

# EIMS®

Educational Institutes Management System

EIMS® - Project Document

For more information on EIMS® Software Solution visit to: [www.eimssoftware.com](http://www.eimssoftware.com)



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## Introduction

Even as Educational Institutions across the globe adapt their curricula to reflect the constant development and use of new technology, many of them are still faced with the dilemma of coping with the rapidly changing and often massive flow of information involved in the administration of these institutions. Undoubtedly, the management of information is set to play an increasingly dominant role in determining how successfully our educational institutions are being administered.

Institution administrators are therefore among those who will have to adapt to the new paradigm taking on new strategies and embracing new technologies. With limited resources and a budget that must be managed effectively in the face of conflicting priorities, administrators will need all the tools that can help to enhance the management of the institution, while providing the greatest transparency and accountability.

The more successful administrators are almost certainly going to be those who will be able to raise the levels of efficiency and effectiveness of their management capabilities through the enlightened and creative use and deployment of information and communication technology.

Today's administrators benefit from having at their disposal, application software packages which assist in collating, coordinating, processing and managing the flow of information in the administrative activities of their institutions. By facilitating real-time access to important administrative and management information, these software packages contribute significantly to institutions administration.

Here, we are looking at the use of computers and computer technology in institutional management, discusses the components, desired system features and effectiveness of administration software for Educational Institutes.

### **Institutions Administration in Perspective**

Administration of even small Institutions incorporates a wide range of tasks. It is therefore necessary at the outset to note the broad areas, which affect the management of Institution. Among these are decision-making, follow-up, staff development, time management, evaluation and reporting. More specifically however are the management and administrative tasks within the environment. These include administrative planning, budgeting, financial control, bookkeeping, personnel records, teachers' duty roster, time-tabling, student records, examination systems, regulations and reporting.

It is essential that the developers of software for Educational Institutions must have a solid understanding of the various tasks involved. The better software packages for the Institutions will be the more comprehensive ones - those that handle more of above-mentioned tasks. In addition, since these tasks can usually be grouped, it also makes sense for the software packages to adopt an approach, which makes use of functional modules that parallel the flow of information in a learning institution.

## About REDOX TECHNOLOGIES PVT. LTD.

At the onset, We would like to introduce **Redox Technologies Pvt. Ltd.** as a forerunner in providing cutting edge technology solutions in the field of Information Technology. Since 1997, We are dedicatedly working for incorporating expertise in designing, development and implementation of various kinds of software products and services comprising all streams and nature of industries.

Anticipating the vast inroads that computer technology have been going to make not only on our day to day life but also the potential and vitality, which shall have led to, increased productivity and quick and fast bucks. We focus on offering professional and personalized business solutions.

**Redox Technologies Pvt. Ltd.** has initiated to assist business enterprises achieve efficiency and effectiveness by taking them into the e-world, being partners in e-revolution. Our technical expertise and vast experience are unparalleled in the industry. Redox has a strong focus on Research & Development, Marketing and Customer Support to encompass expertise covering analyzing, designing, development and implementation of various kinds of software products and services comprising all the streams and colors of industries.

Following the innovation strategy, Redox Technologies Pvt. Ltd., has developed **E I M S - Educational Institutes Management System**, a comprehensive integrated software solution for all kinds of educational institutes. In today's environment, even Educational Institutions are not untouched from the core competition, there is a need for every Institution to proffer additional focus on achieving thrift functional and operational procedures.

## E I M S - Elements

The concept of **E I M S - Educational Institutes Management System**, aims not only at achieving operational excellence in Institutions, but also make its stakeholders, the beneficiaries of the system. As E I M S concept provides number of option through which, an Institution can share the information stored within with the Parents and other bodies and also make them feel to be a part of the Institution itself.

