



CLOUDS

Complete Institute Management Tool

Existing Scenario

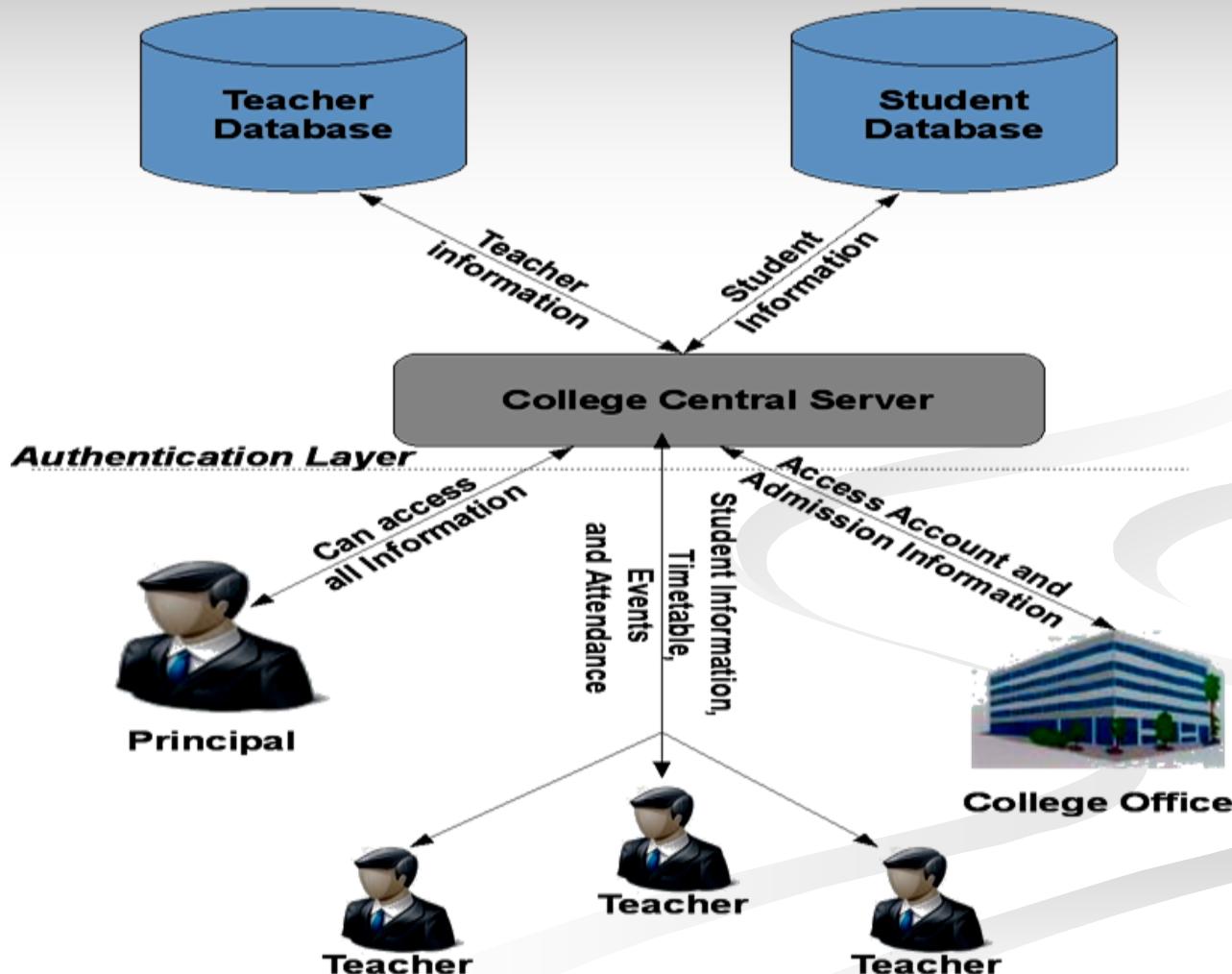
C
a
r
d

I
n
t
e
g
r
a
t
e
d

- Only college wide LAN infrastructure exists.
- Each department works separately and independently from all other.
- Student record are maintained in each department with relevant data for that section.
- General teaching staff does not have access to the student records.
- Most dreary procedures like timetable creation/attendance logging and checking are all done manually.

