STUDENT ATTENDENCE MANAGEMENT SYSTEM

A Course Based Project Submitted in Partial Fulfilment Of the Requirements

For the Award of the degree of

BACHELOR OF TECHNOLOGY
COMPUTER SCIENCE AND ENGINEERING-CYBER SECURITY

Submitted by

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INSTITUTE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institute ,NAAC Accredited With 'A++' Grade ,NBA Accredited ,Approved by AICTE ,New Delhi ,Affiliated to JNTUH)

VALLURUPALLI NAGESWARARAO VIGNANA JYOTHI INSTITUTE OF

ENGINEERING AND TECHNOLOGY

(An Autonomous Institute)

CERTIFICATE

This is to Certify that **G. SAI KISHORE (21071A6219), A.PRAVALIKA(21071A6202) KEERTHI PRASANNA(21071A6205)**
have successfully completed their project work at
CSE-CYS,DS &(AI&DS) Department of VNRVJIET, Hyderabad entitled

"STUDENT ATTENDENCE MANAGEMENT SYSTEM" in partial
fulfilment of the requirements for the award of the Bachelor of Technology
degree during the Academic year2022-2023

Head of Department

Dr. M. RAJA SEKHAR

Prof. and Head

Dept. of CSE-CYS, DS &(AI&DS)

VNRVJIET

<u>DECLARATION</u>

This is to certify that the project work entitled **"STUDENT ATTENDENCE MANAGEMENT SYSTEM"** submitted in VNR Vignana Jyothi Institute of Engineering & Technology in partial fulfilment of requirement for the award of Bachelor of Technology in Computer Science and Engineering.
 Department of cyber security

ACKNOWLEDGEMNET

Behind every acheivement lies the heartfelt gratitude to those who activated in completing the project. To them we lay the words of gratitude within us.

Wenare indebted to our venerable principal **Dr. C.D. NAIDU** for this unflicting devotion, which lesd us to complete this project. The support , encouragement given by him and his motivation lead us to complete the project.

We express our sincere thanks to internal guid   **Ms.Sunanda Mam**   and also Head of the Departmant **Dr. M. RAJA SHEKHAR** for having provided us a lot of facilities to undertake the project work and guide us to complete the project.

We take the opportunity to express thanks to our faculty of the Dept. of **VOMPUTER SCIENCE AND ENGINEERING-CYBER SECURITY** and remaining members of our college **VNR VIGNANA JYOTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY** who extended their valuable support in helping us to complete the project in time.

<u>ABSTRACT</u>

Keeping track of the attendance and promotions of the members along with maintaining the database is essential for any organization consisting of a vast population. It helps in analyzing the progress and regularity among the members for an institute to maximize its performance.

During the COVID-19 pandemic, managing student attendance and maintaining monthly records became a challenge for the faculty members as the amount of manual work and time it takes to compute percentages is a lot and there is also a huge amount of calculation errors that are generated. To cater to the faculty members' needs, this Application will help ease the challenge by reducing the amount of manual work.

Our project mainly focuses on attendance of every student for every branch. This is to automate the process of recording the daily attendance, generating monthly reports enabling the higher officials to continuously monitor and alert if a student is falling short of attendance. As the promotion of the student to the next semester is based on his/ her end semester attendance, through this project, it would be easy for the faculty members to know the number of students that are going to be promoted and the number that will be detained. Complete data will readily be available for the head of the department in the form of a report.

This project will be built on ORACLE using MySQL. The features of DBMS will be used to build a robust database that enhances the application, and the core concepts of SQL will be used for defining and manipulating the database.

SCHEMA

Students Table-
(Rno char(10) Primary Key,Sname varchar(30),Section
varchar(10),Dob,Mobile number(10),Address varchar(30),Gen
varchar(1), Medicalproof char(1));

Column name	Datatype	width	Constraint
Rno	char	10	Primary Key
Sname	varchar	30	
Section	varchar	6	
Dob	date		
Mobile	number	10	
Address	varchar	30	
Gen	varchar	1	
Medicalproof	char	1	

Subject Table –
(Subid varchar(10) Primary Key, Subname varchar(30),Fname
varchar(30),Fidvarchar(5), Deptname varchar(5));

Column Name	Datatype	Width	Constraint
Subid	varchar	10	Primary Key
SubName	varchar	30	
Fname	varchar	30	
Fid	varchar	5	

Deptname	varchar	8	5

Student Attendance-
(Rno varchar(10) Foreign Key, march number(2),April
number(2),Maynumber(2),Operating_systems number(4),DBMS
number(4),Operational_research number(4));

Col Name	datatype	Width	Constraint
Rno	varchar	10	Foreign Key
March	number	2	
April	number	2	
May	number	2	
Operating_systems	number	4	
DBMS	number	4	
Operational_research	number	4	

Total Attendance-
(Subid varchar(10),SubName varchar(30),March number(2), April number(2),May
number(2));

Col Name	Datatype	Width	Constraint
Subid	varchar	10	Foreign Key
SubName	varchar	30	
March	number	2	
April	number	2	

May	number	2	

DATA

STUDENTS INSTANCE TABLE :