**E I M S concept includes the following technology elements:**

- An integrated Software Solution
- A dynamic and interactive Web Portal
- An Interactive Voice Response System (IVRS)
- Smart Cards Solution
- SMS Messaging System
- Mobile Application Interface

- **E I M S - Integrated Software Solution**

It includes no of modules, proved beneficial to achieve the operational and functional efficiencies, monitoring and optimizing the management processes & operations and enhancing co-ordination across the various departments in the Institution. Following are the software module available in both integrated network and desktop versions:

❖ MIS- Management Information System	❖ Student Registration & Admission
❖ Fee Collection	❖ Student Attendance
❖ Library Management	❖ Time-Table Scheduling
❖ Examination Management <b>(CBSE APPROVED)</b>	❖ H R Management
❖ Lecture Planning <sup>New</sup>	❖ Payroll System & Income Tax
❖ Examination Sitting Plan <sup>New</sup>	❖ Staff Attendance
❖ Front Office Management <sup>New</sup>	❖ Student Activity Management
❖ Financial Accounting	❖ Stores Management
❖ Fleet Management	❖ Assets Management

- **E I M S - Dynamic and Interactive Web Portal**

A comprehensive & interactive Web Portal is a place, where an Institution can exhibit its distinct administrative and academic aspects, provide day-to-day activity details of Institution and Students to its stakeholders and allow them to communicate their suggestions and grievances to the authorities.

It includes number of *static, dynamic and database driven section* to display Institution's information brochure, its achievements, admission norms, details about co-curricular activities like debates, sports, etc and other events held in Institution and Students fee details, result details, attendance, result analysis, home assignments, etc.

- **E I M S - Interactive Voice Response System (IVRS)**

**Interactive Voice Response (IVR)** is a software application that accepts a combination of voice telephone input and touch-tone keypad selection and provides appropriate responses in the form of voice, fax, callback and e-mail. The Interactive Voice Response (IVR) System enables organizations to provide their callers with information and services round the clock, seven days a week.

This application software allows full resource sharing and integration with the existing database of **E I M S™**, and shall cover the information about Students Fees Details, Attendance status, Result Details, Timetable, Test Schedules, Job Vacancies, Voice mail account for Students and authorities, etc.

- **E I M S - Smart Card Solution**

A **smart card** – a type of chip card – is a plastic card embedded with a computer chip that stores and transacts data. Smart cards greatly improve the convenience and security of any transaction as they provide tamper-proof storage of user and account identity. They protect against a full range of security threats, from careless storage of user passwords to sophisticated system hacks. *Multifunction Smart cards* can also serve as network system access and User account access card.

An Institution can use the Smart Card technology both for Staff and Students, as their personalized Identity Card, a tool for access control, an attendance card, for Fees payment, in Library, in in-campus stationery and photo-stat shop, cafeterias, medical shop, for storing medical history, etc.

- **E I M S - SMS Messaging System**

A **SMS (Short Message Service)** based interactive system is a two-way information-broadcasting tool for Institution to provide related information to the Students/ Parents/ visitors on their mobile phones using SMS facility. SMS tool is very interactive and robust system to get information on the mobile phone as and when required.

- **E I M S – Mobile Application Interface**

As an extension of Technology innovation for Our Clients, new information sharing technology interface has been developed on the most popular medium on Smart Phones/ Tablet PC runs on ANDRIOD Technology i.e. **E I M S – Mobile Application Interface**. This interface provides an option for the Parents/ Students who use Android bases Smart Phones/ Tablet PC to access all such information which they access via their respective Web Logins on Institution EIMS - Web Portal and get latest information updated by the Institution authorities.

## E I M S - Advantages

Some of advantages to be gained by Institutions, which decide to implement the Institution Management Software solution, include the following:

- **Improved customer service** through greater access to accurate information.
- **Increased productivity** and job satisfaction among staff members as it *eliminate duplication of effort*.
- **More economical and safer** means of storing and keeping track of information.
- **Easier access to Information** like management reports and reminder letters, etc, as well as more accurate and faster results from statistical analyses.
- **Reduces errors** and eliminating the ennui of long and repetitive manual processing.
- **Greater accountability** and transparency in operations.
- **Improved efficiency** and effectiveness in administration and management as it has *unprecedented access to real-time information*.
- More **reliable security** for sensitive and confidential information.
- **Appropriate knowledge-based** action and intervention can now take place in a timelier manner.