CMMS

Overall Project Architecture



Goals and Purpose

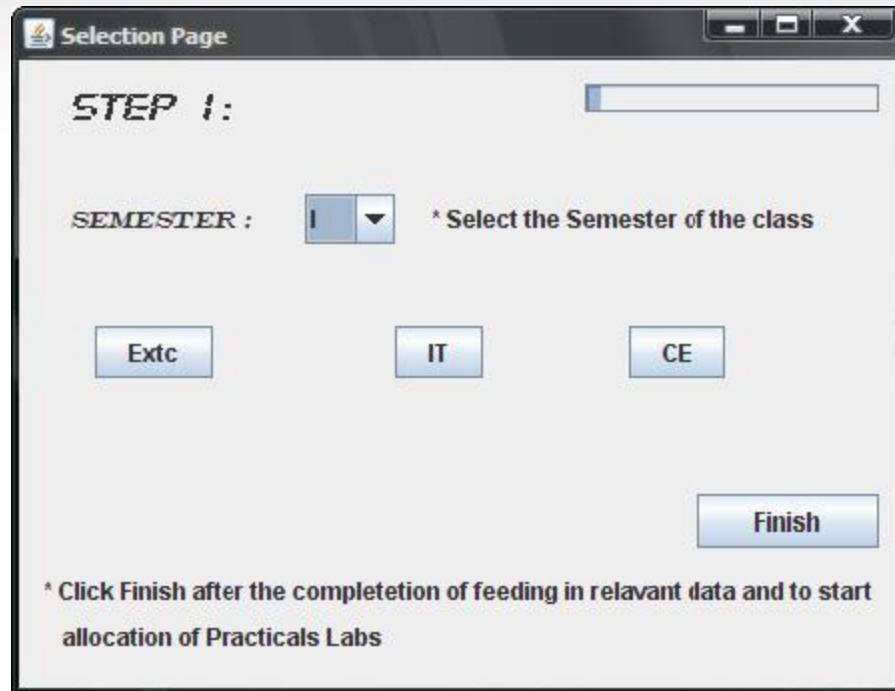
- To provide an umbrella system which logically links up all the college department
- Create a centralize database for each student which contains a holistic record of all his attributes .
- To implement a card based debit system for easy accounting and tabulation.
- Provide Multilevel login facility to the college administrator so that easy oversight various features /properties of the system can be observed and the modified/initiated.
- To introduce a variety of automated alternatives to the common task such as scheduling and record tracking /updating

Scheduler Module

- Automatic scheduling of Timetable for classes and teachers simultaneously.
- Autonomous selection of lecture slots and teacher simultaneously
- Timetable stored in the cen database which can be viewed by office and teachers.
- Automatic cross-correlation for teachers to avoid assignment clashes
- Dynamic Lab Assignment to fit varied practical schedule.
- Modulation of schedule on the basis of batch orientation

Allocation process uses the concept of random number generation in order to completely randomize the process without taking priorities into consideration. Allotment of the Practical Labs is followed with a the allotment of lecture timetables.

On the execution of the scheduler algorithm the following applet is initialized . As seen one can select the semester and the branch in order to enter the data fro the respective class.



Selection of the class and branch will open the following form wherein the subjects for the class are automatically populated .The clerk incharge feeds the data about the Practical Lab allotment and teacher incharge. Clicking the “Finish” will initiate the scheduling process.

 Year and Branch

STEP 2:

FEit, Semester : I

Subjects	Labs	Teacher Alloted	Pracs Duration
maths	No_Pracs		2 hours
mech	No_Pracs		2 hours
bee	No_Pracs		2 hours
physics	No_Pracs		2 hours
chemistry	No_Pracs		2 hours
cp	No_Pracs		2 hours

Store to database

After the data has been entered the button “Store in Database” triggers a SQL query to insert the data in the respective table in the database.

