

**PROJECT BASED LEARNING II ON**

**QR CODE**

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IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE AWARD OF THE DEGREE

OF

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**BY**

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**Sinhgad Institutes**

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**2022 - 23**



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### **CERTIFICATE**

This is to certify that the project report entitles

#### **“QR CODE”**

Submitted by

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## **ABSTRACT**

QR i.e. "Quick Response" code is a 2D matrix code that is designed by keeping two points under consideration, i.e. it must store large amount of data as compared to 1D barcodes and it must be decoded at high speed using any handheld device like phones. QR code provides high data storage capacity, fast scanning, omnidirectional readability, and many other advantages including, error-correction (so that damaged code can also be read successfully) and different type of versions. Different varieties of QR code symbols like logo QR code, encrypted QR code, iQR Code are also available so that user can choose among them according to their need. Now these days, a QR code is applied in different application streams related to marketing, security, academics etc. and gain popularity at a really high pace. Day by day more people are getting aware of this technology and use it accordingly. The popularity of QR code grows rapidly with the growth of smartphone users and thus the QR code is rapidly arriving at high levels of acceptance worldwide.

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### **LIST OF ABBREVIATIONS**

<b>SR.NO.</b>	<b>ABBREVIATION</b>	<b>FULL-FORM</b>
01	URL	UNIFORM RESOURCE LOCATER
02	HTTP	HYPertext TRANSFER PROTOCOL



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# **CHAPTER NO 01**

## **INTRODUCTION**

## **INTRODUCTION**

Quick Response codes or in brief QR Codes, are two dimensional (2D) matrix barcodes that is scanned using exploitation sensible and web capable smart mobile phones having camera, with QR Reader put in as default application, allows one to access some pre-written content such as a web site address, email address, details of things within the catalogue, phone numbers etc.

QR Code is a reasonably 2-D symbology developed by Toyota subsidiary Denso Wave in 1994 with the first aim of being a symbol that is easily decoded by scanner instrumentation at high speed with additional knowledge content than conventional barcodes. Conventional Universal Product Code contains decoded data in one direction i.e. vertically into bars and house in between; whereas QR Code contains decoded data in each the directions i.e. vertical and horizontal direction. QR code is capable of holding additional volume of information than barcode, which is even a whole bunch of times as abundant data .

# **CHAPTER 02**

## **LITERATURE SURVEY**



## **LITERATURE SURVEY**

<b>Sr.No</b>	<b>Title of papers</b>	<b>Year</b>	<b>Authors of Papers</b>	<b>Description</b>	<b>Advantages</b>
1	QR code-based mobile learning system for smart education	2020	Lee, S., Lee, J., & Hong	This study explores the use of QR codes in education and presents a mobile learning system that uses QR codes to provide students with access to educational content.	Provide students with access to educational content.

2	QR code-based mobile application for attendance management	2018	Shyamkumar, K. V., & Nithin, V	International Journal of Pure and Applied Mathematics, 119(16), 1213-1220. This paper presents a QR code-based mobile application that automates attendance management in educational institutions.	Attendance management in educational institutions..
3	QR code-based mobile learning: A review of research	2019	Zhang, L., & Lu, Y.	This review article examines the use of QR codes in mobile learning and summarizes the findings of research studies that have investigated the effectiveness of QR code-based mobile learning	Effectiveness of QR code-based mobile learning

## **CHAPTER 03**

### **PROBLEM STATEMENT**



## **PROBLEM STATEMENT**

Develop a web-based QR code generator tool that allows users to generate QR codes for various types of data, such as URLs, text, email addresses, phone numbers, and more. The tool should be user-friendly and accessible on all devices. Users should be able to customize the size and color of the QR code, as well as choose between different encoding modes (numeric, alphanumeric, binary, and kanji). The generated QR code should be downloadable and printable. The project should utilize modern web technologies and adhere to industry standards for QR code generation.



# **CHAPTER 04**

## **MOTIVATION**

## **MOTIVATION**

QR codes are becoming increasingly popular in today's world. By developing a QR code generator, we will be contributing to this trend and making it easier for people to use QR codes. You can customize your QR code generator to suit your needs. For example, you can add features such as color customization and image embedding. Developing a QR code generator will help you learn more about programming concepts such as image processing and data encoding.