## E I M S - Features

The unique features of **E I M S** that make it an attractive proposition for users in the utilities sector is:

- Only basic knowledge of computers is required for operation of **E I M S**. As it has **user-friendly application interface**.
- **E I M S** is *Customizable and User Configurable*.
- An inbuilt Settings module makes **E I M S** flexibility to **cater to diverse organizational** needs.
- It is build on **JAVA technology** - one of the most latest and upcoming technologies in the field of Information Technology, which makes you a forerunner in the world of Information technology.
- **E I M S** brings information to the user's desktop through **integration** across all modules.
- **E I M S** is **Multi-user** system. **E I M S** has administrator controlled user privileges for Multi-level system access control for security.
- Better co-ordination between student – teacher, parent – institute, teacher- teacher and teacher - management **increases quality and effectiveness of education** and institution and increased transparency of operations at all levels.
- **E I M S** has **pre-defined reports**. These are used for normal reporting as well as Student & teacher development purpose. Additionally, **E I M S** can be easily customized for their own customized reports.

## EIMS - U.S.P's

- Hundreds of **MIS** Reports
- Dual mode printing i.e. Text and Graphic mode
- Platform (Operating System) independent i.e. run on both Windows and Linux
- Designed on most upcoming **JAVA** Technology. Protected with the in-built ***Disaster Management System***
- Database connectivity with remote servers for **Web Portal**
- **Compatible with the IVR** system database
- **SMS Messaging** and **Smart Card** enable System
- Customized Report designing
- Configurable as per User's requirements
- Multi-level users security



## E I M S - Integrated Software Solution

### Students Registration and Admission

This module takes care of all the aspects related to the Registration and Admission process of new students in various Classes i.e. Calling Applications, Filling Registration forms, Admission Tests and/or Interviews, Final Selection, etc., in Nursery, Primary, Secondary and Senior Secondary Section.

### Students Attendance

Here record about Students Attendance can be maintained and accessed in a very systematic and related information can be excavate and make available to the Institution Authorities and Patents easily.

### Fees Collection

Now stop worrying over a cumbersome process of keeping an account of each and every minor fees collection process as it can be taken care of by this module, which automatically keeps you informed about the entire process. It can easily depict the defaulters, dues on any of a student, a quick eye-view for management of total fees collected on a particular day / week/ month under various heads and similar other queries to be answered on a day-to-day basis.

### Result Processing System

This module will provide the unbiased system for the Students Performance Appraisal including the computerized generation of Mark Sheets for all classes and providing the modules for printing of Certificates and other official documents. **This module is a comprehensive solution for the implementation of CCE method of examination as prescribed by CBSE, Delhi, India.**

### Result Analysis

This is an important module for the real time analysis of Students performance in various term-exams conducted in Institution and Board Exams. Information about performance of students in all / a particular class in all / specific subject can be gathered on a single click and can be represented in graphical form. Like wise, information can be excavate for a number of combinations, in a figures and graphical form.

### Students Activity Management

This module comprises of the detailed specialized modules for storing information about Student Health record i.e. his Infirmary record and Term-wise and yearly Medical record, Students Disciplinary details, Students Co-curricular activity details i.e. details of participation in various Debates, Sports events, seminars, study tours, etc, along with details of the all Projects and Assignments he has undertaken.

### Library Management

Library System effectively manages a library incorporating an entire manual process which till now is need of an hour. It also provides a quick view and check on the number of books / journals issued, reminders of fines if due and a valuable set of queries relating to normal requirement process. The module is being equipped with an exclusive feature of **Data warehousing and Data mining** via a high-end search engine used for the Research and Development purposes. Also, it is compatible with the **Bar-Code** and **RFID Technology**.

### Time Table Management

This module of **EIMS** package is being particularly designed to facilitate the Institution authorities to manage and distribute the Subjects And Classes to the teachers according to their profile and synchronies the whole Time Table Process via User defined and dynamic process.

### H R Management

This module keeps the record of the complete Profile of all the staff members also identifies a shortage of staff needed to fill the vacant job positions and remind the Institution authorities about the need for Staff members of specific profile.

### Staff Attendance

This module is an essential step towards automation of attendance system of the employees with strict adherence to the time spent on duty or on leave. The pay gets automatically calculated on the basis of the time/days attended in a month and are automatically go across the Payroll module. Also, it is compatible with the **Biometric, Bar-code and RFID Technologies** for marking Staff Attendance.