Tables

CE_Lab_1_t
CE_Lab_2
CE_Lab_2_t
CE_Lab_3
CE_Lab_3_t
Chemistry_Lab
Chemistry_Lab_t
EL_Lab_1
EL_Lab_1_t
EL_Lab_2
EL_Lab_2_t
Extc
Extc_Lab_1
Extc_Lab_1_t
Extc_Lab_2
Extc_Lab_2_t
Extc_Lab_3
Extc_Lab_3_t
FEce
FEce_t
FEce_track
FEextc
FEextc_t

FEce

subject	lab_allotted	teacher_incl
mathsC	CE_Lab_1	1
mechC	Mech_Lab	2
beeC	EL_Lab_1	3
physicsC	Physics_Lab	4
chemistryC	Chemistry_Lab	5
cpC	CE_Lab_2	6
*		

Record: 1 of 6 No Filter Search

Record: 1 of 5 No Filter Search

Database view

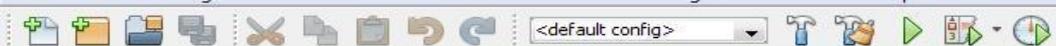
Tables

	1	2	3	4
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
*				

Prior to the actual allocation technique , various tracking tables that are used in the allocation process are set to the initial condition.

As seen here, the tables such as FEce_track , which keeps a track of the number of slots available for the lecture time (i.e 3 indicating three batches thus 3 batch slots available)

During the allotment process, the various aspects are kept into account like the database entries at every stage, deadlock reorganization and number of deadlocks that have been encountered .



Projects

Files Services

```
: Output - practime (run)
0    0
0    1
0    2
0    3
1

checkpoint stuff
1    0
1    1
1    2
1    3
1

checkpoint stuff
2    0
2    1
2    2
2    3
1

checkpoint stuff
3    0
3    1
3    2
3    3
1

checkpoint stuff
4    0
4    1
4    2
4    3
1

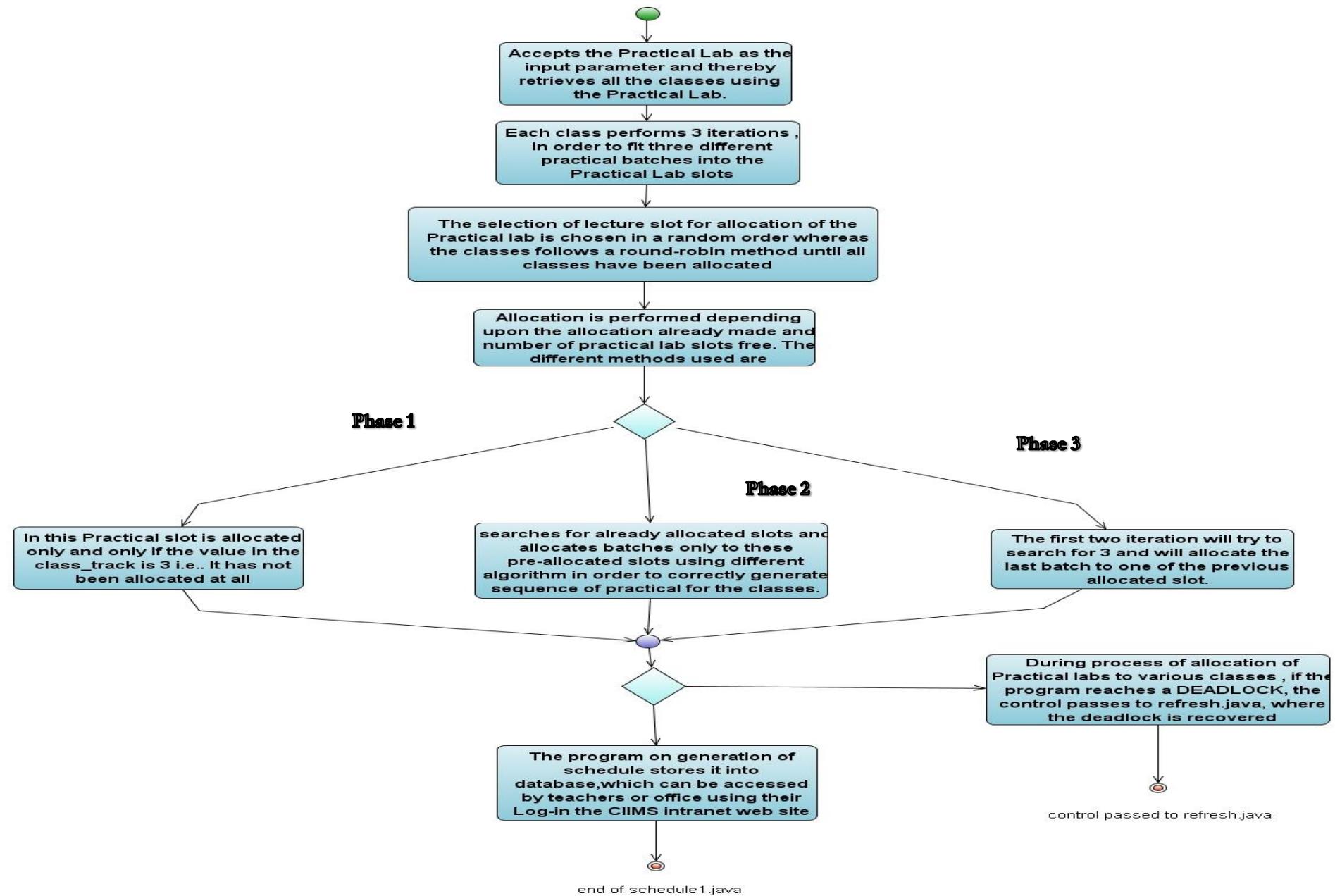
The number of Deadlocks occurred during execution of the program: 143
```

```
BUILD STOPPED (total time: 3 minutes 57 seconds)
```