Rno	Sname	Section	Dob	Mobile	Address	Gender	Medical proof
21071A6745	Rangu vipin	Cys	02-03-2003	9834121615	Kukatpally	M	N
21071A6220	Thanmai	Cys	08-01-2003	9676737798	miyapur	F	N
21071A6748	Sarrabu Vyshnavi	CYS	11-12-2003	8801401132	Madhapur	F	Y
21071A6762	Vuppala Sindhubhargavi	CYS	28-11-2004	8241361219	Jubi lee Hills	F	N
21071A6763	Yadlapati Sindhupriya	CYS	29-06-200321071	9666125348	Banj ara Hills	F	N

21071A6741	P.Mohan	CYS	04-04-2003	9878241612	Film Nagar	M	N
21071A6742	Poonam Pawar	CYS	12-03-2002	8978426121	Madhapur	F	N
21071A6743	Raavi koushik	CYS	18-05-2003	7984816218	Kukatpally	M	N

21071A6744	Raavi vishnupriya	CYS	16-03-2002	8798416217	Madhapur	F	N
21071A6701	Harsha vardhan	CYS	04-02-2003	9391257132	Film Nagar	M	N
21071A6747	Sanjitha	CYS	04-09-2001	9030876111	Old City	F	N

SUBJECT TABLE :

Subid	SubName	Fname	Fid	Deptname
A19PC1CS04	DBMS	MS.Sunanda mam	16261	CSE-CYS
A19PC1CS01	Digital Logic Design	Ms.K.Deepthi	26163	ECE
A19PC1CS03	Design and Analysis of Algorithms	Ms. Y. Bhanusree	36162	CSE-DS

STUDENT ATTENDANCE :

Rno	March	April	May	DBMS	Digital Logic Design	Design And Analysis of Algoritms
20071A3201	14	12	12	13	12	13
21071A6745	24	14	14	17	18	17

21071A6746	30	16	13	19	20	20
21071A6748	33	18	21	24	24	24
21071A6762	16	10	19	15	15	15
21071A6763	20	11	25	18	19	19
21071A6741	23	27	18	23	23	22
21071A6742	17	22	11	20	20	10
21071A6743	27	19	10	18	19	19
21071A6744	30	23	26	26	27	26

21071A6701	31	24	27	27	27	28
21071A6747	32	25	28	28	28	29

TOTAL ATTENDANCE :

Subid	SubName	MARCH	APRIL	MAY
A19PC1CS04	DBMS	15	7	8
A19PC1CS01	Digital Logic Design	11	9	10

