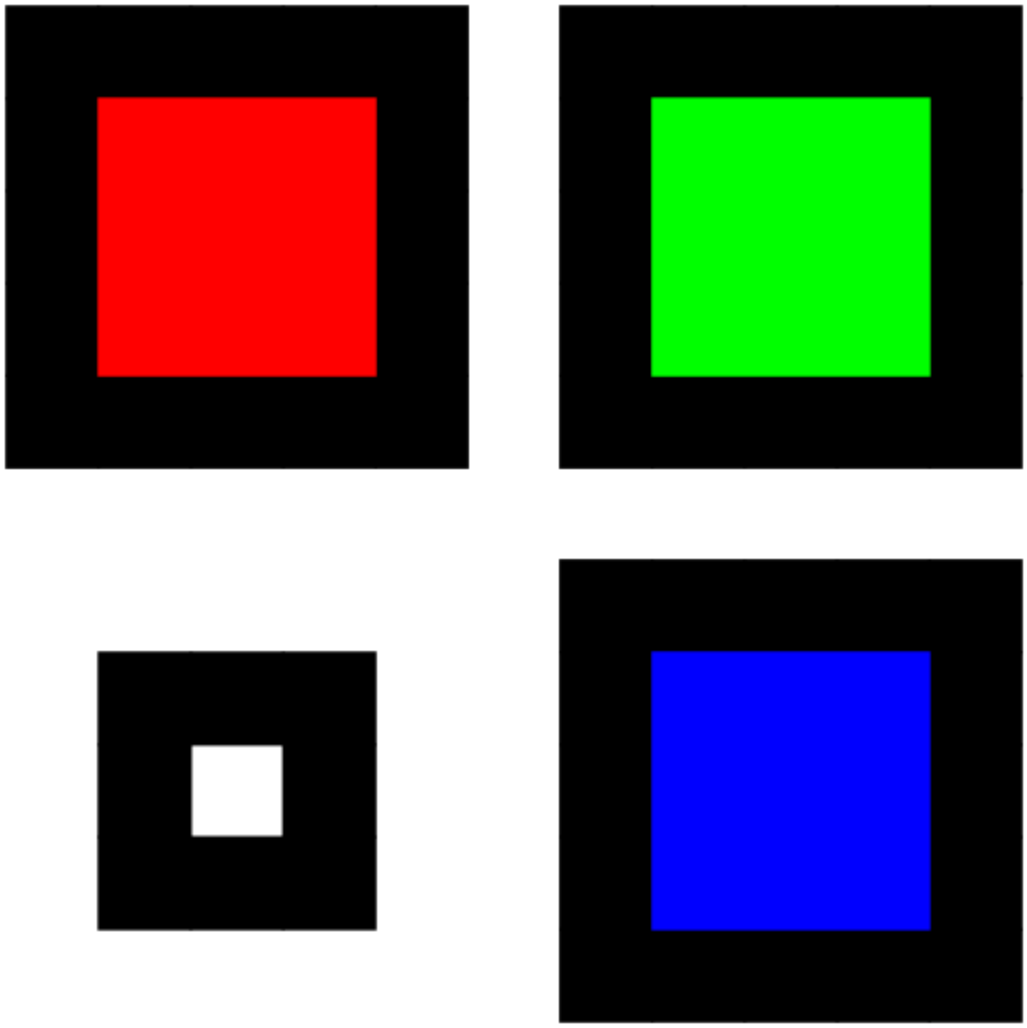


HR CODE

INTRODUCTION

In today's digital world, quick and efficient data exchange is crucial. Human-readable (HR) codes provide a user-friendly solution for encoding and sharing information. Our website is dedicated to simplifying this process by offering two core functionalities: HR Code Generation and HR Code Scanning.

Key Features

- HR Code Generation: Easily create HR codes containing alphanumeric text that are human-readable and accessible to all.
- HR Code Scanning: Decode HR codes to retrieve the information they contain.

Our HR code generator and scanner website is designed to streamline data sharing, from simple text notes to complex alphanumeric information, ensuring that the data is easily readable by humans.