To better understand the actual process of allocation , the process has been disintigrated into three main programs:

- 1> schedule1.java
- 2> refresh.java
- 3> exp.java

schedule1.java



refresh.java



This file is executed when schedule1.java reaches a deadlock or detects a deadlock

It stops the current execution of the schedule1.java and stores the current state and progress in temp variables and re-performs the allocation Practical Labs

After reaching complete execution of the refresh.java the control is passed back to schedule1.java to continue the execution of the file

control passed back to schedule1.java

Tables

IT_Lab_5_t
IT_Lab_6
IT_Lab_6_t
Mech_Lab
Mech_Lab_t
No_Pracs
Physics_Lab
Physics_Lab_t
SEce
SEce_t
SEextc
SEextc_t
SEit
SEit_t
TEce
TEce_t
TEextc
TEextc_t
TEit
TEit_t
Workshop
Workshop_t

The screenshot shows five Microsoft Access tables open simultaneously:

- CE_Lab_1_t:** Columns 1-4. Data: Row 1: free, free, free, free; Row 2: FEce, FEit, FEce, free; Row 3: FEextc, FEce, FEextc, free; Row 4: free, free, FEit, free; Row 5: free, FEit, FEextc, free.
- Chemistry_Lab_t:** Columns 1-4. Data: Row 1: FEit, free, free, free; Row 2: free, FEit, FEextc, free; Row 3: free, FEce, free, free; Row 4: FEextc, FEce, free, FEit; Row 5: free, free, FEextc, FEce.
- EL_Lab_1_t:** Columns 1-4. Data: Row 1: free, free, FEce, FEextc; Row 2: FEce, free, FEextc, free; Row 3: FEextc, free, free, FEit; Row 4: free, free, FEit, FEit; Row 5: free, free, free, FEce.
- CE_Lab_2_t:** Columns 1-4. Data: Row 1: FEit, free, free, free; Row 2: FEce, free, FEce, free; Row 3: FEextc, free, FEextc, free; Row 4: FEextc, FEce, FEit, free; Row 5: free, FEit, free, free.
- Physics_Lab_t:** Columns 1-4. Data: Row 1: FEit, free, FEce, FEextc; Row 2: free, free, FEextc, free; Row 3: free, free, free, FEit; Row 4: free, FEce, free, free; Row 5: free, FEit, FEextc, FEce.

After the completion of the allotment, the tables in the databases would be populated with the generated timetables. As shown in the above snapshot , the accuracy and the precision of the program can be gauged. The following aspects can be noted:

- Initially only one Practical lab is allocated for that class to spread the load throughout the week.
- Any lecture that has been allocated for a particular Lab , will automatically be allocated for other 2 Practical Labs also keeping all the 3 batches scheduled for different Practical Labs.

