



MID DAY MEAL BARCODE SCANNER

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Abstract

The Mid-Day Meal Scheme is one of the most important welfare initiatives implemented in educational institutions to improve student attendance and nutrition. Traditional attendance recording methods used for meal distribution are often time-consuming, prone to errors, and difficult to monitor efficiently. This paper presents the design and implementation of a Barcode-Based Mid-Day Meal Attendance Monitoring System developed using HTML, CSS, and JavaScript. The system automates student identification and attendance recording through barcode scanning technology. Each student is assigned a unique registration number that acts as a barcode identifier. When scanned, the system validates the student record, generates a token number, records attendance, and displays the student's information instantly. The proposed system minimizes manual effort, prevents duplicate entries, improves accuracy, and generates attendance reports for effective monitoring. Experimental implementation demonstrated significant improvements in speed, reliability, and operational efficiency compared to traditional methods

Index Terms—Barcode Scanner, Mid-Day Meal Scheme, Attendance Management, Student Monitoring, Web Application, Automation.

I. INTRODUCTION

Educational institutions implementing Mid-Day Meal Schemes require an efficient mechanism to track student participation and attendance. Conventional attendance recording methods involve manual verification and record maintenance, which can lead to inaccuracies, duplication, and delays in meal distribution.

Advancements in information technology have enabled the automation of attendance systems through barcode and QR code technologies. Barcode-based identification provides a fast, reliable, and cost-effective approach for monitoring student participation in meal programs.

The objective of this research is to develop a web-based Mid-Day Meal Attendance Monitoring System capable of automating student verification, attendance marking, and report generation using barcode scanning technology.

II. PROPOSED SYSTEM

The proposed system utilizes barcode technology to automate attendance recording during meal distribution. Each student is assigned a unique registration number linked to institutional records.

The operational procedure includes:

- Barcode Scanning
- Student Verification
- Duplicate Scan Detection
- Token Number Generation
- Attendance Recording
- Real-Time Statistics Update
- Attendance Report Generation

The system instantly validates student information and records attendance, reducing manual intervention and processing time.

III. SYSTEM DESIGN AND IMPLEMENTATION

The system consists of the following modules:

- A. Login Module
Provides secure access through password authentication and prevents unauthorized usage.
- B. Barcode Scanning Module

Accepts barcode input and captures student registration numbers.

C. Student Verification Module

Searches the student database and validates scanned registration numbers.

D. Attendance Recording Module

Records attendance details including registration number, student name, token number, attendance status, and date/time.

E. Report Generation Module

Generates attendance reports and allows CSV export functionality.

F. Comparison Module

Compares attendance records collected during different sessions and identifies absent students.

Software Used:

- HTML5
- CSS3
- JavaScript

Hardware Requirements:

- Computer System
- Barcode Scanner
- Web Browser

IV. RESULTS AND DISCUSSION

The developed system was tested using actual student registration data. The barcode scanner successfully identified registered students and rejected invalid entries.

The system demonstrated the following outcomes:

- Rapid attendance processing.
 - Real-time attendance updates.
 - Automatic token generation.
 - Duplicate scan prevention.
 - Attendance report generation.
 - Improved operational transparency.
- Attendance records can be printed and exported in CSV format for administrative purposes.

V. ADVANTAGES OF THE SYSTEM

The proposed system provides several benefits:

- Faster attendance recording.
- Reduced paperwork.
- Improved accuracy.
- Real-time monitoring.
- Prevention of duplicate entries.
- User-friendly interface.
- Easy report generation.
- Better management of Mid-Day Meal distribution.

VI. FUTURE SCOPE

Future enhancements can further improve the system functionality:

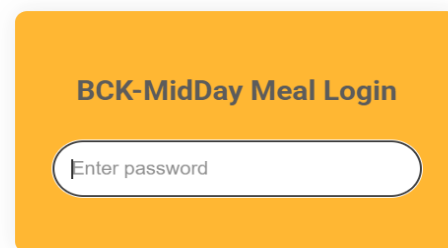
- Cloud Database Integration.
- Mobile Application Development.
- QR Code Support.
- SMS Notification Service.
- Biometric Authentication.
- Centralized Dashboard.
- Analytics and Reporting Tools.
- Multi-Institution Deployment.

VII. CONCLUSION

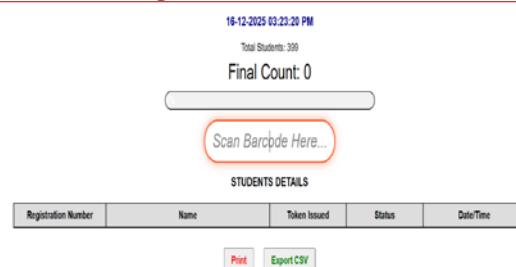
The Barcode-Based Mid-Day Meal Attendance Monitoring System successfully automates student attendance recording and meal distribution monitoring. The system minimizes manual effort, increases accuracy, and improves transparency in attendance management. The implementation demonstrates that barcode technology can provide an efficient and cost-effective solution for educational institutions managing Mid-Day Meal Schemes. Future enhancements can further extend its capabilities through cloud integration, mobile accessibility, and advanced analytics.

SCREENSHOTS

1.Login Page



2.Scanner Page



3. Reading

16-12-2025 03:23:59 PM
Total Students: 399
Final Count: 0

24188

STUDENTS DETAILS

Registration Number	Name	Token Issued	Status	Date/Time
24188	PRATHI	1	Present	16-12-2025 03:24:13 PM

Print Export CSV

16-12-2025 03:24:18 PM
Total Students: 399
Final Count: 1

Scan Barcode Here...

STUDENTS DETAILS

Registration Number	Name	Token Issued	Status	Date/Time
24188	PRATHI	1	Present	16-12-2025 03:24:13 PM

Print Export CSV

4. Report

Bhandarkars' Arts And Science College Kundapura
Mid-City Model Scheme

16-12-2025 03:27:54 PM
Total Students: 399
Final Count: 1

STUDENTS DETAILS

Registration Number	Name	Token Issued	Status	Date/Time
24188	PRATHI	1	Present	16-12-2025 03:24:13 PM

Print 1 page

Destination: Save as PDF

Pages: All

Layout: Landscape

More settings

Save Cancel

5. Compare

All Choose File attendance-16-12-2025.csv PM Choose File attendance-2025(1).csv Compare Print: Save as PDF Morning Present: 2 | Afternoon Present: 1

Present in Morning but Absent in Afternoon
Total: 1

RegNo	Name
2550169	VEDIK VASANTH P

Present in Afternoon but Absent in Morning
Total: 0
None

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