### Payroll and Income Tax Management System

This module facilitates an easy Payroll Generation with an effective off shooting & overcoming of all the manual intricacies. The module is an attempt to make available every necessary report, screens & output to a user in a friendly user-interface.

The System automatically calculates every numerical calculation with retrospective effect on entire system with user left with only feeding employee information only Once. The system produces the Salary Statement, PF Statement, Income tax Statement, Due & Drawn Statement, Pay slips, Employees Loan Statement and numerous other useful reports and powered with the unique **Employee Information System** where complete details of an employee regarding his personal and official details, salary details, detailed leave account, his income tax details and many more are available at one place.

### Resource Management Software

It includes the specialized module for Asset management and Transport Fleet Management. Asset management module helps in maintaining record of all the assets you want to monitor. It can hold details of their service schedules, maintenance records, depreciated value and schedule for replacement, etc. With this module, you'll be able to monitor and manage the use and performance of Institution assets to gain better insight and control. The transport fleet management module provide you with life-cycle costing, cost analysis, fuel consumption trends, fleet utilization, powerful reporting and much more.

### Financial Accounting And Inventory Management

This is an integrated module, which provides total solution for the *Accounting and Inventory management* needs of an **Education Institution**. It comprise of various reports like Receipt & Payment A/c, Income & Expenditure A/c, Trial Balance, Balance Sheet, Bank Reconciliation Statement, Cheque Printing, Purchase Order, Stock moment reports, min. & max. stock qty reports, and many other dynamic accounts and stock reports.

EIMS - Concept Diagram



## EIMS - Web Portal

### Static Section

All of our designs are elegantly and individually co-ordinated precisely so that the user does not lose site of the most important part of your services. We offer Flash Design, which provides animation and sound, and HTML Design. Both variants of Flash and HTML Design can of course be combined.

To all Internet visitors, their first impression of an Organisation is its Web site, the presentation, ease of use and performance. Slow response time resulting from too many/large graphics objects, or missing contents such as broken links and missing images, can turn away potential Visitors.

Following are the few heading, sorted out to portray attractively information about the history of your Institution, its awards and achievements, about the Institution Management, Staff and Students, its motto and objectives and many more.

### Suggested Static Sections

- ◆ General Information
- ◆ Institution Info
- ◆ Infrastructure & Facilities
- ◆ History
- ◆ About Institution Management
- ◆ Facilities & Infrastructure
- ◆ Activities – Awards & Achievements
- ◆ Motto & Objectives
- ◆ Institution Calendar
- ◆ Curriculum
- ◆ Admission – Criteria, Fees and Forms
- ◆ Our Staff – Performance and Achievements
- ◆ Principal’s Profile

### Interactive Section

This section is known as ‘Dynamic Section’ for a static HTML "container"/ page connected with database situated at the host sever. A dynamic website is a web site in which information is updated on a regular basis via associated database. The user can retrieve and submit any type information from and to the Web site.

<b>Principal’s Message</b>	Displays the regular message issued from the Principal’s desk.
<b>Work-Shops</b>	Give the Details of various Hobbies/ Subject Work Shops held for Students over-all personality development. (With Photo Gallery)
<b>Students Forum</b>	Facilitates online submission of articles, documents, Prose/ Fictions/ Story/ Riddles/Articles/ created by Students themselves.

<b>Newsletters</b>	Newsletters published by the Institution to update the Patents, Students and other Stakeholders about its activities.
<b>Career Guidance</b>	Career Guidance to Students Seeking advice. Along with Frequently Asked Questions (FAQ's) section.
<b>Assignments</b>	Provides Students home assignments for all Classes from LKG to class XII.
<b>Computer Magazine</b>	Displays the collection of work done by Students on <b>Computers</b> in the form of Presentations, Paintings, Collages, Websites in the Institution.
<b>Virtual Tour</b>	Includes Downloadable video clippings about Institution.
<b>Recruitment Notices</b>	Displays the Vacancies available in the Institution.
<b>Examination Schedule and Results</b>	Here, the Institution Time Table of various Classes (optional), Examination Date Sheets of various terms is being put on display.
<b>Institution Events</b>	Displays various activities/ events Organised in Institution i.e. debates, cultural fests, seminars, Sports events, Study Tours, etc along with the glimpses of special moments captured in photographs.
<b>Alumni</b>	Online registration of ex-students of the Institution and displays registered alumni's information.
<b>Counseling</b>	Sections where Students can ask for an expert advise from Institutions' Counselor for their Problems. Includes Case History of Students Counseling.
<b>Board Results</b>	Displays Results of X <sup>th</sup> & XII <sup>th</sup> Class.
<b>Photo Gallery</b>	Photo Gallery is a place where moments of various Events, Ceremonies, Functions, Seminars, and Consortiums are being captured in the camera are displayed.
<b>User Security Module</b>	This module provides the <b>Administrator and User</b> level security, for different sections of Web Portal can be operated by different departmental authorities in Institution.