Tables

EL_Lab_1_t
EL_Lab_2
EL_Lab_2_t
Extc
Extc_Lab_1
Extc_Lab_1_t
Extc_Lab_2
Extc_Lab_2_t
Extc_Lab_3
Extc_Lab_3_t
FEce
FEce_t
FEce_track
FEextc
FEextc_t
FEextc_track
FEit
FEit_t

FEce_t

1	2	3	4
free	free	Mech_Lab,Physics_Lab,EL_Lab_1	free
EL_Lab_1,CE_Lab_1,CE_Lab_2	free	Mech_Lab,CE_Lab_1,CE_Lab_2	free
free	Mech_Lab,Chemistry_Lab,CE_Lab_1	free	free
free	Physics_Lab,Chemistry_Lab,CE_Lab_2	free	free
free	free	free	Physics_Lab,EL_Lab_1,Chemistry
*			

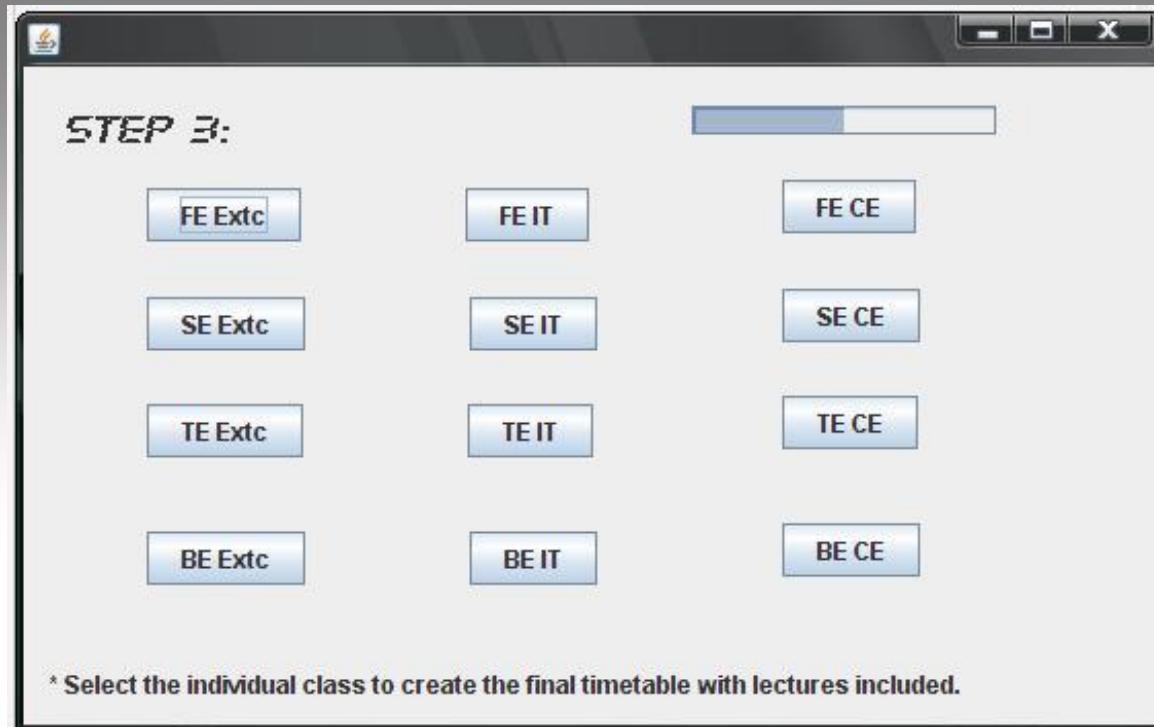
Record: 1 of 5 No Filter Search

FEce_track

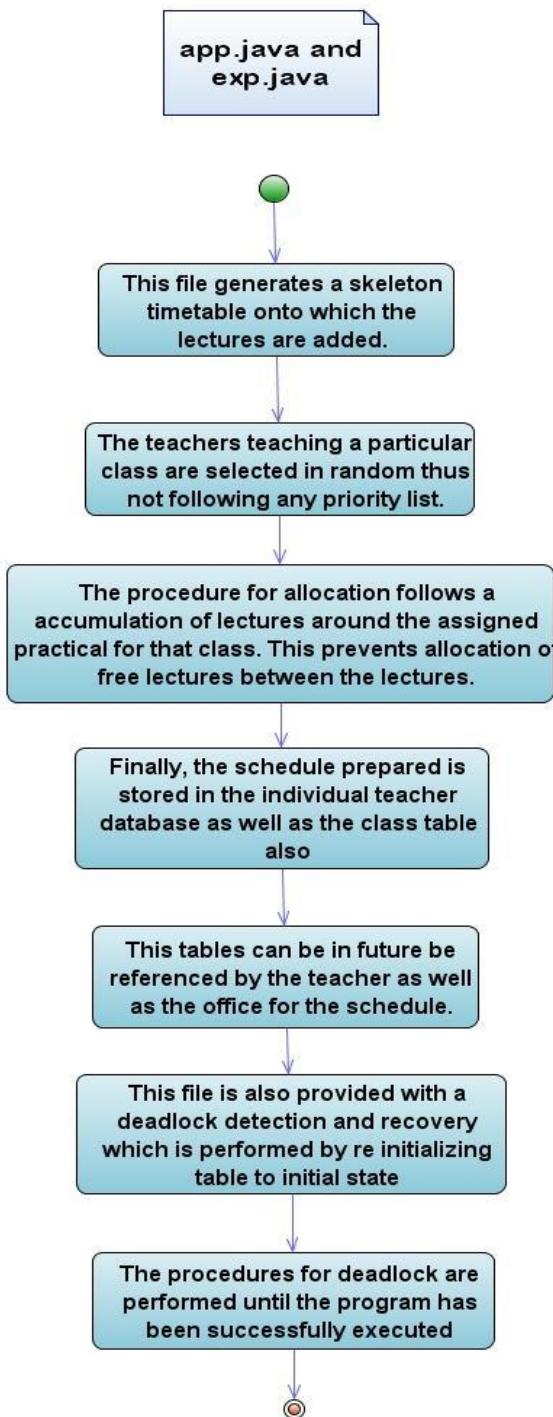
1	2	3	4
3	3	0	3
0	3	0	3
3	0	3	3
3	0	3	3
3	3	3	0
*			

Record: 1 of 5 No Filter Search

Snapshot focuses on the individual timetable that has been generated for the class and also the values in the tracking tables. It can be noted that the tracking values in the table have been reduced to 0 wherever the practicals has been allocated.



This is the second applet that focuses on assigning lectures to the classes after the practical labs have been allocated. On selecting individual classes , a new timetable of that class is generated which uses the timetable generated by the previous applet(Practical Lab Applet) as input.



