



# DEPARTMENT ACTIVITY MANAGEMENT SYSTEM

<sup>1</sup>Ms.Swati S. Shintre, <sup>2</sup>Ms.Shubhangi B. Bagul, <sup>3</sup>Ms.Ashwini B. Kanawade

<sup>4</sup> Ms. Shital B. Tajanpure, <sup>5</sup>Mr.Kishor N. Shedje

<sup>1 2 3 4</sup>BE Student, Department of Computer Engineering, SVIT Chincholi, Nashik, 422101, India

<sup>5</sup> Head of Department, Computer Engineering, SVIT Chincholi, Nashik, 422101, India

**Abstract:** In today's competitive environment, Information management and processing at all levels becomes a very crucial task for any type of organization. It is very important to maintain and manage every informational aspects of the organization to become successful entity. Educational institutes also not the exception in this era.

Department Activity Management System is an ERP Software solution to tackle above cut edge information management needs of any technical education institute. Proposed system provides a simple and user friendly environment to manage various levels of information in any educational institute. The Department Activity Management System is based on client server architecture where server side is controlled by administrator and different types of client users can interact with the server to serve their informational need.

The Department Activity Management System consist four major categories of user such as students, teachers, operators, and administrator. Student user can add various student details for further analysis, view notes and assignments, check academic performances, view attendance details. Teacher user can upload notes and assignments, enters attendance records for respective subjects, enter marks of different levels of tests, view or analyses students performances. Operator is responsible for event, notices, and data entry managements. Administrator controls the system at all levels. Only admin can enter all administrative details in the system.

The Department Activity Management System specially focuses on notifying academic and attendance performance of the students to their parents. Parents are able to receive messages about their child's on their registered mobile numbers as well as emails.

**Index Terms - Information Processing, Performance, Attendance, Reporting, Assignments, Notes, Events and Notices.**

## I. INTRODUCTION

Department activity management system desktop application is the one kind of desktop application which integrates all the modules and functionalities of department system on a single system that can be handled by the administrative and access by the students and faculties with valid user id and password. The main goal of the entire system is to provide a user understandable interface and powerful data system which make this system more useful [1].

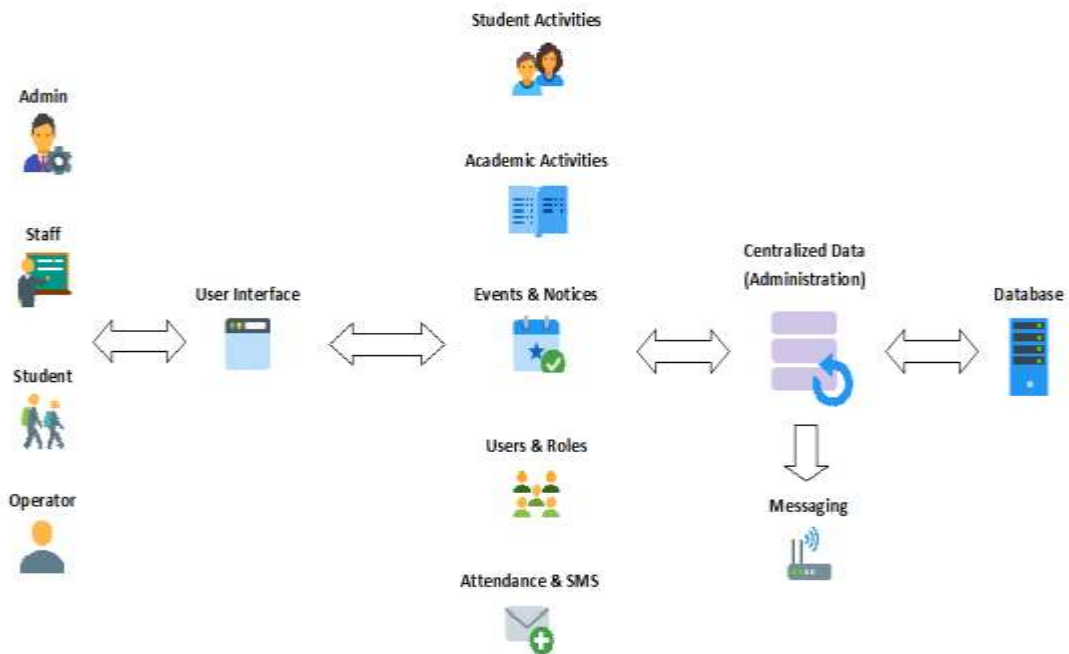
The Department Activity Management System computerizes all the details of the department system which are updated by daily. The system is only can access by the authorized persons. ERP on department activity management system reduces the most of the human work that are done earlier to managing the department system. Currently we use lots of papers to store details of students and also all information regarding department. Only a administrative is enough to maintain or made changes in the system. The security can also be provided as per the requirements because without administrator approval user can't login or can't access the system. The main thing is that our system reduces the human works [1].This system is divided into two parts i.e Server and Client. Server can handled by administrator only and clients side handled by staff members and students after the approval of admin.