QR codes are becoming increasingly popular in today's world. They are used in various industries such as retail, hospitality, and government to provide easy access to information and content. QR codes offer several advantages over traditional print-based marketing. For example, they are quick and error-free compared to typing a URL on a mobile screen. Scanning a QR code is also much faster than typing a URL. QR codes can also be used to provide more informative content than print-based marketing. They can be used to engage with rich content such as videos and images.

QR codes are also actionable. They can be used to download an app or make a purchase. QR codes are trackable, which means that businesses can track where their customers have been and understand their purchasing patterns through QR codes. Finally, QR codes are easy to save. They can be saved on a smartphone or printed out for later use.

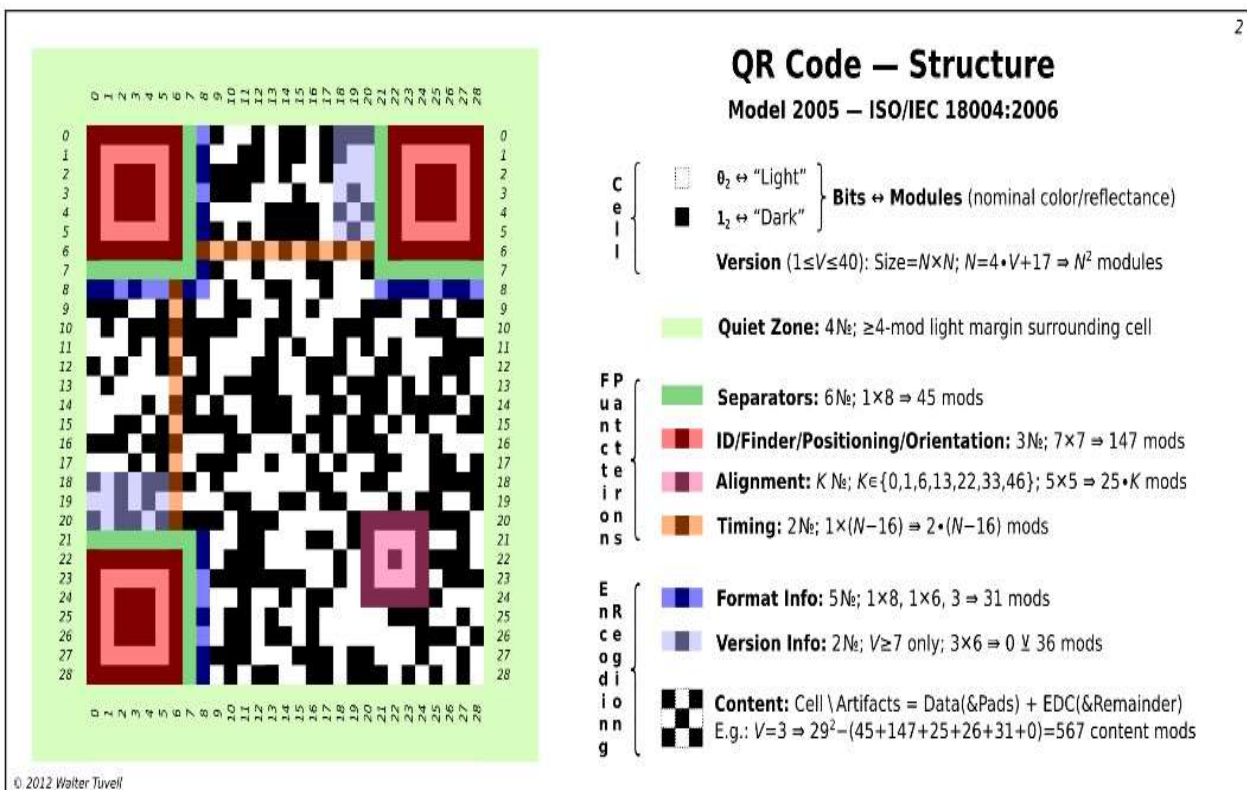
In summary, QR codes are important because they offer a simple way to connect consumers to online content and provide several advantages over traditional print-based marketing.

