IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 6, November 2026
Impact Factor: 8.2

Hall Ticket Generation and Examination Management System

Sujith Kumar[1], Akash[2], Manoj G.[3], Vinay Kumar[4]
[1],[2],[3] Students, Department of Information Science and Engineering
[4]Project Guide, Department of Information Science and Engineering
Rao Bahadur Y. Mahabaleswarappa Engineering College, Ballari, Karnataka, India
[1] sujithkumar4427@gmail.com, [2] akashnayakakash349@gmail.com, [3] manojg.ise.rymec@gmail.com

Abstract: *Examination administration requires coordinated management of student records, subjects, schedules, halls, seating and examination documents. Manual handling can increase repetitive work and introduce inconsistencies. This paper presents a web-based Hall Ticket Generation and Examination Management System developed using Python Flask and SQLite. The application provides student and faculty workflows, semester-wise subject management, examination management, hall management, seat allocation, PDF hall-ticket generation, QR-code verification and attendance-sheet preparation. It also supports USN-based eligibility review: an administrator retrieves an existing student profile, reviews regular and backlog subject requirements, checks eligibility evidence and records an approval decision. The approval is linked to the selected examination and should be invalidated when relevant evidence or rules change. Hall-ticket generation is controlled by the current eligibility approval. The system aims to centralize examination operations and improve consistency in preparing examination documents.*

Keywords: Hall Ticket Generation, Examination Management, Student Eligibility, Seat Allocation, QR Code Verification, Flask, SQLite.

I. INTRODUCTION

Examination management is an important activity in educational institutions. It requires coordination of student information, departments, semesters, subjects, examination schedules, halls, seating arrangements and examination documents. When these activities are maintained through separate manual records, administrators may need to enter information repeatedly and verify it across multiple documents.

The Hall Ticket Generation and Examination Management System is designed as a centralized web application for managing examination-related activities. It connects student and faculty workflows with subject management, examination scheduling, hall allocation and document generation. The system also provides semester-wise subject organization and an eligibility review process before hall-ticket generation.

The main objectives are to maintain structured student and academic records; organize subjects by department and semester; manage examinations and halls; support seat allocation; generate PDF hall tickets and attendance sheets; provide QR-code-based verification; and record eligibility decisions before hall-ticket generation.

II. LITERATURE SURVEY

Web-based information systems are used to centralize institutional records, apply business rules and generate documents from structured data. In examination administration, database-backed applications can connect student information, subject registrations, examination schedules and hall details, reducing repeated manual entry and supporting consistent access to information.

PDF generation technologies support the preparation of printable documents from structured records. QR-code technologies provide a compact way to encode a reference that can be scanned and checked by an application. The

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 6, November 2026 Impact Factor: 8.2

proposed system combines these capabilities with student, faculty, examination, subject, hall and eligibility workflows in one web application.

III. SYSTEM ARCHITECTURE AND METHODOLOGY

The application follows a modular web architecture. Browser-based interfaces send requests to the Flask application. The application layer handles authentication, validation, examination workflows and document-generation operations. SQLite stores application records, while supporting Python libraries are used for spreadsheet processing, QR-code creation and PDF generation.

Student and examination records are maintained through administrative interfaces. Departments and semesters organize subject records. When an examination is created, its associated subjects and examination details are used by eligibility, allocation and hall-ticket workflows. Hall records provide capacity information for seat allocation. The hall-ticket module uses stored student and examination information to prepare downloadable PDF documents, while QR verification provides a means to check a generated ticket reference.

The eligibility workflow starts when an administrator enters a student's USN and selects an examination. The application retrieves the existing student record rather than creating a duplicate. The administrator reviews the subjects associated with the examination and the student's regular and backlog requirements. Eligibility evidence may include attendance, CIE marks, fee payment, examination registration and other configured institutional requirements. The system presents eligibility results and reasons. An authorized administrator records an approval decision with identity and timestamp. The approval is examination-specific and must be treated as stale when relevant evidence or rules change. Hall-ticket generation checks for a current approval.

TABLE I: MAJOR WORKFLOW STAGES

Stage	Activity	Output
Academic setup	Maintain student records and department/semester subjects	Structured academic records
Examination setup	Create examination and associate subjects and dates	Examination record
Eligibility review	Search by USN and assess regular/backlog evidence	Status and reasons
Approval	Authorized administrator records decision	Decision with user and timestamp
Document generation	Check approval and prepare examination documents	Hall ticket and attendance sheet

IV. IMPLEMENTED FUNCTION MODULES

A. Student and Faculty Management: Student Management maintains the student information used by examination operations. Faculty Management supports faculty-related access and examination workflows. Authentication and role-based access are used to restrict administrative functions to authorized users.