It can be helpful such that

- Records are always up to date.
- Manpower is reduced.
- Large amount of data regarding department and students like attendance, daily notification can be stored.
- Accurate calculations are made.
- Maintenance of file is flexible.

## II. PROPOSED SYSTEM

In this architecture shows, How does the Department Activity Management System work.



**Fig. Department Activity Management System Architecture**

- **Admin:** Admin has all the rights to access the system. Admin is able to manage the all the details of department as well as student Admission, staff Registration, Academics, Class Routines. First task of administrator is that to adds all the staff members of respective subject. Also assign the role to the users. Then the classes are added and the respective Staff member is allocated to the class as a class coordinator. This all responsibilities are managed / handled by administrator only. This access is illegal for the rest of users. Admin can manage the accounts of the all the students' and Staff and parents also. All the details of student academics performance, extra activities and attendance reports can be view and manage by Admin itself.
- **Teacher:** Staff members are registered by admin. Teachers are login in the system only after the admin approval. Staff has rights to manage all the data of their subjects of respective class. They can manage daily attendance of all students and also keep record of all extracurricular and co-curriculum activities of student. Staff members are able to give notifications and can upload some notes related to their respective subjects. Staff can generate the daily, monthly or yearly attendance report of students. Instead of manual work this application gives usual work. Teacher is responsible to send student attendance as well as academic performance reports to their Parents.
- **Student:** Students are login in the system only after the admin approval. When student got admitted the Enrolment Number are generated by admin and can be managed by student afterwards. Student has access rights to add or update personal information. Also students has to access rights to view our academic timetables and subject wise notes, attendance, Class Tests records, Daily Class Routines and all the notifications and upcoming events which are managed by admin.
- **Operator:** After getting registration details of student admitted in the college from student section operator can check the all information which is fill by student. And upload this student list for approval of admin .And also If any of the teacher is not available in the college then that time teacher can approve the operator to do all the work of Teacher. Operator can use to fill the appropriate record whenever student can't fill their correct information. Also the role of operator is that to upload notices of upcoming events and any other activities.
- **User Interface:** The User and System can interact or communicate with each other is called as User Interface.
- **Messaging:** Using SMS gateway daily attendance report, academic performance of children/student and also all the test marks, parent teacher interaction notices and events notifications are send through SMS Gateway to the parents.

### III. MATHEMATICAL MODULE

Let S be the system,

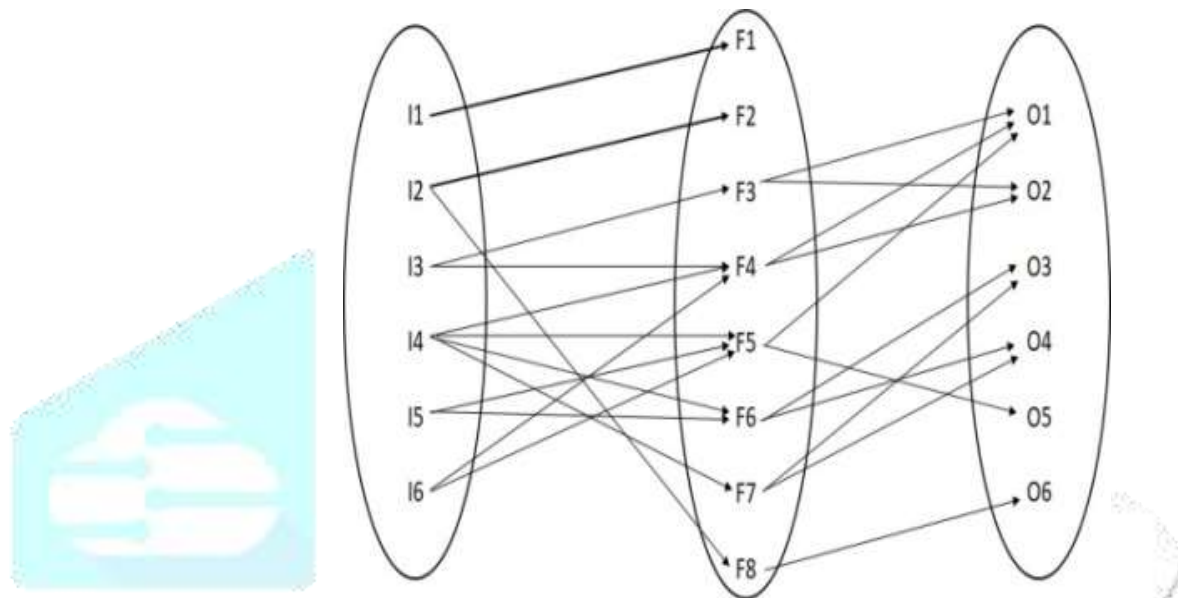
$$S = \{\text{Input, Function, Output}\}$$

Where,

Input: I1, I2, I3, I4, I5, I6

Function: F1, F2, F3, F4, F5, F6, F7, F8

Output: O1, O2, O3, O4, O5, O6



**Fig. Mathematical Module**

➤ **Inputs to the System:**

- I1 : student ,teacher, operator registration information
- I2 : users login credentials for login validation
- I3 : students personal information ,extra activity information (sports, health, awards & achievements)
- I4 : students academic information (marks, assignments, attendance)
- I5 : courses information(courses, notes & assignments)
- I6: departmental notices & events.