Tables

adda
aj
allocation
BEcce
BEextc
BEit
chac
FEcce
FEextc
FEit
kun
nj
SEcce
SEextc
SEit
TEcce
TEextc
TEit

adda

1	2	3	4	5	6	7	8
free	FEit	FEextc	free	free	free	FEce	
free	free	free	FEit	FEce	free	free	
free	free	free	free	FEextc	FEce	free	
free	FEit	free	free	FEce	free	free	
free	FEit	free	FEce	FEextc	free	free	
*							

FEce

1	2	3	4	5	6	7	8
aj	chac	pracs	pracs	nj	kun	adda	free
pracs	pracs	chac	aj	adda	nj	kun	free
free	nj	kun	aj	chac	adda	pracs	pracs
free	nj	kun	chac	adda	aj	pracs	pracs
free	chac	aj	adda	nj	kun	pracs	pracs
*							

FEextc

1	2	3	4	5	6	7	8
nj	kun	adda	chac	pracs	pracs	aj	free
chac	aj	pracs	pracs	kun	nj	adda	free
pracs	pracs	aj	nj	adda	kun	chac	free
chac	aj	pracs	pracs	nj	kun	adda	free
pracs	pracs	chac	kun	adda	aj	nj	free
*							

Record: 14 < 1 of 5 > No Filter Search

On selecting the class, the program allocated the lectures as shown in the above snapshot. The lectures showing “prac” denotes Practical Lab. All other keywords in the above table denote the name of professors. Apart from classes , professors also have their own table which indicates the class he/she has been scheduled to conduct(table no1 in the above snapshot).