**Note: More sections could be added to the CMS control panel as per the specific client requirements.**

### Remote Server Database Connectivity Application

Under this section of the **E I M S - Web Portal**, the information entered, processed and stored in the local database of the **E I M S- Integrated Software Solution**, can dynamically be uploaded to the remote database of the Web Portal via a specially designed **Remote Server Database Connectivity Application**. Using this application, an Institution can independently update the remote database of Web Portal with the latest students information, being managed in local database of **E I M S - Integrated Software Solution**.

Since, all the data about Students details (official and personal information), his results, fee details, attendance, etc and Employees details is being managed in the local database, this solution *eliminates the need of recurring data entry* of records on the Web Portal, i.e. there is no additional data entry cost involved. This in return brings efficiency of time and resources in Institution.

#### **Features of Students Login:**

This section provides the **Students Login ID / Password** protected system for Parents to access their Wards includes the following:

- ◆ Student Profile
- ◆ Students' Detail Fees Account (including online Fee Receipt print facility)
- ◆ **Students Attendance Record:** Daily/ Monthly / Term wise Attendance
- ◆ **Student wise Results:** Term wise and Session wise
- ◆ **Students' performance analysis:** With graphical comparative performance analysis of current and previous sessions.
- ◆ **Home Assignments:** Subject wise
- ◆ Personalized Reminders from Teachers
- ◆ Wards achievements and awards in co-curricular activities session wise.

A privilege being provided to all the Parents/ Guardians through a secured **User ID & Password System**, to get synopsis of all the day - today performance and growth of their Ward in all phases i.e. their *Academic, Social, Psychological and Co-curricular* front in the Institution. Here, they will be able to access the information of Students Profile, his detailed Fees account, his Term wise and Daily attendance and his appraisal report i.e. result statement along with the comparative graphical analysis – Term wise and Subject wise, which enables them to get evaluate the students performance in the Class and last but not the least his performance in various Co-curricular activities organized in the Institution. *(And others as required)*

#### **Features of Staff Login:**

- ◆ Staff Profile
- ◆ Salary Account (including online Fee Receipt print facility)
- ◆ Attendance Record : Detailed Leave Record
- ◆ Income Tax Details
- ◆ Increment Details
- ◆ Salary Slip
- ◆ Individual Library Account
- ◆ Provision to update assignment and tutorials from web account

### **Benefits for Parents:**

- ◆ Just by click, parents can know the details of their child any time any day.
- ◆ Parents can stay connected anywhere in the world as they have access to Institution Website with their **private username and password**.
- ◆ Readily access to grades, attendance, homework, schedules and other activities.
- ◆ They can view their child's reports, fee details, homework, assignments, examination, discipline records, attendance, timetable, etc.
- ◆ Parents are better prepared to help with homework as they can see what is scheduled and when it is due.
- ◆ Easily send message to your child's teacher, administrator or any other Institution authorities.
- ◆ Parents will be informed about their child's attendance to be alert for any unusual absences.
- ◆ Receive announcements and reports in time through email.



## E I M S – Mobile Application Interface

As an extension of Technology innovation for Our Clients, new information sharing technology interface has been developed on the most popular medium on Smart Phones/ Tablet PC runs on ANDRIOD Technology i.e. **E I M S – Mobile Application**. This interface provides an option for the Parents/ Students who use Android bases Smart Phones/ Tablet PC to access all such information which they access via their respective Web Logins on Institution EIMS - Web Portal and get latest information updated by the Institution authorities.