| A19PC1CS03	Design and Analysis of Algorithms	11	8	11

ER DIAGRAM
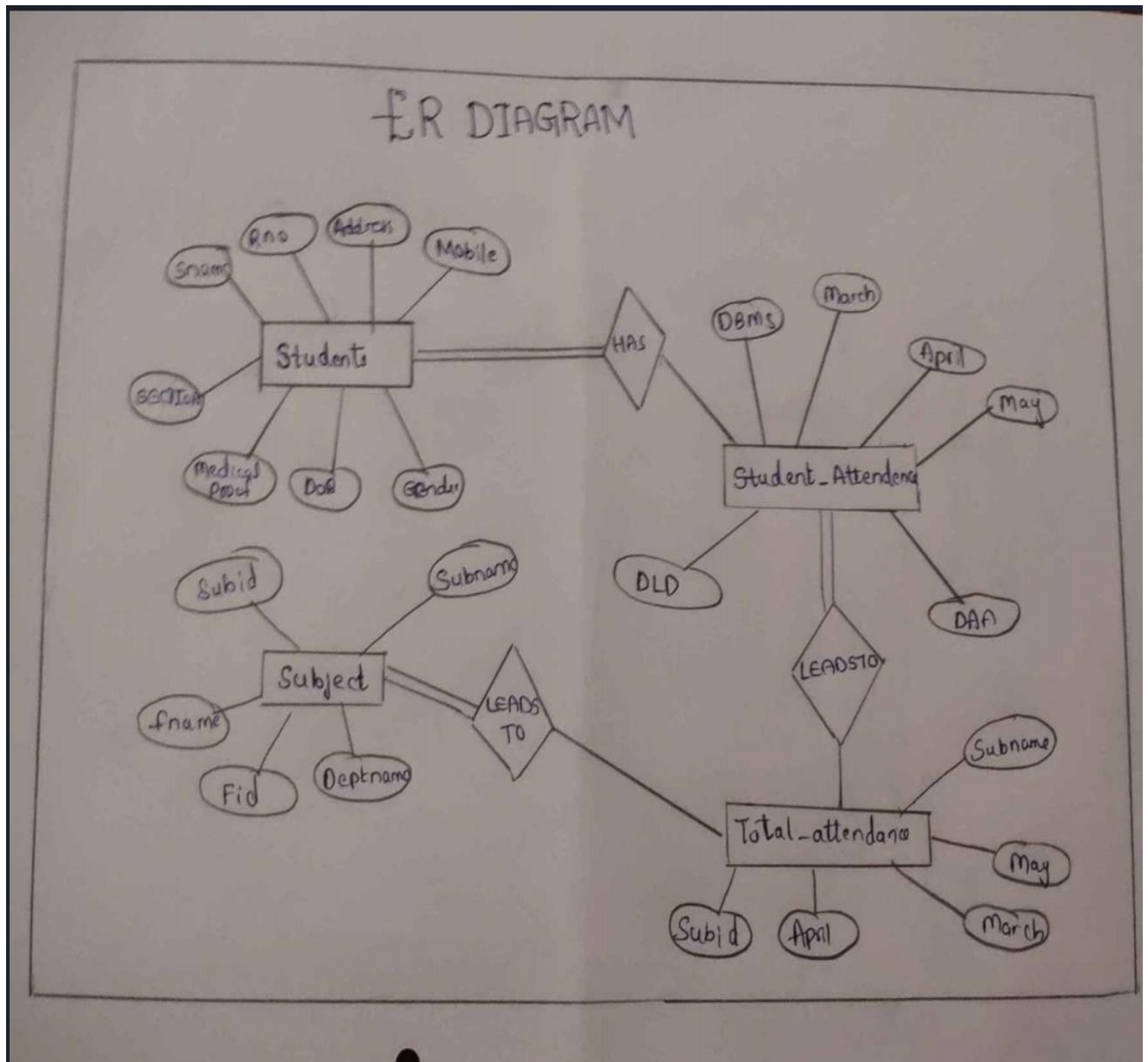
1.CLASS DIAGRAM

The class diagram depicts a static view of an application. It represents the types of objects residing in the system and the relationships between them. A class consists of its objects, and it may inherit from other classes. A class diagram is used to visualize, describe, document various aspects of the system, and also construct executable software code.

It shows the attributes, classes, functions, and relationships to give an overview of the software system. It constitutes class names, attributes, and functions in a separate compartment that helps in software development. Since it is a collection of classes, interfaces, associations, collaborations, and constraints, it is termed as a structural diagram.
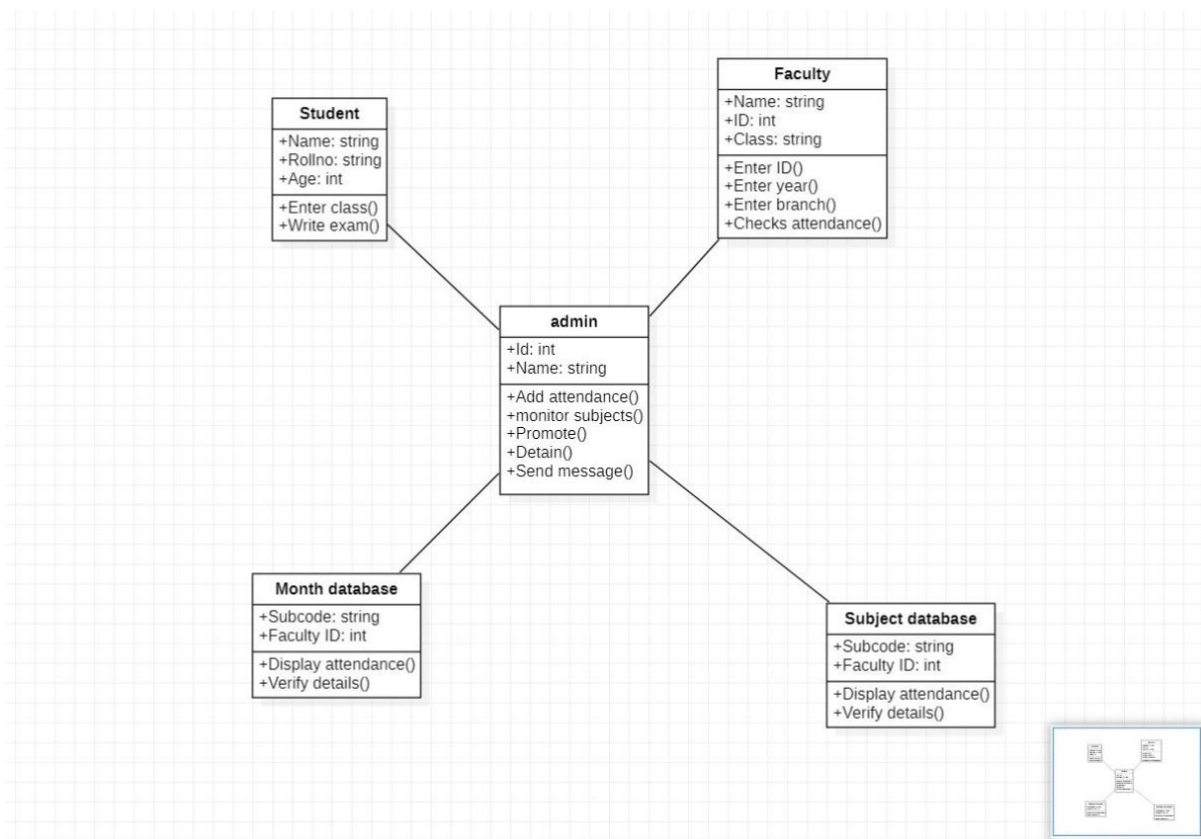
2.ACTIVITY DIAGRAM

In UML, the activity diagram is used to demonstrate the flow of control within the system rather than the implementation. It models the concurrent and sequential activities.

