QR CODE GENERATOR & SCANNER

A REPORT OF THE EVALUATION OF PROJECT 2

PROJECT S.NO: 42

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ABSTRACT

A QR Code is a two-
dimensional barcode that is readable by smartphones. It allows to encode over 4000 charac
ters in a two dimensional barcode. QR Codes may be used to display text to the user, to o
pen a URL, save a contact to the address book or to compose text messages. "QR Code" is
 a registered trademark of DENSO WAVE INCORPORATED.

To read QR Codes with your smartphone, you need an appropriate software installed on y
our phone. For Android-based devices, you can use Barcode Scanner by ZXing. On iOS-
Devices like iPhones there are also QR Code readers available on the AppStore, for Exam
ple i-
nigma. On Firefox OS try QR Code Scanner. On Symbian devices, you can use Mobiletag
 barcodes reader for example.

If you use a modern web browser (recent versions of Firefox or Chrome) and have a webc
am, this site allows you to scan QR Codes with your web browser. You can use this to sen
d a link from a phone to your desktop browser for example.

QR Codes generated

No! There is no restriction of any kind. You can use these QR Code images for whatever
you like, also commercially. Please note that the word "QR Code" is a registered trademar
k of DENSO WAVE INCORPORATED. If you want to use it, you have to add a trademar
k comment. Please see here for details.

INTRODUCTION

The QR code

2D barcodes (a group of barcodes the QR code belongs to) are comparable to common, on e-
dimensional bar codes as they are e.g. used on the product packaging at the grocery store. However, QR graphics are able to store much more data, they can include over 3000 chara cters on a very small space. To create one, the information gets encoded according to ISO/ IEC 18004:2006 by a QR generator like ours. The high data density compared to simple b arcodes, the licensing policy of the QR developer / creator Denso Wave plus the wide avai lability of reading software has helped the QR code to establish itself and pushed technical ly comparable 2D codes out of the market (see "What is a QR code" for more information on this topic).

The most prominent use-
case for QR codes is the area of mobile marketing. Because there is free QR code softwar e to read QR codes for almost every smartphone with a camera (e.g. iPhone, Google Andr oid, Blackberry, Symbian), QR codes are used as a link between offline media such as pap er and websites. The user just needs to scan the code instead of typing long, unpleasant we b addresses. However, a QR image can even be scanned and decoded with older mobile ph one cameras and models without Internet access as QR code readers are available for free for less common and legacy platforms. But the intended use of QR codes and for devices without Internet access is mostly limited to the import of business contacts and address dat a (vCards), trigger phone calls or text messages (see also "Overview of the different QR c ode types and functionality"). In particular, QR code business cards are perfect to enable o thers an easy and typo-
free import of your own contact details. Just print a vCard QR code on your business card.

QR code with logo / image

The QR code standard includes a sophisticated error correction technique (Reed–
Solomon error correction). Therefore, it is possible to style some parts of QR codes. For e xample, our generator is able to change the foreground and background color of a code an

d it is also possible to embed a logo, e.g. in the middle of the QR image. Embedding content matching logos or icons helps the user see what to expect from the QR code before scanning, even though the QR code contents will not be displayed before scanning the code. We have extensive experience with Logo QR

codes and you are welcome to contact us for creating your custom logo QR code with colors matching your corporate identity. Learn more…

QR code with design / style

Beside QR codes with logo, there are also so called Design QR codes. QR codes with design are even more modified, they provide a more artsy look than just an image-logo placed in the center of a QR code. Our partner VisuaLead offers numerous functions with which you can let your creativity run wild. Create unique, professional QR codes. The increased attractiveness of QR codes with design invites your users to scan the code even more than with a simple logo.

Dynamic QR Codes

The content of a QR Code cannot be changed once generated. What is sometimes referred to as a Dynamic QR Code, is a QR Code pointing to a static URL that hosts the actual content (e.g. the real URL). The hosted content can be changed after the QR Code has been printed.

After signing in with a Google Account, this site also allows you to generate Dynamic QR Codes (available under My Codes). They can be handled exactly as our normal QR Code. We automatically create a static URL for you that points to your actual content. We provide simple view tracking for these Codes. You can also enter a Google Analytics Tracking ID for advanced tracking.

This service is offered completely free of charge without any restrictions.

