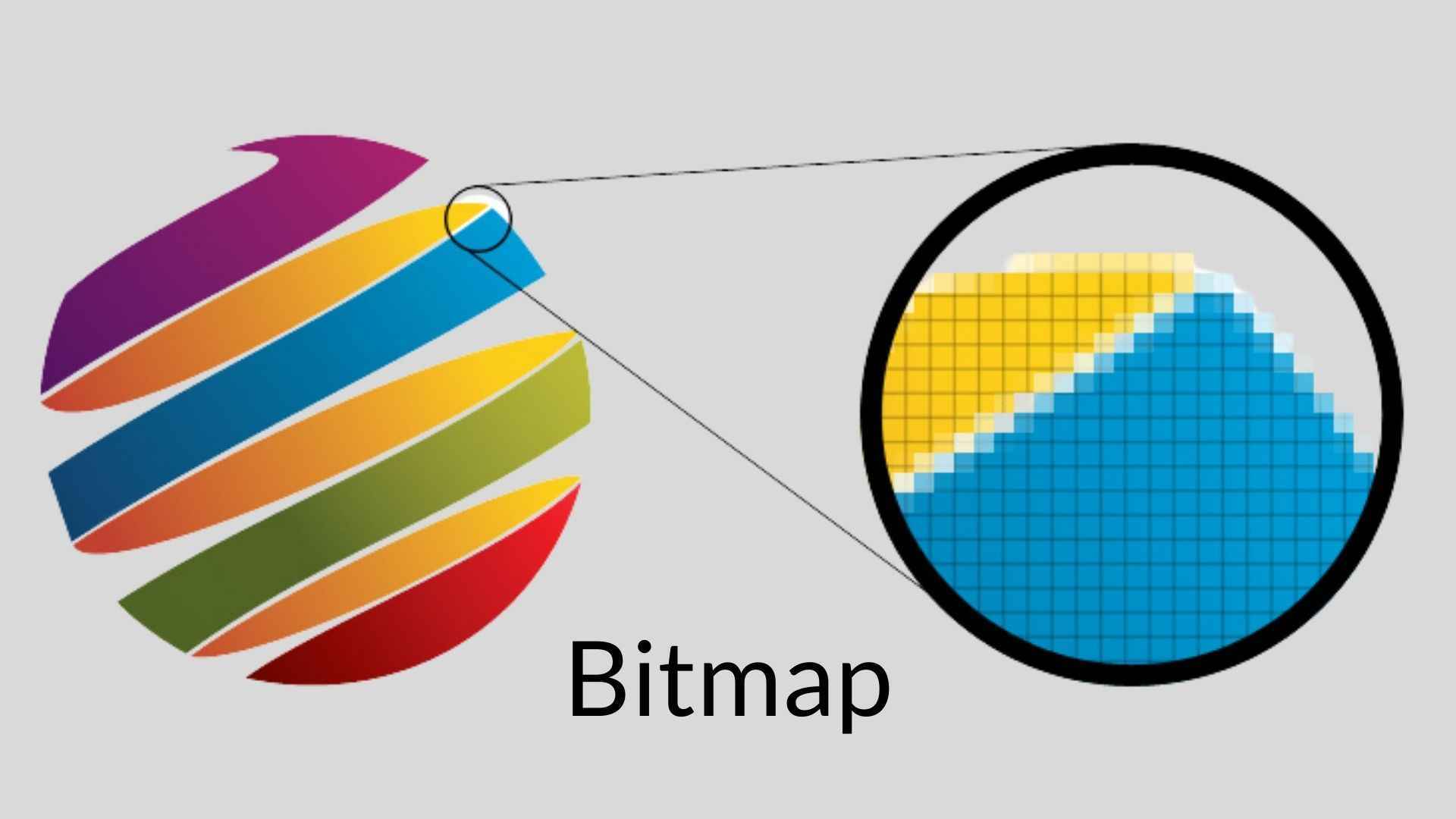
Unveiling the World of Bitmaps and Bitblts in Windows

This chapter dives into the fascinating realm of bitmaps and bitblts, essential tools for manipulating and displaying images in Windows applications. Let's embark on a journey through their intricate workings:

What are Bitmaps?

Imagine a rectangular grid overlaid on an image. Each tiny square within this grid represents a pixel, the basic unit of visual information.

A bitmap, in its simplest form, is a two-dimensional array of bits corresponding to these pixels. Each bit value determines the pixel's color or intensity, with 1 representing "on" and 0 representing "off."



Shades and Colors: Beyond Binary

While monochrome bitmaps require just one bit per pixel, the world of images is often richer than black and white.

For shades of gray or vibrant colors, multiple bits per pixel come into play. Each bit acts as a tiny brushstroke, contributing to the overall color palette.