The activity diagram helps in envisioning the workflow from one activity to another. It put emphasis on the condition of flow and the order in which it occurs. The flow can be sequential, branched, or concurrent, and to deal with such kinds of flows, the activity diagram has come up with a fork, join, etc.
It is also termed as an object-oriented flowchart. It encompasses activities composed of a set of actions or operations that are applied to model the behavioral diagram.
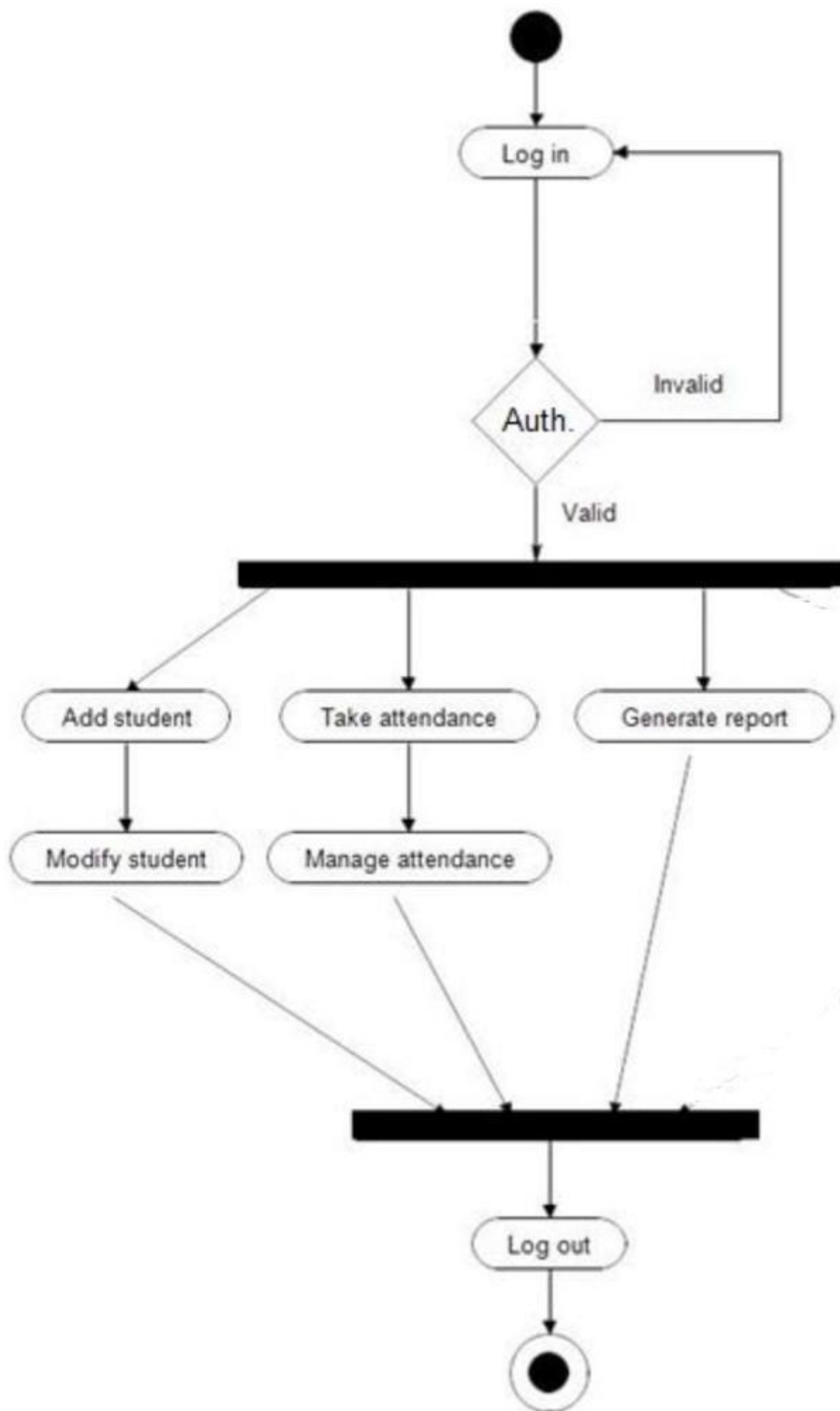
3.COMMUNICATIONDIAGRAM