B. Semester-wise Subject Management: The Subjects Management interface organizes subjects by department and semester. An administrator selects a department and semester to view the corresponding subject list. Subject records can be added, edited or deleted, and spreadsheet import/export functions support bulk handling where enabled. This organization avoids displaying subjects from different semesters as one mixed list.

C. Examination Management: The Examination Management module provides an interface to create and manage examinations. Examination records include details such as examination name, type, department, semester, dates and associated subjects. Search and filter controls help administrators locate examinations by name and academic grouping.

D. Eligibility Management: Eligibility Management uses USN-based retrieval of an existing student profile. After an examination is selected, the administrator reviews the subjects associated with that examination and regular and backlog requirements. Eligibility evidence may include attendance, CIE marks, fee payment, examination registration and other configured institutional requirements. The system displays eligibility status and reasons for failed or pending conditions.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 6, November 2026 Impact Factor: 8.2

E. Eligibility Approval and Hall-ticket Control: An authorized administrator can record an eligibility decision with the administrator identity and timestamp. The approval is associated with the selected examination. If relevant eligibility evidence or applicable rules change, the earlier approval must no longer be treated as current. The hall-ticket workflow checks for a valid approval before permitting generation.

F. Hall and Seat Allocation: Hall Management maintains examination hall information, including available seating capacity. The seat-allocation module assigns students to available seats using configured examination and hall information. Allocation records connect students, examinations and halls for subsequent document preparation.

G. Hall Ticket and QR-code Verification: The Hall Ticket Generation module prepares a PDF document using stored student, examination and allocation information. The generated document can include student details, examination information, hall and seat information, and a QR code. The verification workflow uses the QR-code reference to support checking a generated ticket.

H. Attendance Sheets and Reports: Attendance-sheet generation uses examination and allocation information to prepare documents for examination-day use. Reports and audit-related information support review of relevant system activities.

V. RESULTS AND DISCUSSION

The application brings student records, faculty workflows, semester-wise subject management, examination management, hall management, eligibility review, seat allocation and examination-document generation into one web-based system. The interface is organized into modules so administrators can manage subjects by semester, locate examinations through search and filters, and review student eligibility using a USN.

The eligibility workflow provides a sequence of student retrieval, examination selection, regular and backlog assessment, reason display and administrative decision recording. The hall-ticket workflow is designed to require a current approval before generating the examination document. PDF and QR-code functions support preparation and verification of hall tickets, while attendance-sheet generation supports examination administration.

A quantitative evaluation should be carried out using representative institutional data. Useful measures include time required to prepare hall tickets, time required to complete eligibility review, seat-allocation correctness, validation errors detected and application response time with larger datasets. No numerical performance improvement is claimed because measured evaluation results were not provided.

VI. CONCLUSION

The Hall Ticket Generation and Examination Management System presents a centralized approach to examination administration. It connects student and faculty workflows with semester-wise subject organization, examination management, hall management, seat allocation, eligibility review, PDF hall-ticket generation, QR-code verification and attendance-sheet preparation. The USN-based eligibility workflow provides a structured way to review regular and backlog requirements and record an administrative decision before hall-ticket generation.

Future work may include integration with institutional student-information systems, configurable eligibility policy management, stronger audit reporting, automated notifications, advanced seating constraints, improved analytics and deployment testing with larger datasets. Eligibility thresholds and rules should be configured and validated by the institution before operational use.

ACKNOWLEDGMENT

The authors acknowledge the guidance and support provided by Vinay Kumar, Department of Information Science & Engineering, Rao Bahadur Y. Mahabaleswarappa Engineering College, Ballari, Karnataka, India.

REFERENCES

[1] Python Software Foundation, “Python Documentation.” Available: https://docs.python.org/3/.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 6, November 2026
Impact Factor: 8.2

[2] Pallets Projects, “Flask Documentation.” Available: https://flask.palletsprojects.com/.
[3] SQLite Consortium, “SQLite Documentation.” Available: https://www.sqlite.org/docs.html.
[4] ReportLab, “ReportLab Documentation.” Available: https://docs.reportlab.com/.
[5] Python QR Code, “qrcode: QR Code image generator.” Available: https://pypi.org/project/qrcode/.
[6] pandas development team, “pandas documentation.” Available: https://pandas.pydata.org/docs/.