### Features of Students Login:

The Parents/ Student will get an authorization key using which they can download the **E I M S – Mobile Application** from the Institutions EIMS - Web Portal and get it installed on their Android based Smart Phones/ Tablet PC. Once they install the **E I M S – Mobile Application**, they can login and access various information which includes the entire academic and Co-scholastic details of the Students, such as:

- ◆ Student Profile
- ◆ Students' Detail Fees Account, also provides downloading of Fee Receipt
- ◆ **Attendance Record:** Daily/ Monthly / Term wise Attendance (With Graphical Interface)
- ◆ **Results:** Term wise (With Graphical Analysis)
- ◆ **Library Account**
- ◆ **Home Assignments**
- ◆ Tutorials
- ◆ Question Bank
- ◆ Time Table
- ◆ Date Sheet/ Exam Schedules
- ◆ Disciplinary Details
- ◆ Infirmary and Medical Details
- ◆ Academic Calendar
- ◆ Personalized Notification / Remarks from Teachers and Many More.....



A privilege being provided to all the Parents/ Guardians through a secured **User ID & Password System**, to get synopsis of all the day - today performance and growth of their Ward in all phases i.e. their *Academic, Social, Psychological and Co-curricular* front in the Institution while travelling, in-office or at home.

**For Staff Members:**

The Staff Members can access the following information through their respective logins in **EIMS – Mobile Application:**

- ◆ Staff Profile
- ◆ Salary Account (including online Fee Receipt print facility)
- ◆ Attendance Record : Detailed Leave Record
- ◆ Income Tax Details
- ◆ Increment Details
- ◆ Salary Slip
- ◆ Individual Library Account
- ◆ Provision to update assignment and tutorials to the Students of their respective Classes/ Subjects.

## E I M S - SMS Messaging System

**SMS** based interactive system is an **information broadcasting** tool to provide Institute/ Organization related information to the students/ parents/ visitors on their mobile phones using SMS facility. SMS tool is very interactive and robust system to get information on the mobile phone as and when required. This application software allows full resource sharing and integration with the existing database of **E I M S - Integrated Software Solution**, Our Software solution for the complete computerization of Educational Institutions.

The SMS based interactive system as discussed, shall cover the following informational requirements:

- **Fee Alerts**
  - Details of the current fee due
  - Fee payment Reminders to defaulters
  - Confirmation of fees paid
  
- **School Transport related status.**
  
- **Attendance status of the student.**
  
- **Result Alerts**
  - Exam Date Information
  - Summarized Result Information
  
- **Library Alerts**
  - Books Due/Overdue Information (to both Students and Staff)
  - New arrivals Information
  
- **Payroll Alerts**
  - Salary Information
  - TDS and Increment Information
  
- **Special Announcements**
  - New / Events information
  - Holidays information
  - Bus information
  - Customized wishes
  - Urgent alerts to parents/students

**Note: More features can be added on the basis of Institutions requirement.**

## E I M S - Smart Cards

### Contact Less Smart Card

**RFID** (Radio Frequency Identification) allows an item, for example a library book, to be tracked and communicated with by radio waves. This technology is similar in concept to a cellphone. **RFID** is a broad term for technologies that use radio waves to automatically identify people or objects. There are several methods of identification, but the most common is to store a serial number that identifies a person or object, and perhaps other information, on a microchip that is attached to an antenna (the chip and the antenna together are called an RFID transponder or an RFID tag). The antenna enables the chip to transmit the identification information to a reader. The reader converts the radio waves reflected back from the **RFID** tag into digital information that can then be passed on to computers that can make use of it.

A **Smart Card** (or an RFID Card) is a piece of plastic, the same size as a credit or debit card, with a silicon chip embedded in it that stores and transacts data between users. **Contact less smart card** contains an embedded antenna attached to the chip for reading and writing information contained in the chip's memory. The card is "smart" because it is "active", that is it can receive information, process it and then "make a decision". For example, when a smart card is shown to a terminal, the terminal sends its "digital signature" to the chip. If the "digital signature" agrees with the existing parameters in the chip's memory, then the memory files are opened and the data is made visible to the terminal. In the same way, the card sends its "digital signature" to the terminal and the terminal verifies it. This mutual verification is done "off-line": this means that the computer need not to keep 'on' while terminal is operating. The verification process typically takes a fraction of a second.