The collaboration diagram is used to show the relationship between the objects in a system. Both the sequence and the collaboration diagrams represent the same information but differently. Instead of showing the flow of messages, it depicts the architecture of the object residing in the system as it is based on object- oriented programming. An object consists of several features. Multiple objects present in the system are connected to each other. The collaboration diagram, which is also known as a communication diagram, issued to portray the object's architecture in the system.
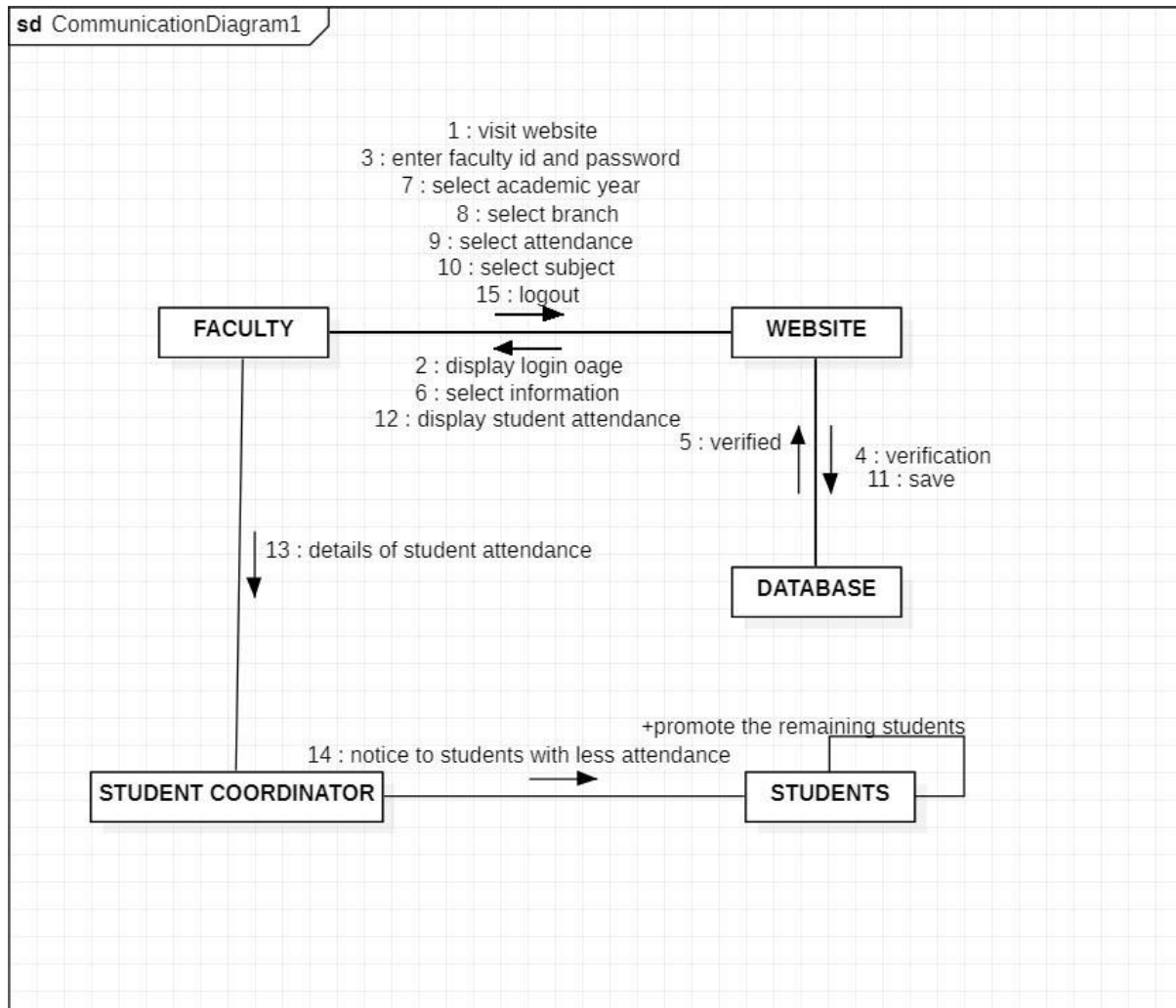
4.COMPONENT DIAGRAM

A component diagram is used to break down a large object-oriented system into the smaller components, to make them more manageable. It models the physical view of a system such as executables, files, libraries, etc. that resides within the node.