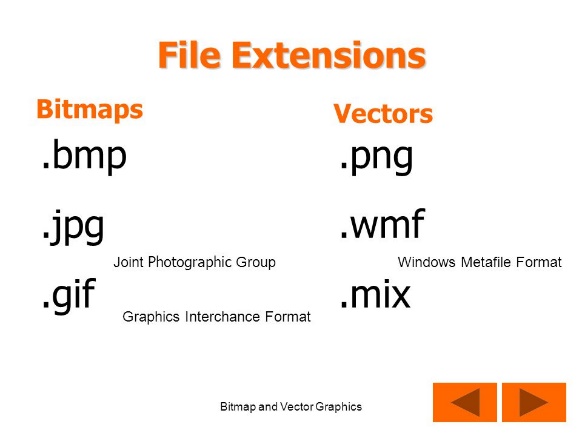
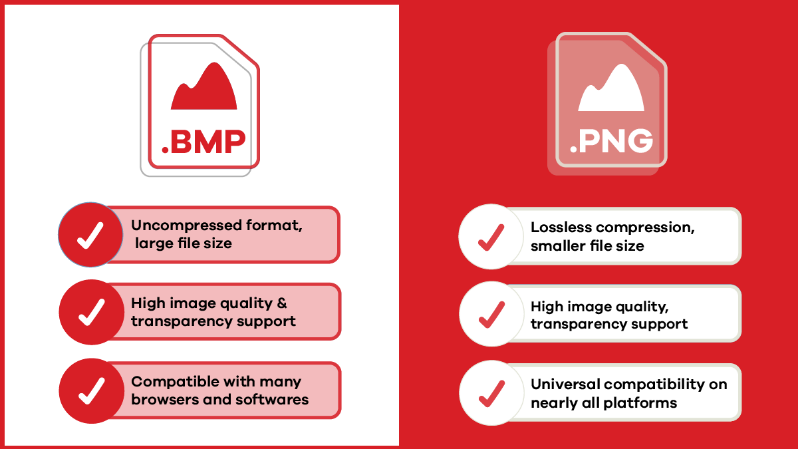
Think of it as a mosaic, where combinations of these individual bits build the intricate tapestry of the image.



Bitmaps vs. Metafiles: Two Approaches to Pictorial Data

Windows offers two main approaches to storing pictorial information:

Bitmaps: As described above, bitmaps directly represent the digital image data, essentially a snapshot of the pixels and their colors. They are efficient for simple images but can become bulky for complex ones.

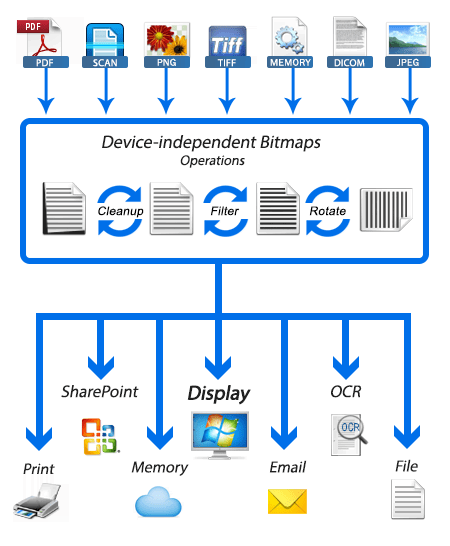
 

Metafiles: These store a set of instructions for drawing the image, similar to a recipe for creating the visual output. They are compact but require processing power to render the image on-screen.



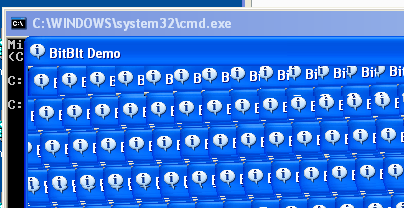
GDI Bitmaps: The Predecessors to DIBs

Before the introduction of device-independent bitmaps (DIBs) in Windows 3.0, GDI bitmaps reigned supreme. This chapter focuses on these pre-DIB bitmaps, showcasing their power and versatility even in the face of their later counterparts. Don't underestimate their value!



Bitblts: The Magic of Copying and Combining Images

Bitblts, short for bit block transfers, are the workhorses of image manipulation in Windows. They allow you to copy or combine rectangular regions of bitmaps, essentially transferring blocks of pixels from one location to another. Think of them as the paintbrushes and palettes of the digital world, enabling you to blend, move, and manipulate images with precision.



Exploring the Chapter's Depths:

Through a series of sample programs, this chapter delves deeper into the practical applications of GDI bitmaps and bitblts. You'll learn how to:

* Create and manipulate bitmaps using GDI functions.
* Load and display images from various formats like BMP and ICO.
* Copy and move portions of images using bitblts.
* Combine multiple images into a single composition.
* Apply transparency effects to create layered visuals.

Beyond the Basics:

This chapter lays the foundation for further exploration. You can dive deeper into topics like:

* Advanced bitblt operations for sophisticated image manipulation.
* Optimizing bitmap performance for efficient memory usage.
* Leveraging DIBs for device-independent image handling.

Embrace the Power of Bitmaps and Bitblts:

By understanding the concepts presented in this chapter, you unlock a powerful toolset for creating visually compelling applications in Windows. Remember, bitmaps and bitblts are not relics of the past; they remain valuable building blocks for modern image-centric applications. So, grab your digital paintbrush and start exploring the boundless possibilities of these fascinating tools!