Codewords are 8 bits long and use the Reed

Solomon error correction algorithm with four error correction levels. The higher the error correction level, the less storage capacity. The following table lists the approximate error correction capability at each of the four levels:

Level L (Low)	7% of codewords can be restored.
Level M (Medium)	15% of codewords can be restored.
Level Q (Quartile)	25% of codewords can be restored.
Level H (High)	30% of codewords can be restored.

In larger QR symbols, the message is broken up into several Reed–

Solomon code blocks. The block size is chosen so that at most 15 errors can be corrected in each block; this limits the complexity of the decoding algorithm. The code blocks are then interleaved together, making it less likely that localized damage to a QR symbol will overwhelm the capacity of any single block.

Due to error correction, it is possible to create artistic QR codes that still scan correctly, but contain intentional errors to make them more readable or attractive to the human eye, as well as to incorporate colors, logos, and other features into the QR code block.

It is also possible to design artistic QR codes without reducing the error correction capacity by manipulating the underlying mathematical constructs.

Encoding

PROPOSED SYSTEM

A QR code generator is a software which stores data into a QR code (for example a text o r a website address). E.g. this can be easily done with our online QR generator goQR.me: j ust create a QR code by typing in your data and download it as high resolution PNG or ve ctor graphic (SVG, EPS). Now you may print your free QR code or embed it on your web site to make it available to others.

The format information records two things: the error correction level and the mask pattern used for the symbol. Masking is used to break up patterns in the data area that might conf use a scanner, such as large blank areas or misleading features that look like the locator m arks. The mask patterns are defined on a grid that is repeated as necessary to cover the wh ole symbol. Modules corresponding to the dark areas of the mask are inverted. The format information is protected from errors with a BCH code, and two complete copies are includ ed in each QR symbol.

The message dataset is placed from right to left in a zigzag pattern, as shown below. In lar ger symbols, this is complicated by the presence of the alignment patterns and the use of multiple interleaved error-correction blocks.

EXISTING SYSTEM

You can export your created QR code into many formats. goQR.me offers everything supported by our QR code API for download. Currently supported: PNG, JPG/JPEG, GIF, SVG, EPS, PDF.

A barcode scanner (or a mobile phone with camera and an appropriate reader app) which supports the QR code standard is required to scan a QR code. QR code reader apps are made available by different manufacturers and for different mobile devices, mostly for free.

There are many free QR code reader for Smartphones. However, they differ significantly in terms of usability, scanning speed and standards compliance (in particular

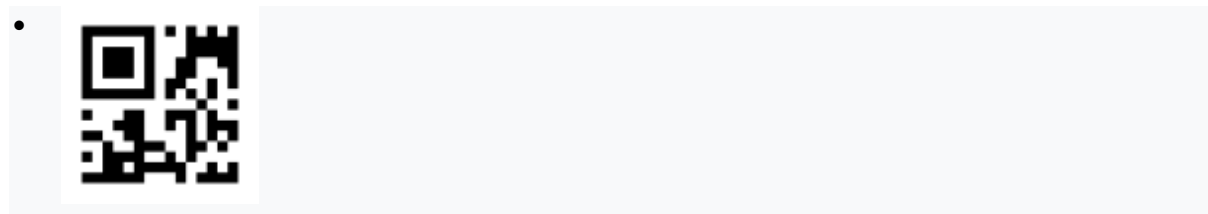regarding the processing of vCards). Therefore we provide an overview about recommendable QR code software.