It visualizes the relationships as well as the organization between the components present in the system. It helps in forming an executable system. A component is a single unit of the system, which is replaceable and executable. The implementation details of a component are hidden, and it necessitates an interface to execute a function. It is like a black box whose behavior is explained by the provided and required interfaces.
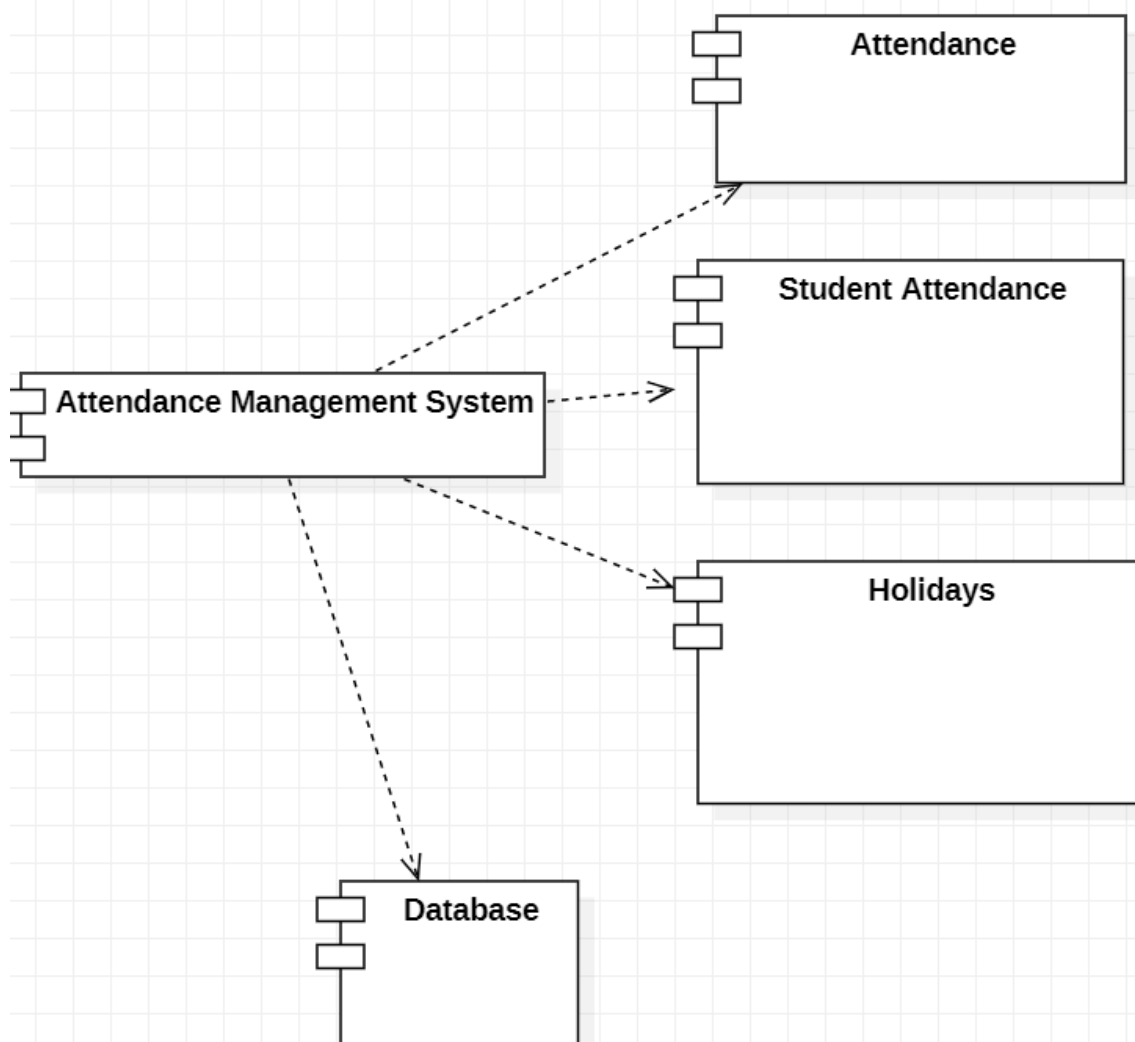
5.DEPLOYMENT DIAGRAM

The deployment diagram visualizes the physical hardware on which the software will be deployed. It portrays the static deployment view of a system. It involves the nodes and their relationships.

It ascertains how software is deployed on the hardware. It maps the software architecture created in design to the physical system architecture, where the software will be executed as a node. Since it involves many nodes, the relationship is shown by utilizing communication paths.
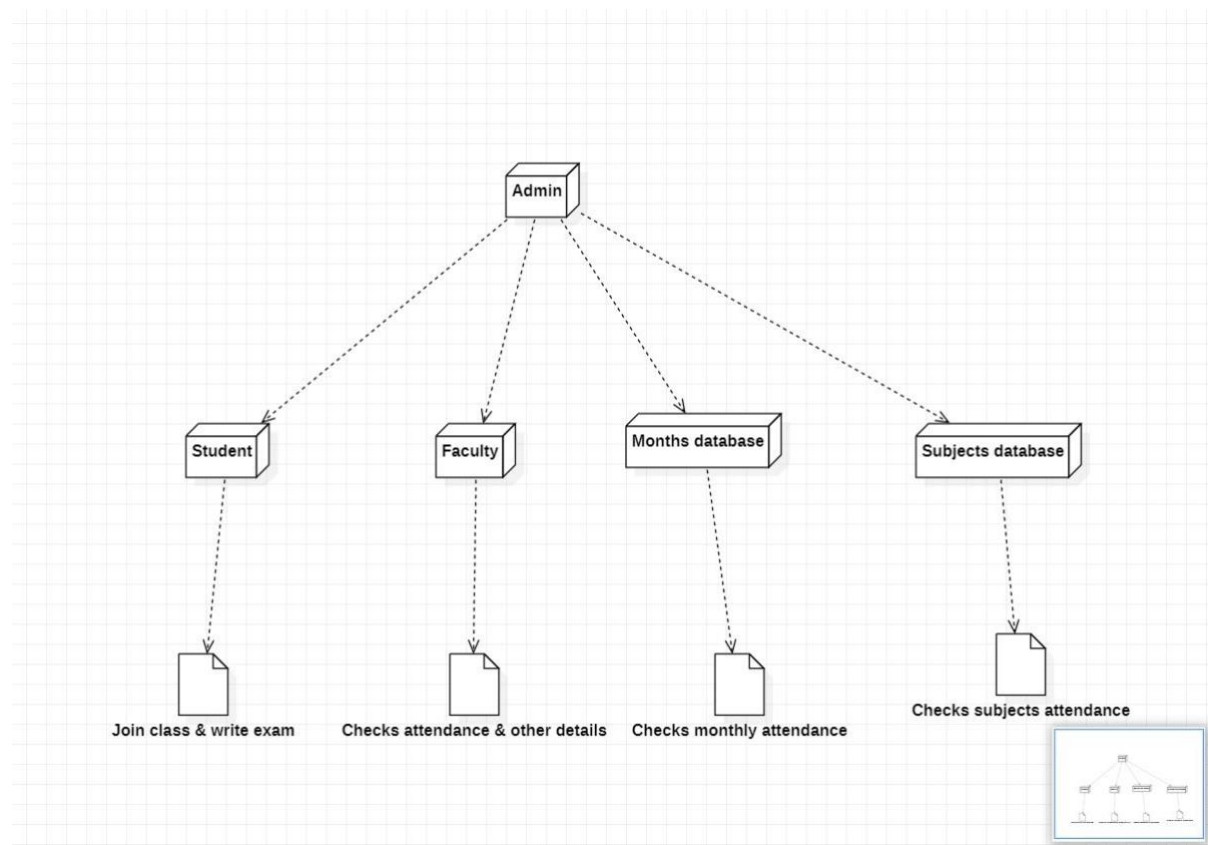
DDL & DML COMMANDS

