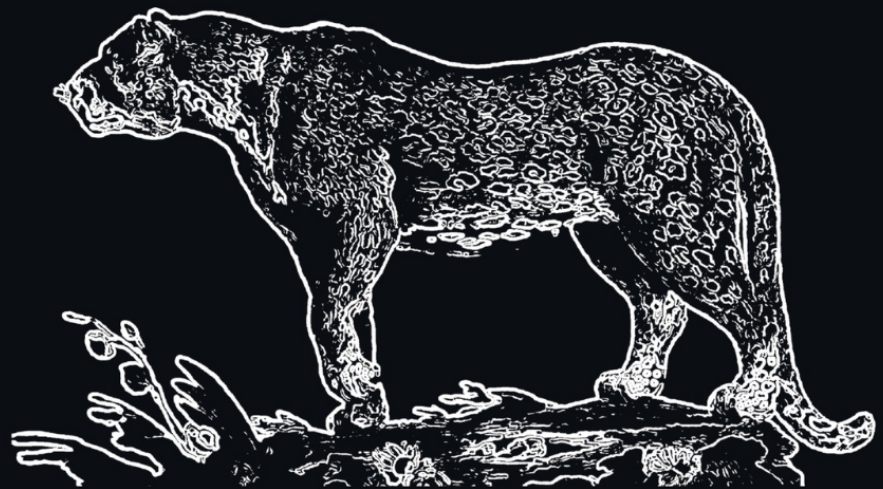


PRACTICAL TECH GUIDE

# QR Code Explained

From Generation to Real-World Use



```
raw_svg = buf.getvalue().decode('utf-8')
```

# QR Codes Explained: From Generation to Real-World Use

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*A Practical Guide to How QR Codes Work, How to Build Them, and How to Use Them Safely*

Version 1.0

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## Quick Start: Your First QR Code in 5 Minutes

This guide covers QR codes from structure to deployment. If you want to generate one right now, here is the fastest path.

### Option 1: Python (3 Lines)

Install the library:

```
$ pip install "qrcode[pil]"
```

Generate a QR code:

```
import qrcode

img = qrcode.make("https://nextframe.dev")
img.save("my_qr.png")
```

Open my\_qr.png -- done. Chapter 3 covers parameters, colors, SVG output, batch generation, and encoding Wi-Fi, vCards, and other data types.

### Option 2: Browser (No Install)

Save this as qr.html and open it in any browser:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>QR Code</title>
  <script src="https://cdn.jsdelivr.net/npm/qrcodejs@1.0.0/
qrcode.min.js">
  </script>
</head>
<body>
  <div id="qr"></div>
  <script>
    new QRCode(document.getElementById("qr"), {
      text: "https://nextframe.dev",
      width: 256,
      height: 256,
    });
  </script>
</body>
</html>
```

Chapter 4 covers JavaScript libraries, canvas rendering, and SVG output.

### Option 3: Self-hosted Web App

Clone and run an open-source generator with batch support, custom colors, and ZIP download:

```
$ git clone https://github.com/nextframedev/qr-code-generator.git
$ cd qr-code-generator
$ bash start.sh
```

Open <http://localhost:5050> in your browser. Chapter 5 covers the architecture and design decisions behind this tool.