**📘 Project Title**

**Scan -It (QR Studio)** **– Smart QR Generator and Scanner**

**💡 Project Overview**

**Scan -It (QR Studio)** is a simple desktop application that allows users to **generate and scan QR codes** effortlessly.  
It supports both **text** and **image inputs** for QR generation and lets users **scan QR codes** through either a webcam or an uploaded image.

The project is developed using **Python** and **Tkinter** for the graphical interface, with additional libraries like **qrcode**, **opencv**, **pyzbar**, and **Pillow** for image and QR processing.

This project demonstrates basic **GUI design**, **computer vision**, and **local data encoding** concepts — making it an ideal beginner-friendly Python desktop application.

**🧠 Key Features**

* 🧾 **Generate QR Codes** for:
  + Text or links
  + Local image files (encoded path or accessible URL)
* 📷 **Scan QR Codes** from:
  + Live camera feed
  + Uploaded image files
* 💾 **Save Generated QR Codes** as PNG images
* ⚙️ **Local Hosting (Optional)** — Host images locally using a simple Python HTTP server for QR access on the same network
* 🖥️ **User-Friendly Desktop UI** using Tkinter

**🧰 Tech Stack**

| **Category** | **Tools/Libraries Used** |
| --- | --- |
| Programming Language | Python 3.x |
| GUI Framework | Tkinter |
| QR Code Generation | qrcode |
| QR Code Scanning | pyzbar, opencv-python |
| Image Handling | Pillow |
| Optional Local Hosting | Python HTTP Server |

**⚙️ Installation and Setup**

**1️⃣ Clone the Repository**

git clone https://github.com/<your-username>/qr-studio.git

cd qr-studio

**2️⃣ Install Dependencies**

pip install qrcode[pil] pyzbar opencv-python pillow

**3️⃣ Run the App**

python qr\_studio.py

**4️⃣ (Optional) Enable Local Hosting for Image QR**

To make images accessible across devices:

cd path/to/your/image/folder

python -m http.server 8000

Then use the link http://<your-ip>:8000/image\_name.jpg while generating your QR.

**📸 App Workflow**

**Main Interface**

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| QR STUDIO APP |

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| [ Generate QR ] [ Scan QR ] |

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**➕ Generate QR**

* Choose whether to input **Text/Link** or **Image**
* Generate and preview the QR code
* Save the QR image for sharing

**🔍 Scan QR**

* Choose to scan via **Camera** or **Upload an Image**
* Automatically decodes and displays the data

**📂 Folder Structure**

qr-studio/

│

├── qr\_studio.py # Main Python application

├── requirements.txt # All dependencies

├── generated\_qrs/ # Folder to save generated QR images

└── README.md # Project documentation

**💡 Example Use Cases**

* Encode website links or text data into sharable QR codes
* Generate QR codes for local images to identify products or files
* Scan QR codes from printed labels or screens
* Local network sharing using hosted image QR codes

**🧑‍💻 Developer**

**Author:** Rachamalla Murari  
**Role:** Developer & Designer  
**Technologies:** Python, Tkinter, OpenCV, QRCode, Pyzbar

**🏁 Future Enhancements**

* Add QR History tracking
* Support batch QR generation
* Integrate with cloud storage APIs (Google Drive, Dropbox)
* Add Dark Mode and modern UI styling