Students Table:

```
SQL> create table students(rno char(10) constraint s1 primary key,sname varchar2(30),section varchar2(10),dob date,moblie number(10),address varchar2(30),gen varchar2(1),medicalproof varchar2(1));
Table created.
```

DDL-

DML-

```
SQL> insert into students values('&rno','&sname','&section','&dob','&mobile','&address','&gen','&medicalproof');
Enter value for rno: 21071A6745
Enter value for sname: Rangu vipin
Enter value for section: CSDS
Enter value for dob: 02-mar-2003
Enter value for mobile: 9834121615
Enter value for address: Kukatpally
Enter value for gen: M
Enter value for medicalproof: N
old   1: insert into students values('&rno','&sname','&section','&dob','&mobile','&address','&gen','&medicalproof')
new   1: insert into students values('21071A6745','Rangu vipin','CSDS','02-mar-2003','9834121615','Kukatpally','M','N')

1 row created.
```

Subject Table:

```
SQL> create table subject(subid varchar2(10),subname varchar2(30),fname varchar2(30),fid varchar2(5),deptname varchar2(5),primary key(subid));
Table created.
```

DDL-

```
SQL> /
Enter value for subid: A19PC1CS04
Enter value for subname: DBMS
Enter value for fname: Mr.R.Kranthi kumar
Enter value for fid: 16261
Enter value for deptname: CSD
old   1: insert into subject values('&subid','&subname','&fname','&fid','&deptname')
new   1: insert into subject values('A19PC1CS04','DBMS','Mr.R.Kranthi kumar','16261','CSD')

1 row created.
```

DM

Student_attendance Table-

```
SQL> create table student_attendence(rno char(10),march number(2),april number(2),may number(2),dbms number(2),dld number(2),daa number(2),foreign key(rno) references students(rno));
Table created.
```

DDL-

```
SQL> insert into student_attendance values('&rno',&march,&april,&may,&operating_systems,&DBMS,&Operational_Research);
Enter value for rno: 20071A3201
Enter value for march: 14
Enter value for april: 12
Enter value for may: 12
Enter value for operating_systems: 13
Enter value for dbms: 12
Enter value for operational_research: 13
old   1: insert into student_attendance values('&rno',&march,&april,&may,&operating_systems,&DBMS,&Operational_Research)
new   1: insert into student_attendance values('20071A3201',14,12,12,13,12,13)

1 row created.
```
DML-

Total_attendance Table-

```
SQL> create table total_attendence(subid varchar2(10),subname varchar2(30),march number(2),april number(2),may number(2) ,foreign key(subid) references subject(subid));
Table created.
```
DDL-

```
SQL> insert into total_attendence values('&subid','&subname',&march,&april,&may);
Enter value for subid: A19PC1CS04
Enter value for subname: DBMS
Enter value for march: 15
Enter value for april: 7
Enter value for may: 8
old   1: insert into total_attendence values('&subid','&subname',&march,&april,&may)
new   1: insert into total_attendence values('A19PC1CS04','DBMS',15,7,8)

1 row created.
```
DML-

QUERIES AND SCREENSHOTS

1.   List the students based on the ascending order of their address location

```
SQL> select sname,(address) from students order by address;

SNAME                        ADDRESS
---------------------------- ----------------------------
Yadlapati Sindhupriya        BanjaraHills
Harshavardhan                Film Nagar
P.Mohan                      Film nagar
Vuppala Sindhubhargavi       JubileeHills
Salikanti karthik            Kondapur
Rangu vipin                  Kukatpally
Raavi koushik                Kukatpally
Poonam Pawar                 Madhapur
Raavi Vishnupriya            Madhapur
Sarrabu Vyshnavi             Madhapur
Sanjitha                     Old City

11 rows selected.
```

2. List all the subject names along with the faculty teaching the subject

```
SQL> select subname,(fname) from subject;

SUBNAME                          FNAME
-------------------------------- -----------------------------
DBMS                             Mr.R.Kranthi kumar
Digitallogicdesign               Ms.K.Deepthi
 Designandanalysisofalgorithms Ms.Y.Bhanusree
```

3. Which departments do the subjects belong to?

```
SQL> select distinct(deptname) from subject;

DEPTN
-----
CSD
ECE
```

4. What is the average student attendance in all three of the months?

```
SQL> select avg(march) as mar,sum(april)/count(rno) as april,sum(may)/count(rno) as may from student_attendence;

      MAR      APRIL       MAY
---------- ---------- ---------
25.7272727         19 19.2727273
```