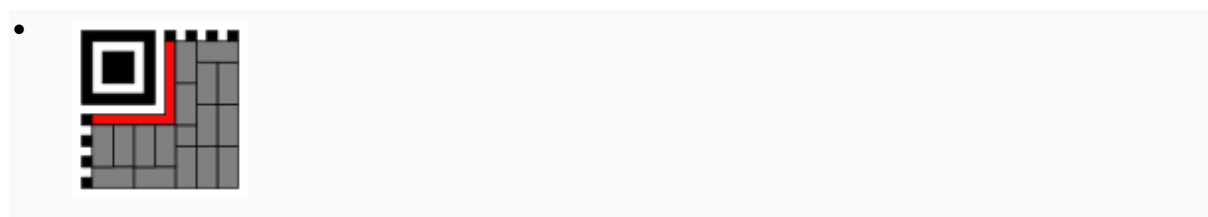# IMPLEMENTATION OR ACHITECTURE DIAGRAM

Model 1

Model 1 QR code is an older version of the specification. It is visually similar to the widely seen model 2 codes, but lacks alignment patterns.
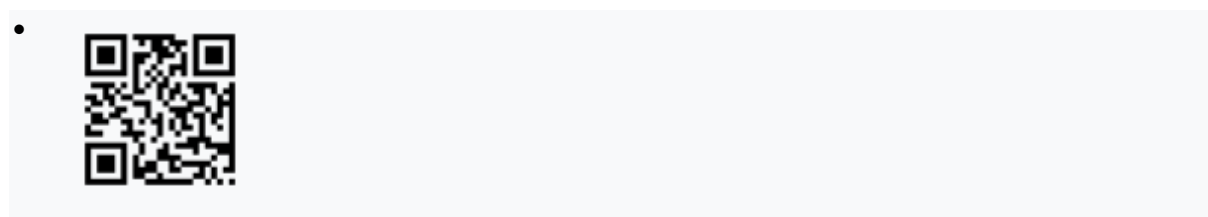
Micro QR code[edit]

Micro QR code is a smaller version of the QR code standard for applications where symbol size is limited. There are four different versions (sizes) of Micro QR codes: the smallest is 11×11 modules; the largest can hold 35 numeric characters.[60]

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  Micro QR code example

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  Micro QR code functional regions

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  Model 1 QR code example

Model 1 QR code functional regions

IQR code

IQR Code is an alternative to existing QR codes developed by Denso Wave. IQR codes can be created in square or rectangular formations; this is intended for situations where a rectangular barcode would otherwise be more appropriate, such as cylindrical objects. IQR codes can fit the same amount of information in 30% less space. There are 61 versions of square IQR codes, and 15 versions of rectangular codes. For squares, the minimum size is 9x9 modules; rectangles have a minimum of 19x5 modules. IQR codes add error correction level S, which allows for 50% error correction. IQR Codes have not yet been given an ISO specification, and only proprietary Denso Wave products can create or read IQR codes

SQRC[edit]

Main article: simple:SQR codes

Secure Quick Response code (SQRC) is a type of QR code that contains a "private data" segment after the terminator instead of the specified filler bytes "ec 11" This private data segment must be deciphered with an encryption key. This can be used to store private information and to manage company's internal information.
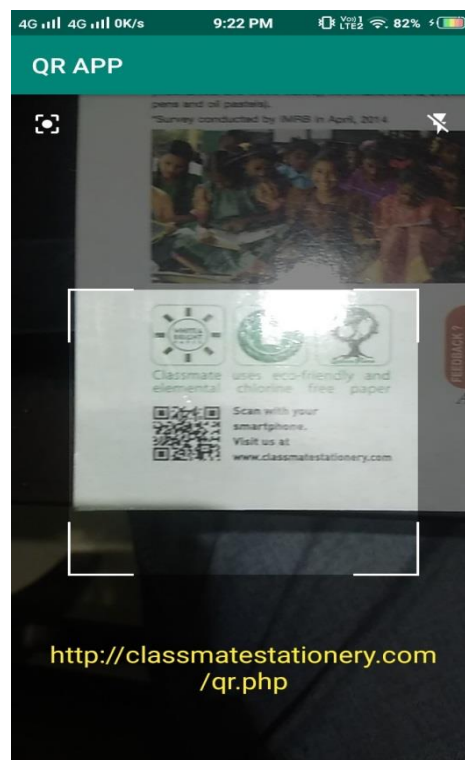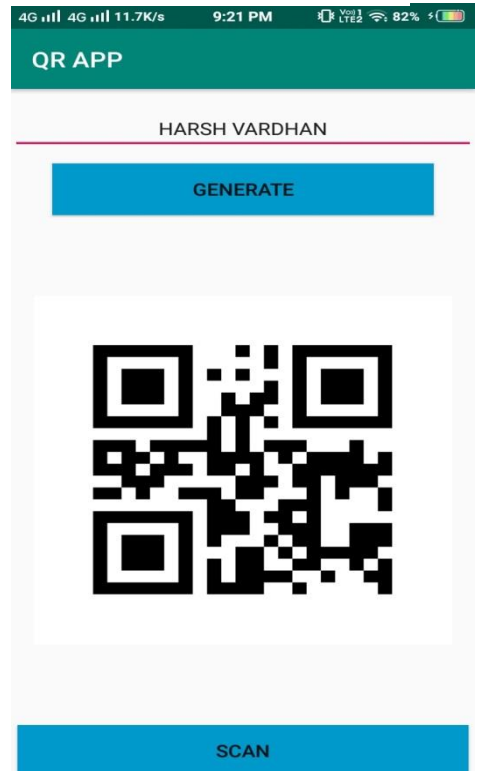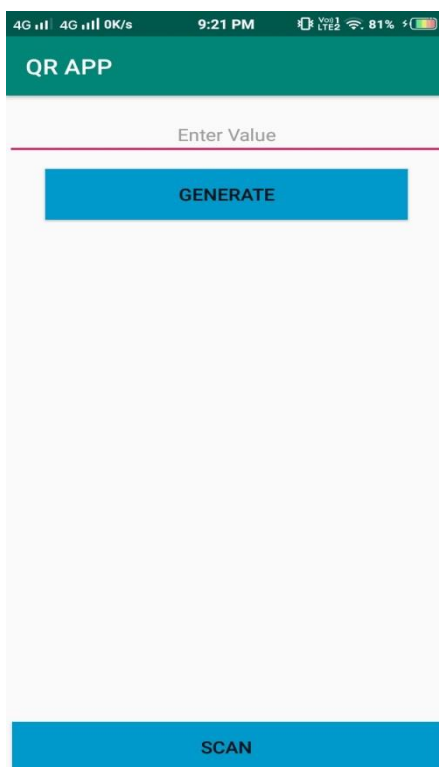
QRGraphy