## **CHAPTER 05**

### **OBJECTIVES**

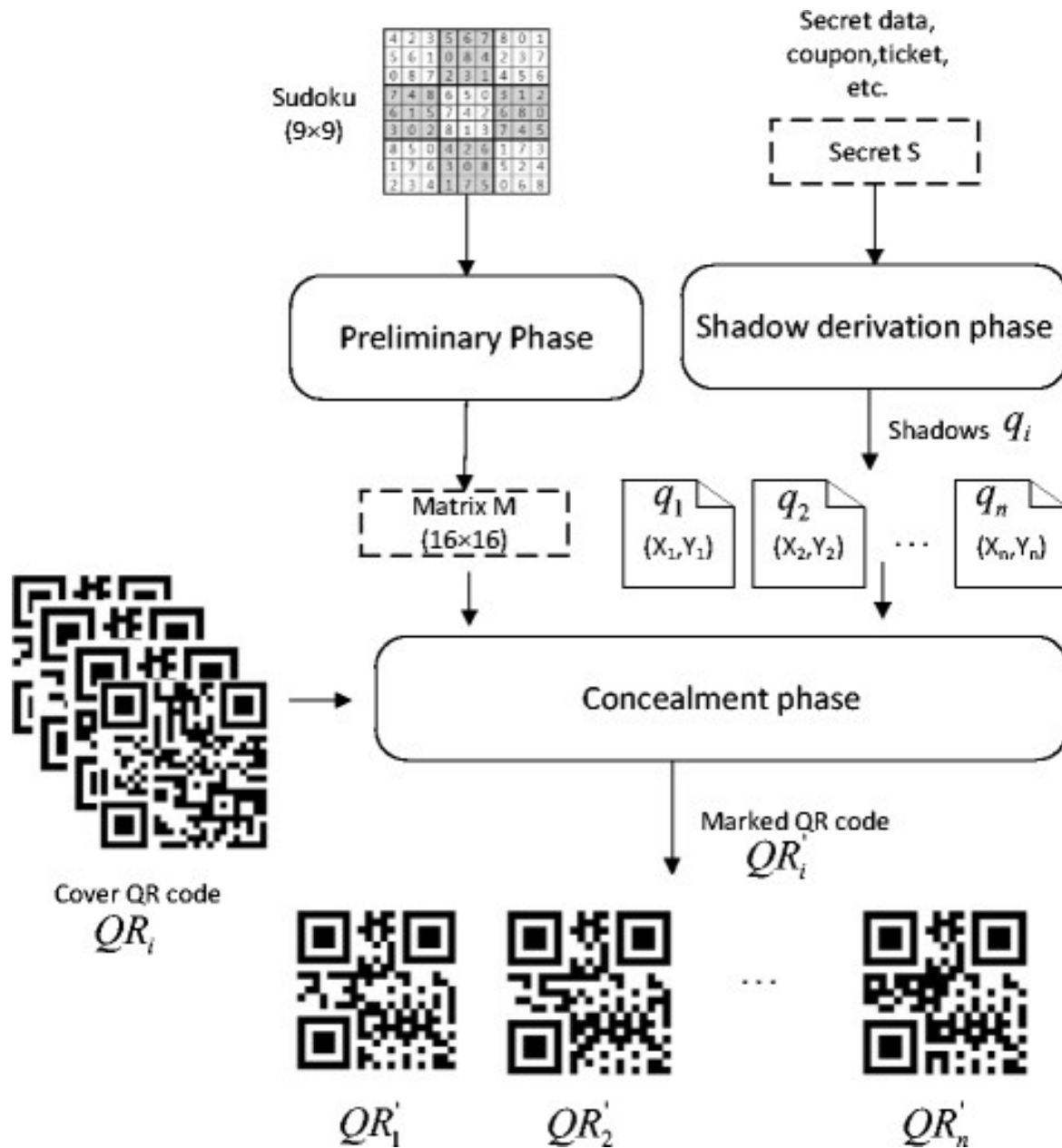
## OBJECTIVES

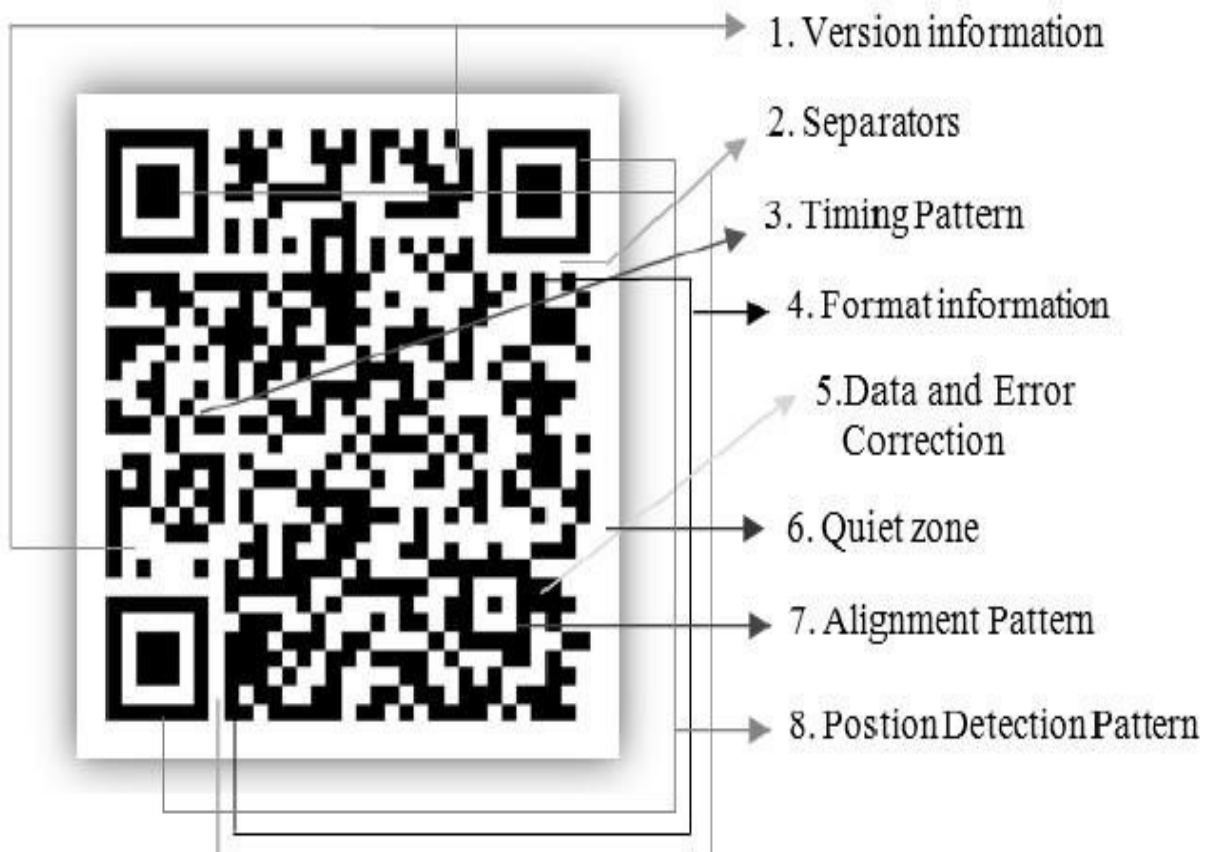
The objective of QR code generator project is to create a tool that can generate QR codes for various types of data, such as URLs, text, email addresses, phone numbers, and more. The tool should be easy to use and customizable so that users can create QR codes that meet their specific needs. Additionally, the tool should be able to generate QR codes that are compatible with different devices and platforms.



**CHAPTER 06**  
**SYSTEM ARCHITECTURE**

## SYSTEM ARCHITECTURE





# **CHAPTER 07**

## **SYSTEM REQUIREMENTS**





## **SOFTWARE AND HARDWARE REOUIREMENTS**

### **○ Hardware Requirements:**

- ☐ Processor : Pentium i3 or higher
- ☐ RAM : 4 GB or higher
- ☐ Hard Disk Drive : 20 GB (free)
- ☐ Peripheral Devices : Monitor, Mouse and Keyboard

### **○ Software Requirements:**

- ☐ Operating system : Windows 8/10.
- ☐ IDE Tool : VS Code
- ☐ Coding Language : HTML, CSS, Java Script

# **CHAPTER 08**

## **IMPLEMENTATION**



## **ALGORITHM**

Here is an algorithm for a QR code generator:

1. Get the data to be encoded in the QR code.
2. Choose the version of the QR code based on the amount of data to be encoded.
3. Choose the error correction level based on the desired level of redundancy.
4. Generate the data codewords using the selected version and error correction level.
5. Generate the error correction codewords using the selected version and error correction level.
6. Interleave the data and error correction codewords to create the final message codewords.
7. Add padding bits to the message codewords to fill out the final message length.
8. Generate the final bitstream by adding synchronization patterns, format information, and version information to the message codewords.
9. Generate the QR code matrix by mapping the bitstream to a grid of black and white modules.
10. Add quiet zones around the QR code matrix to ensure proper scanning.