5. What is the average student attendance for each subject?

```
SQL> select avg(dbms) as dbms,avg(dld) as dld,avg(daa) as daa from student_attendence;

      DBMS        DLD       DAA
---------- ---------- ----------
21.3636364 21.8181818 20.8181818
```

6. Has any student attended all of the classes in all of the months? If yes, list the details.

```
SQL> select s.rno from student_attendence s where (s.march,s.april,s.may)=(select sum(march),sum(april),sum(may) from total_attendence);

no rows selected
```

7. Print the details of the students who have attendance above 75%.

```
SQL> select * from students where rno in(select s.rno from student_attendence s where(s.march+s.april+s.may)>=0.75*(select sum(march)+sum(april)+sum(may) from total_attendence));

RNO          SNAME                    SECTION   DOB        MOBLIE
----------   ----------------------   -------   --------   ----------
ADDRESS                          G M
------------------------------   - -
21071A6741 P.Mohan                     CSDS     04-APR-03 9878241612
Film nagar                     M N

21071A6748 Sarrabu Vyshnavi            CSDS     11-DEC-03 8801401132
Madhapur                       F Y

21071A6744 Raavi Vishnupriya           CSDS     16-MAR-02 8798416217
Madhapur                       F N


RNO          SNAME                    SECTION   DOB        MOBLIE
----------   ----------------------   -------   --------   ----------
ADDRESS                          G M
------------------------------   - -
21071A6747 Sanjitha                    CSDS     04-SEP-01 9030876111
Old City                       F N

21071A6701 Harshavardhan               CSDS     04-FEB-03 9391257132
Film Nagar                     M N
```

8. Print the details of the students who have attendance below 65%(or) detained.

```
SQL> select * from students where rno in(select s.rno from student_attendence s where(s.march+s.may+s.april)<=0.65*(select sum(march)+sum(april)+sum(may) from total_attendence));
RNO          SNAME                      SECTION   DOB        MOBLIE
----------   ------------------------   -------   --------   ----------
ADDRESS                            G M
--------------------------------   - -
21071A6742 Poonam Pawar                  CSDS     12-MAR-02 8978426121
Madhapur                         F N

21071A6763 Yadlapati Sindhupriya         CSDS     29-JUN-03 9666125348
BanjaraHills                     F N

21071A6743 Raavi koushik                 CSDS     18-MAY-03 7984816218
Kukatpally                       M N


RNO          SNAME                      SECTION   DOB        MOBLIE
----------   ------------------------   -------   --------   ----------
ADDRESS                            G M
--------------------------------   - -
21071A6745 Rangu vipin                   CSDS     02-MAR-03 9834121615
Kukatpally                       M N

21071A6762 Vuppala Sindhubhargavi        CSDS     28-NOV-04 8241361219
JubileeHills                     F N
```

9. print the list of student/s who attended maximum number of classes in each subject :

```
SQL> select a.rno from student_attendence a where a.dbms like(select max(dbms) from student_atter

RNO
----------
21071A6747
```

a.
DBMS
b. DLD

```
SQL> select a.rno from student_attendence a where a.dld like(select max(dld) from student_attendenc

RNO
----------
21071A6747
```

22

```
SQL> select a.rno from student_attendence a where a.daa like(select max(daa) from student_attenden

RNO
----------
21071A6747
```

c.
Design and Analysis of Algorthim

---

10. Print the student's attendance in ascending order.

```
SQL> select s.rno,(s.dbms+s.dld+s.daa) as total_attended from student_attendence s order by (s.dbms+s.dld+s.daa);

RNO        TOTAL_ATTENDED
---------- --------------
21071A6762             45
21071A6742             50
21071A6745             52
21071A6743             56
21071A6763             56
21071A6746             59
21071A6741             68
21071A6748             72
21071A6744             79
21071A6701             82
21071A6747             85

11 rows selected.
```

11. List the lateral entry students.

```
SQL> select * from students where rno like '220%';

no rows selected
```

12. Print the details of students with three words in their name.

```
SQL> select sname from students where regexp_count(sname,' ',1,'i')='2';

no rows selected
```

13. Who attended maximum number of classes among girls?

```
SQL> select a.rno,a.march+a.may+a.april as total from student_attendence a where(march+april+may)=(select max(march+april+may) from student_attendence where rno in(select s.rno from students s where gen='F'));
RNO        TOTAL
---------- ---------
21071A6747    85
```

14. Who attended maximum number of classes among boys?

```
SQL> select a.rno,a.march+a.may+a.april as total from student_attendence a where(march+april+may)=(select max(march+april+may) from student_attendence where rno in(select s.rno from students s where gen='M'));
RNO        TOTAL
---------- ---------
21071A6701    82
```

15. List the names of the students whose name start with S and end with I.

```
SQL> select sname,rno from students where sname like 'S%i';

SNAME                          RNO
------------------------------ ----------
Sarrabu Vyshnavi               21071A6748
```

CONCLUSION

The faculty coordinator's job is made easier by automating the process of attendance percentage computation and offering categories for various percentages.

We hoped to decrease the manual effort and time it takes the instructor to verify every time if a student has medical evidence or not, to encourage detention, and to pay condonation costs with the aid of this project.

This project is intended to meet all of the faculty's needs with regard to each topic and to monitor the student's regularity, all with the use of a single query. It also assists in informing parents about their child's attendance so that they are aware of what is going on.