The project although indicates less number of professor tables and classes, but can work on variable number of entities, provided appropriate modifications are made.

Teacher Module

- Student Attendance Management
- Student Academics Progress
- Graphical Reporting
 - Bar Charts
 - Pie Charts
- Time Table Viewing
 - Personal Time-Table
 - Class Time-Table
- Mailing
 - Individual mailing
 - Mass Student Mailing

Office Module

C
a
r
d

- Card Transactions
 - Debit
 - Credit

I
n
t
e
g
r
a
t
e
d

- Transaction Report
- Student Management
 - Add Student
 - View/Edit Student
- View Timetable
 - Class Time-Table

Institute Management

CHIMS

Library Module

- Book Management
 - Add Book
 - Edit / View Book
- Book Search
 - Search by Category
 - Search by Book ID
- Library Management
 - Issue Book
 - Return Book and Automatic Fine Deduction

- Add Item
- Remove Item

- Viewing Order
- Dispatch Order
- Process Student Order

Principal Module

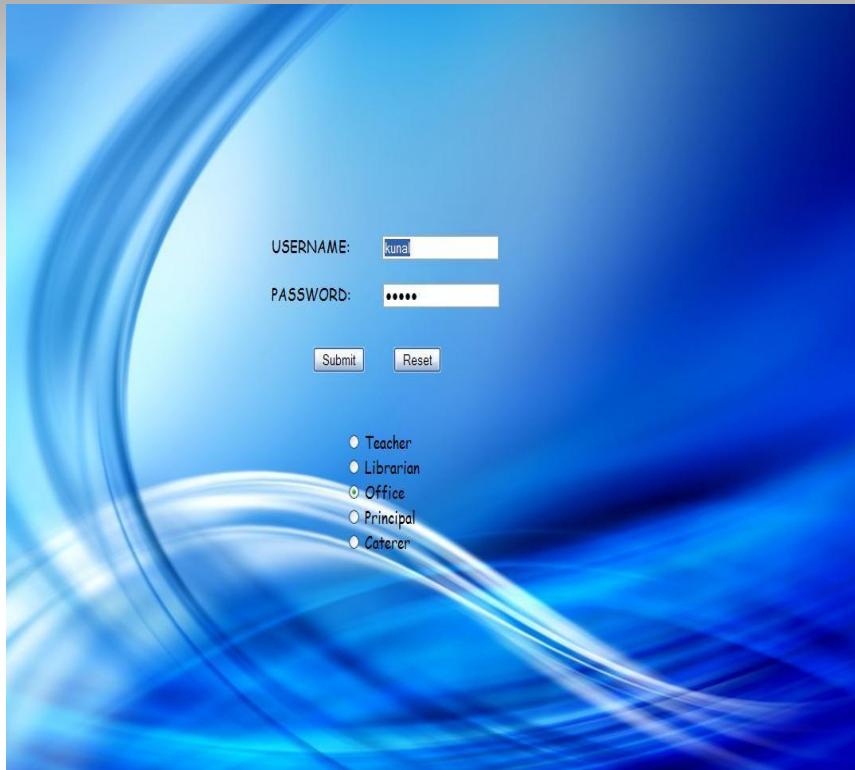
- Teacher Management
 - Add Teacher
 - Edit/ View Teacher

- Student Management
 - View Student Information
 - Promote Class
 - Rusticate Student

Common Features

- Use of Forums for inter-departmental communication.
- Online order feature for canteen.
- Event Notification feature on every Login Page.
- Mass mailing for multiple student reports.
- Picture Upload option for various logins.
- Daily common message Board.

More Snapshots of the Projects



A screenshot of a login interface. The background is a blue-toned abstract design with flowing lines. At the top, there are two input fields: 'USERNAME:' containing 'kuma' and 'PASSWORD:' containing '*****'. Below these are two buttons, 'Submit' and 'Reset'. Further down, there is a group of five radio buttons labeled 'Teacher', 'Librarian', 'Office', 'Principal', and 'Caterer', with 'Office' being the selected option.



