**Khed Taluka Shikshan Prasarak Mandal’s**

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**TYBBA(CA)**

**A Project Report On**

**“ QR Scanning ”**

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**QR Code: A Revolutionary Technology**

## Proposed Research Topic and Introduction

QR (Quick Response) codes have become an integral part of modern digital transactions, marketing, and authentication systems. Initially developed for tracking automotive parts, QR codes have evolved into a powerful tool for instant data sharing and secure access. This research explores the technology behind QR codes, their applications, and future advancements.

## Literature Review

QR codes were invented by Denso Wave in 1994 and have since gained widespread adoption in various industries. Compared to traditional barcodes, QR codes can store more data and provide faster scanning capabilities. Several studies highlight their role in improving digital payments, enhancing marketing strategies, and securing authentication mechanisms.

## Objectives of Study

- To understand the working mechanism of QR codes.

- To explore the diverse applications of QR codes in different industries.

- To analyze security concerns and potential advancements in QR technology.

## Area of Study

This study focuses on the technical aspects of QR code generation, scanning, and encryption techniques. It also covers real-world applications in e-commerce, healthcare, education, and financial transactions.

## Research Methodology

- Data Collection: Secondary research from academic papers, industry reports, and case studies.

- Analysis: Comparative study of QR code efficiency versus traditional data-sharing methods.

- Security Testing: Identifying vulnerabilities in QR-based transactions and authentication.

## Strength and Concerns

Strengths :  
- Fast and efficient data transmission.  
- Cost-effective implementation.  
- Wide compatibility across mobile devices and applications.  
  
Concerns :  
- Security risks such as phishing and malicious redirections.  
- Dependency on mobile devices and internet connectivity.  
- Privacy concerns in QR-based authentication systems.

## References

- Denso Wave Incorporated. "History of QR Code." <https://www.denso-wave.com/en/adcd/aboutqr.html>

- International Journal of Computer Science & Applications. "QR Codes: A Technical Perspective." Vol. 8, Issue 4, 2022.  
- National Institute of Standards and Technology (NIST). "Security Aspects of QR Codes." Report 2023.