➤ **Outputs to the System:**

- O1: Students can view basic information, academic information, check performance, attendance reports, notices, events.
- O2: Teachers and Admin can check student's performance.
- O3: Attendance Reports (Daily, Monthly, Semester wise).
- O4: SMS Alerts to Parents
- O5: Assignments and Notes to parents
- O6: Database Backups

➤ **Functions to the System:**

- User Approval ,Roles ,Assignments by Admin
- Capture student's personal & extra activities information.
- Uploading notes, assignments, attendance, events and notices.
- Calculation of attendance and generation of attendance reports(Daily, monthly and Semester wise)
- Operate SMS and send to parents.
- Backup and recovery of database
- Registration Process

#### IV. OVERALL SYSTEM ALGORITHM

The system can be divided into two parts:

- 1) Server
- 2) Client

##### 1) Server:

1. Login to the system by Admin user only...
  - 1.1 Validate credentials if true go to step 2
  - 1.2 Else go to step 1
2. Registrations of basic information such as departments, classes, divisions, academic year, designations, and qualifications.
3. Adding subjects and their teaching and marking schemes set by university curriculum.
4. Set semester wise courses for each class such as FE, SE, TE, and BE.
5. Registration of administrative users for first time to access and manage the system. Administrative users are head of departments, teachers, and operators.
6. Approval of administrative users by admin to grant access to the system.
7. Assigning teaching workload to teachers on different classes by their respective head of departments.
8. Approval of students by admin to grant access to the system.
9. Blocking and unblocking users and students by admin as and when required.
10. Sending email to all approved users and students.
11. Sending personalized email to blocked users specifying reason of blocking.
12. Viewing academic performance, extra activity performance, events and notices uploaded by students, teachers, and operators.
13. Viewing attendance records of all students or individuals, percentages of attendance etc.
14. Sending messages to parents about reporting attendance percentages on daily, monthly, and overall basis.
15. Generating reports about attendances and academic performances.

##### 2) Client:

1. Login to the system by different users such as students, operators, teachers, or head of departments.
2. Validate login credentials:
  - 2.1. If true then enable master menu and check type of user
    - 2.1.1. If type of user is student then enable student
    - 2.1.2. Else if type of user is operator then enable operator menu
    - 2.1.3. Else if type of user is teacher or hod then enable teacher menu
    - 2.1.4. Else enable guest menu
  - 2.2. Else go to step 1
3. Student Menu
  - 3.1. Student user will register his or her personal information details.
  - 3.2. Student user will add sports and extra activity details
  - 3.3. Student user will enter parent details
  - 3.4. Student user can update or delete his or her information at any level through individual login.
  - 3.5. Student user can view and track attendance record about his or her registered subjects in current semester.
  - 3.6. Student can view, access, and upload notes and assignments.
  - 3.7. Student can check overall academic performance.
  - 3.8. Student can view various reports about academic and attendance generated by administrative users.
4. Teacher Menu:
  - 4.1. Teachers add their personal and experience information
  - 4.2. Teachers can view the subjects workload assigned by admin (hod)
  - 4.3. Teachers can fill subject wise attendance on respective days of time table
  - 4.4. Teachers can view attendance records of their respective subjects
  - 4.5. Teacher can upload notes and assignments of their assigned subjects
  - 4.6. Teacher can view assignments uploaded by students and assess them
  - 4.7. Teacher can view attendance records of a class on daily, monthly, or overall basis
  - 4.8. Teacher can generate, access, and views various reports.
5. Operator Menu:
  - 5.1. Operator adds personal, academic, experience information to the database
  - 5.2. Operator uploads the provisional list of students received from student section
  - 5.3. Operator uploads the final list of students received from student section
  - 5.4. Operator registers the subjects of individual students received from student section
  - 5.5. Operator can upload events and notices to the system given by department
  - 5.6. Operator generates academic performance and attendance reports
6. Guest Menu:
  - 6.1. Guest user can only view overall public information such as attendance reports and overall performance reports.
7. Master Menu:
  - Menu

- 7.1. Students, Teachers, or Operators can change their password, view other reports
8. Logout from the system and go to step 1

## V. CONCLUSION

The fundamental problem in maintaining and managing the Manual work by the administrator is hence overcome. Also we keep all the records of students and overall information of department. Manual work is decreased by using this software. Prior to this it was a bit burdensome for maintaining the schedule and also keeping track of the daily timetable. But by developing this Network-based application the administrator can enjoy the job, doing it effortlessly and also by saving the precious time.

## VI. ACKNOWLEDGMENT

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