SYMBOLS AND ABBREVIATIONS

It's still just an IDEA!!! For Example, HTTPS :- ?=

SYSTEM ARCHITECTURE

Our HR code generation and scanning website employs a modular and flexible system architecture to ensure efficiency, scalability, and reliability. The architecture comprises several key components:

HR Code Generation Engine:

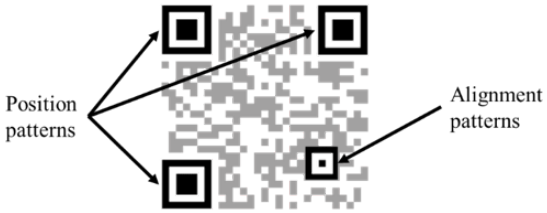
This component takes user input from the frontend and generates HR codes. It uses an algorithm to encode the alphanumeric text into an HR code that is easily readable by humans. The HR codes are then made available for user download and sharing.

1. Quiet Zone

   This is the empty white border around the outside of an HR code. Without this border, an HR reader will not be able to determine what is and is not contained within the HR code (due to interference from outside elements).

2. Finder Pattern

   HR codes usually contain three black squares in the bottom left, top left, and top right corners. These squares tell an HR reader that it is looking at an HR code and where the outside boundaries of the code lie.



3. Data Cells

   The rest of the HR code communicates the actual information, i.e., the URL, phone number, or message it contains.

4. Error Correction

   HR Code has an error correction capability to restore data if the code is dirty or damaged.

HR Code Scanner Engine:

When a user submits an HR code for scanning, the scanning engine interprets the code and extracts the original alphanumeric text.

1. Image Capture

   The process begins with capturing a frame from the device's camera, which provides a live video stream. This frame is typically a digital image in the form of pixel data.

2. Greyscale Conversion

   To simplify the image and reduce computational complexity, the image is often converted to grayscale. This means that each pixel's color information is reduced to a single brightness value (grayscale level), usually represented as an 8-bit value ranging from 0 (black) to 255 (white).

3. Locating Finder Pattern

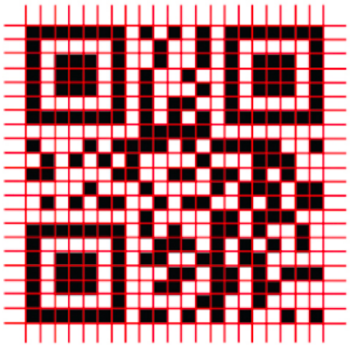
   HR codes consist of black and white squares arranged in a specific pattern. Edge detection algorithms are applied to identify the edges of these squares. This helps to locate the boundaries of the HR code.

4. Binarization

   The image is converted to binary form by thresholding. Pixels are classified as either black or white based on their brightness levels. This step simplifies further processing, making it easier to distinguish between black and white squares in the HR code.

5. Grid Detection

   The algorithm identifies the grid structure of the HR code by detecting the positions of the smaller square pixels within the code. These pixels represent the data in the HR code.



6. Decoding

   Finally, the image processing algorithm decodes the HR code data by interpreting the pattern of black and white squares within the grid. A specific HR code format is used to extract the encoded information, whether it's a URL, text, contact information, or something else.

CONCLUSION

In this documentation, we have provided a comprehensive overview of our HR code generation and scanning website, a powerful tool designed to simplify data exchange and sharing. With a focus on human-readable codes, we have harnessed the potential of simplicity and efficiency, ensuring that information is easily accessible to all.

Our system architecture has been carefully designed to offer a modular, flexible, and scalable platform that can adapt to evolving user needs and requirements. Whether you're generating HR codes to convey important messages, share contact information, or distribute any alphanumeric text, our website's HR code generation engine stands ready to serve your needs efficiently and securely.

On the flip side, our HR code scanning engine guarantees the accurate interpretation of HR codes, making data retrieval a breeze. We believe in the power of simplicity, and our HR codes exemplify this philosophy. Scanning an HR code should be an intuitive experience, accessible to everyone.

As we move forward, we remain committed to improving and expanding our platform to meet your evolving needs. Your feedback is invaluable in this journey, and we encourage you to share your insights and suggestions to help us continue making our HR code generator and scanner website even better.

Thank you for choosing our platform, and we look forward to being your trusted partner for efficient and human-readable data exchange. If you have any questions or need assistance, please don't hesitate to reach out to our team.

REVISION HISTORY

- V1 UP AND RUNNING!!!

  https://noel-friedrich.github.io/hr-code/
- V2 IN PROGRESS!!!