A Course based Project Report on

Encoding of QR codes

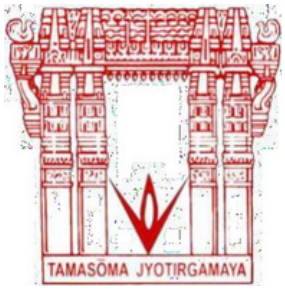
Submitted in the partial fulfilment of the requirements for the award of degree of

BACHELOR OF TECHNOLOGY

in CYBER SECURITY

Submitted by

A.Pravalika (21071A6202)
B.Keerthi Prasanna (21071A6205)



DEPARTMENT OF CYBER SECURITY

VNR Vignana Jyothi Institute of Engineering & Technology

(Autonomous Institute, Accredited by NAAC with 'A++' grade and NBA)

Bachupally, Nizampet (S.O.) Hyderabad- 500 090

February 2023

VNR Vignana Jyothi Institute of Engineering & Technology

(Autonomous Institute, Accredited by NAAC with 'A++' grade and NBA)

Bachupally, Nizampet (S.O.) Hyderabad- 500 090

Department of Cyber security

CERTIFICATE

This is to certify that the course based project work entitled "Encoding of QR codes", being submitted by A.Pravalika (21071A6202), B.Keerthi Prasanna (21071A6205) in partial fulfilment for the award of Degree of BACHELOR OF TECHNOLOGY in CYBER SECURITY
during the academic year 2022-23 is a record of bona-fide work carried out by them under our guidance and supervision. The results embodied in this report have not been submitted by the students to any other University or Institution for the award of any degree or diploma.

Project Guide

LALITHA .
Professor,
Dept. of CYS,
VNRVJIET,
Hyderabad.

Head of Department

Dr. RAJASHEKAR
Head of Department,
Dept. of CYS
VNRVJIET,
Hyderabad.

VNR Vignana Jyothi Institute of Engineering & Technology
(Autonomous Institute, Accredited by NAAC with 'A++' grade and NBA)
Bachupally, Nizampet (S.O.) Hyderabad- 500 090

Department of Cyber security

DECLARATION

I hereby declare that the project entitled "Encoding of Qr codes" submitted for the B. Tech Degree is my original work and the project has not formed the basis for the award of any degree, associate ship, fellowship or any other similar titles.

Signature of the Student:

A.Pravalika

(21071A6202)

B.Keerthi

Prasanna

(21071A6205)

Place

:

Date:

ACKNOWLEDGEMENT

We express our deep sense of gratitude to our beloved Chairman, Shri. D.Suresh Babu, VNR Vignana Jyothi Institute of Engineering &Technology for the valuable guidance and for permitting us to carry out this project. With immense pleasure, we record our deep sense of gratitude to our beloved Principal, Dr.C.D.Naidu for permitting us to carry out this project. We express our deep sense of gratitude to Dr. Rajashekar, Associate Professor and Head, Department of Cyber Security, VNR Vignana Jyothi Institute of Engineering & Technology, Hyderabad-90 for the valuable guidance and suggestions, keen interest and through encouragement extended throughout period of project work. We take immense pleasure to express our deep sense of gratitude to our beloved Guide Lalitha, Professor in Cyber security, VNR Vignana Jyothi Institute of Engineering & Technology, Hyderabad, for his valuable suggestions and rare insights, for constant source of encouragement and inspiration throughout my project work. We express our thanks to all those who contributed to the successful completion of our project work.

A.Pravalika (21071A6202)
B.Keerthi Prasanna (21071A6205)

AIM:

To create a platform where encoding of QR codes is possible

OBJECTIVES:

In this project, we will learn how we can utilize Python programming to create QR codes for any specific purpose. We will generate some bar codes for specific purposes . Finally, we will look at some of the additional stuff that you can accomplish with the encoding of QR codes.

- Personalized Gift Messages
- Inside Elevators
- QR Codes in Museums
- Bar Bathrooms
- Creatives Ads for Mobile Applications
- Mountain Chair Lifts and Safety Bars
- Luggage Tags
- Video and Charging Kiosks
- Walking Trails and Historical Sites

INTRODUCTION:

In the modern world, our objective is to always have a secure and convenient way of accessing things. Nobody wants to read and click on elongated URL links or lengthy word sequences. Also, in the world of the recent pandemic, it is usually considered best to avoid touches and achieve transactions without much physical contact.

This objective is achieved with the help of bar codes and QR codes. Bar codes suffer from some spacing limitations, which are handled by the introduction of QR codes. QR Codes are typically two-dimensional pictographic codes that offer the users a large storage capacity and fast readability in the form of black modules arranged in a square pattern on a white background. QR codes are a fantastic resource for tracking information about numerous products, exchanging data, directing customers to a landing page or website, downloading apps, paying bills (at restaurants
or other places), shopping, e-commerce, and so much more!

SOFTWARE REQUIREMENT:

a. IDE / FRAMEWORK: Visual code data. link
b. LIBRARIES: pyqrcode, pyopen-cv, pypng
c. OPERATING SYSTEM: Windows 11
d. LANGUAGE: Python, Version: - 3.10.4

pyqrcode:
The pyqrcode module is a QR code generator that is simple to use and written in pure python. The
module can automate most of the building process for creating QR codes. Most codes can be
created using only two lines of code.

pyopen-cv: OpenCV is a Python open-source library, which is used for computer vision in
Artificial intelligence, Machine Learning, face recognition, etc.

pypng:PyPNG is pure Python and has no dependencies. It requires Python 3.5 or any compatible
higher version.

Python: Python is a popular programming language. It was created by Guido van Rossum, and
released in 1991.

It is used for:

- web development (server-side),
- software development,
- mathematics,
- system scripting.

Visual code: Visual Studio Code is a streamlined code editor with support for development
operations like debugging, task running, and version control. It aims to provide just the tools a
developer needs for a quick code-build-debug cycle and leaves more complex workflows to fuller
featured IDEs, such as Visual Studio IDE.

ALGORITHM:

For Encoding:

Step 1. Import libraries
Step 2. Store the data that you want to display after scanning the QR Code Step 3. Create QR Code
Step 4. Generate QR code by using make () function
Step 5. Adding color features in QR code
Step 5. Compile the data into a QR code array
Step 6. Display the QR code

SOURCE CODE:

For Encoding:

```
import qrcode

#define the data

data = 'https://www.youtube.com/'

#create qrcode

QRCodefile = "image.png"

# Generating the QR code

QRimage = qrcode.make(data)

# Saving image into a file

QRimage.save(QRCodefile)
```

```
qrObject = qrcode.QRCode(version=1,
 box_size=12,border=10)
# add data to the QR code
qrObject.add_data(data)
# compile the data into a QR code array
qrObject.make()
image = qrObject.make_image(fill_color="red")
image.save(QRCodefile)
```

OUTPUT:

Fig 1. Encoding Output

CONCLUSION :

In this project, I showed how to generate QR Code in Python by using QRcode
library and decode them using the pyopen-cv library. In this project, we understood how easy it is to generate QR codes with the help of Python programming in less than ten lines of code. With the installation of the required libraries, you can generate your own QR codes and decode them accordingly. You can embed useful URL links or important information in these QR codes and convey it to others in a simplistic,
highly structured format.