To access any of the below mentioned applications employee(s)/student(s) has to show his card to the contact less reader with a distance of 80mm for secure authentication & authorization. Whenever any user punches (shows) card to the reader, primarily data is stored in the 128 KB of memory embedded into the reader. 10,000 to 12,000 punches of these data can be stored in the reader itself. Later this data is to be transferred from the reader to any computer attached via data collect software developed by **Redox Technologies** specifically compatible with its readers.

The data collected by the reader using the "data collect" is transferred to the computer system connected through the appropriate communication interface (**RS 232/422/485**).

Smart card-enhanced systems are in use today throughout several key applications, including **healthcare, banking, entertainment and transportation**. To various degrees, all applications can benefit from the added features and security that smart cards provide.

### Usage of Smart Cards in E I M S modules:

- Smart Identity Card

Smart cards can store benefits, pension payments and health insurance refunds in an e-purse and securely identifies cardholders when claiming benefits.

- Library management

Smart Card and RFID Technology can be used for library circulation operations and theft detection systems. RFID-based systems move beyond security to become tracking systems that combine security with more efficient tracking of materials throughout the library, including easier and faster charge and discharge, inventorying, and materials handling.

- Fees Payment

A Smart Card facilitates the faster and easier mode of payment at the Fees Counter, as the fee clerk can process the fee collection process very easily. Thus the users do not have to stand and wait in long queues for fee payment.

- Staff and Student Time And Attendance

To access the above stated application, Student(s) / Employee(s) always has to show his card to the contactless reader to mark his attendance. The data of all the employees / Students who have shown their smart cards to the reader will be stored in the readers, which is then transferred to the computer attached for further processing and reporting. The reader records the date of punching of student(s) / employee(s), in and out time(s), overtime. The software also has the option for machine raw punching (in case the employee forgets to bring his card) and generate all kind of reports MIS reports.

- Access Control Security System

**Access control** means restricting the entry of unauthorized person(s) or employee(s)/student(s) to a particular section of the organization. While implementing the access permission, we require to install an electromagnetic lock on the door(s) of the restricted area. The reader is connected to the electromagnetic lock, every time a person entering the area is supposed to show his card to the reader. If the person is permitted inside, the door will open automatically otherwise not and within milliseconds the information of the unauthorized person is flashed on any node/terminal attached therewith. People can be authorized and restricted for access permissions according to time and requirement. We call it 'Masking' which can be done for any number of employee(s) /student(s)/authorized person.

Restricting the prohibited area from visitors

**If a magnetic lock is placed at the door of the restricted area. A person with a visitor pass is never permitted inside that area until unless escorted by an authorized person using a masked card.**

Once a person enters the area, for exit we can have optional methods:

- **Push Button** of coming out if in case you are not interested to monitor the out the person who has entered the area.

- Another **reader** coupled to the same lock, which will monitor the outgoing of the person who has entered the restricted area. This will enhance the security system and provides complete information when a person entered and left.

- Monitoring employees department wise

Using the access permission we can monitor incoming and outgoing records of any employee/student. Every time an employee enters or leaves, he will have to present the card to the reader in order to operate the gate and those records are maintained simultaneously. This can help the company's administration to increase the working potential of the backbone departments like "R&D", labs etc. a person can authorize to enter only his/her own department.

- Other applications
- Medical History

Smart cards can store medical treatment records, emergency information and health insurance status.

- Electronic Purse

Electronic payment cards allow cardholders to avoid the hassle of finding correct change by loading value into an electronic purse ("e-purse"), which can to pay for small-value everyday purchases at shops, vending machines, transport ticket machines, parking meters, public payphones etc.

- Campus Club Card

Smart cards are very popular with closed user groups (residents of a city, students and staff of a university, staff of a company, etc.), who can use multi-application cards to pay for or access everyday services e.g. cafeteria meals, drinks machines, library tickets, leisure center, stadium, amusement park entry, car parking, amusement park rides etc, differentiated according to individual circumstances and status.