# CHAPTER 09

## RESULTS



# RESULTS

## Chapter 1. Program

```
<> index.html > ...
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4    <meta charset="UTF-8">
5    <meta http-equiv="X-UA-Compatible" content="IE=edge">
6    <meta name="viewport" content="width=device-width, initial-scale=1.0">
7    <title>FLIPKART - Buy & Sell Product</title>
8    <link rel="stylesheet" href="style.css">
9    <link rel="preconnect" href="https://fonts.googleapis.com">
10   <link rel="preconnect" href="https://fonts.gstatic.com" crossorigin>
11   <link href="https://fonts.googleapis.com/css2?family=Poppins:wght@300&display=swap" rel="stylesheet">
12
13
14   <link rel="stylesheet" href="https://fonts.googleapis.com/css2?family=Material+Symbols+Outlined:opsz,wght,FILL,GRAD@48,400,0,0" />
15   <link href="https://fonts.googleapis.com/icon?family=Material+Icons" rel="stylesheet">
16
17   <script src="https://kit.fontawesome.com/404ac3b050.js" crossorigin="anonymous"></script>
18 </head>
19 <body>
20   <header class="header">
21     <div class="logo">
22       <!-- 
23     </div>
24     <div class="heading"><h2 class="headin"> QR Code Generator </h2>
25     </div>
26     <div class="nav-items">
27       <ul class="nav-item">
28         <li class="item1"> <a href="index.html">Home</a> </li>
29         <li class="item2"> <a href="about.html">About Us</a> </li>
30         <li class="item3"> <a href="contact.html">Contact Us</a> </li>
31       </ul>
32     </div>
33   </header>
34   <main>
```

```

36
37     <div class="main">
38         <div class="text">
39             <h1 class="text1">FREE ONLINE QR CODE Generator</h1>
40             <p class="para">Select the type of content you want to encode into the QR code, such as a website URL, text, or a phone number.</p>
41             <button class="button"> <a href="indexqr.html" class="qrr">GENERATE QR</a> </button>
42         </div>
43         <div class="qr">
44             <div class="img"></div>
45         </div>
46     </div>
47
48
49
50 </main>
51 <footer>
52     <div class="footer-upper">
53         <p class="text-center">Copyright &copy; <span class="mycart">qrgenerator.com</span> | All rights reserved.</p>
54     </div>
55     <hr>
56     <div >
57         <p class="footer-lower"><i class="material-icons">card_travel</i> &nbsp; <a href="#" class="footer-link"> Become a Seller</a> &nbsp; &nbsp; <i class=
58     </div>
59
60 </div>
61
62
63 </footer>
64 </body>
65 </html>

```


## Chapter 2 Output

### FREE ONLINE QR CODE Generator

Select the type of content you want to encode into the QR code, such as a website URL, text, or a phone number.

GENERATE QR



Data	<input type="text" value="https://www.google.com"/>	 100px x 100px <a href="#">Download</a>
Size	<input type="range"/>	
Logo	<input type="text" value=""/> <a href="#">Clear</a>	
Margin	<input type="range"/>	
Dot Mode	<input type="text" value="Square"/>	
Dot Color	<input type="text" value=""/>	
Bg Color	<input type="text" value=""/>	

## **CHAPTER 10**

### **CONCLUSION AND FUTURE SCOPE**



## **CONCLUSION AND FUTURE SCOPE**

The QR code generator project has successfully developed a user-friendly web application that enables users to create customized QR codes. In conclusion, the project has demonstrated the feasibility and usefulness of using QR codes in various applications, including marketing, advertising, and product packaging. The application's simple and intuitive interface provides an easy way for users to generate QR codes with different designs, sizes, and formats.

Looking towards the future, there are several potential directions for further development of the project. One possible area of expansion is to integrate the application with other tools or platforms, such as social media or e-commerce websites, to enhance its functionality and reach a wider audience. Additionally, the project can explore new features such as analytics to provide users with insights into their QR code performance. Another potential direction is to develop a mobile application to allow users to generate QR codes on-the-go.

Overall, the QR code generator project has demonstrated its potential for creating customized and versatile QR codes, and has promising opportunities for further development and growth.

# **CHAPTER 11**

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## **REFERENCES**

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**THANKYOU**