The QR Code with graphical items or logo and colors. These qr codes have 2 types: Graphical and Transparent. QRGraphy is attractive for designers, marketing and advertising.

Frame QR

Frame QR is a QR code with a "canvas area" that can be flexibly used. In the center of this code is the canvas area, where graphics, letters, and more can be flexibly

arranged, making it possible to lay out the code without losing the design of illustrations, photos, etc.

OUTPUT/RESULT / SCREENSHOT:

CONCLUSION / FUTURE ENHANCEMENT

To summarize, there are plenty of free QR code readers on the market. Here are the best ones (from our experience, but we'd like to hear your opinion):

Android

- Barcode Scanner (QR code with Google Play link)
- i-nigma (QR code with Google Play link)
- RedLaser (QR code with Google Play link)

iOS

- i-nigma (QR code with App Store link)
- RedLaser (QR code with App Store link)

Other mobile platforms

- i-nigma (Hint: visit www.i-nigma.mobi on your mobile device)

From a technical perspective QR codes do not expire or get invalid: The information a QR code offers after scanning is stored in the graphic itself (hence QR codes also get larger and form a more complex pattern if there is more data to store). The stored data cannot be changed and therefore a QR code does not "expire" after a certain time.

Unfortunately, there are shady QR code providers and generators, who simply do not store the data entered by the user into the QR code. An example: When you type the web address http://www.example.com, these unscrupulous providers store a redirection address like http://[domain-of-the-provider]/www.example.com into the code without notifying the user about it. So after scanning the code, you're sent to http://[domain-of-the-provider]/ and redirected to the real destination www.example.com afterwards. The business model of these QR providers normally is to switch off the redirection after a short time frame. So the QR code "expires" even though neither the QR code symbol nor the data it provides were changed. The redirection normally is reactivated after some payment. Sadly,

many users are willing to pay because re-

printing publicity material, leaflets and things like that often costs more.

However, there is nothing bad about QR code redirects *in general* (in fact, even our dyna mic QR codes are based on redirects to make it possible to change the target URL after pri nting). But we think its bad manners to offer a "free" QR service but actually rely on the l ack of knowledge of the customer to take the generated QR codes as "hostage" because th e user created QR codes with expiration date without even noticing it.

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nigma. On Firefox OS try QR Code Scanner. On Symbian devices, you can use Mobiletag barcodes reader for example.

If you use a modern web browser (recent versions of Firefox or Chrome) and have a webc am, this site allows you to scan QR Codes with your web browser. You can use this to sen d a link from a phone to your desktop browser for example.

QR Codes generated

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ide simple view tracking for these Codes. You can also enter a Google Analytics Tracking ID for advanced tracking.This service is offered completely free of charge without any res tricons.