A screenshot of a web browser window titled 'Todays events - Mozilla Firefox' showing the URL 'http://localhost:8080/OMG/tech/checker.jsp'. The page displays the message 'Todays Date: 14 Apr 2009'. Below this is a table with three columns: 'Event', 'Date', and 'Do Not Notify'. A single row in the table shows 'No Change' in the 'Event' column and a checked checkbox in the 'Do Not Notify' column. At the bottom right of the table is a 'Done' button. The status bar at the bottom of the browser window shows 'One active download (39 minutes remaining)'.

Welcome to CIIMS!

[HOME](#) [LOGOUT](#)

CIIMS

[View Forum](#)
[Send E~Mail](#)
[Attendance](#)
[Attendance](#)
[Attendance](#)
[Student Info](#)
[Student Marks](#)
[Edit Stud Marks](#)

Daily site news
C.I.I.M.S is a great system due to be completed soon

[More Information](#) 04/14/2009



Today is a new day. Visit [CIIMS](#)

DD-MMM-YYYY [Create Event](#)

Welcome adda

Upload Photo

TIC TAC TOE

Thought For The Day:
I have never heard anything about the resolutions of the apostles, but a good deal about their acts. -Horace Mann

[HOME](#) [LOGOUT](#)

Choose Lecture Number: 15 ▾

Name	Roll No	Present/Absent	Current Attendance
Abhishek Gupta	105IT01	<input type="checkbox"/>	Attended 4
Kunal Ghogale	105IT15	<input checked="" type="checkbox"/>	Attended 4
Niranjan Kotwal	105IT29	<input type="checkbox"/>	Attended 4
Pawan Kumar Adda	105IT44	<input type="checkbox"/>	Attended 4
		Check All UnCheck All	

Date Of Lecture: 23 Apr 2009


Today: 15-04-09

LOGOUT

Hello adda. You had requested details of Abhishek Gupta

Student name: Abhishek Gupta			Semester student is in: 8			Student rollno: 105IT01	
Marks in subject 1:	Marks in subject 2:	Marks in subject 3:	Book 1 issued:	Issue date of book 1:	Book 2 issued:	Issue date of book 2:	Balance right now:
578	69	856	Mathematics V	Fri Mar 27 13:12:08 IST 2009	Mathematics V	Sun Mar 29 03:19:53 IST 2009	1531

HOME **LOGOUT**

Hello pawan

Student name: Niranjan Kotwal	Semester student is joining into: 1	Student rollno: 105IT29	Student picture: 
Semester 1	Marks in subject 1: 56	Marks in subject 2: 60	Marks in subject 3: 80
Initial available balance: 100	Add data	Reset	

Welcome to CIIMS!

[HOME](#) [LOGOUT](#)

CIIMS

[View Forum](#)
[Send E~Mail](#)
[Attendance](#)
[Attendance](#)
[Attendance](#)
[Student Info](#)
[Student Marks](#)
[Edit Stud Marks](#)

Daily site news
C.I.I.M.S is a great system due to be completed soon

[More Information](#) 04/14/2009



Today is a new day. Visit [CIIMS](#)

DD-MMM-YYYY [Create Event](#)

Welcome adda

Upload Photo

TIC TAC TOE

Thought For The Day:
I have never heard anything about the resolutions of the apostles, but a good deal about their acts. -Horace Mann

[HOME](#) [LOGOUT](#)

Choose Lecture Number: 15 ▾

Name	Roll No	Present/Absent	Current Attendance
Abhishek Gupta	105IT01	<input type="checkbox"/>	Attended 4
Kunal Ghogale	105IT15	<input checked="" type="checkbox"/>	Attended 4
Niranjan Kotwal	105IT29	<input type="checkbox"/>	Attended 4
Pawan Kumar Adda	105IT44	<input type="checkbox"/>	Attended 4
		Check All UnCheck All	

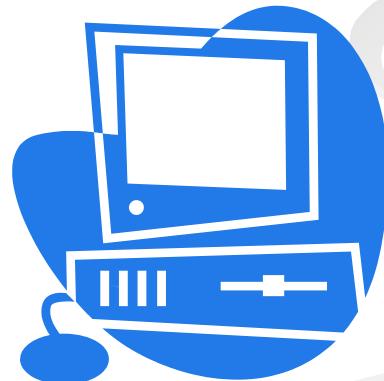
Date Of Lecture: 23 Apr 2009


Today: 15-04-09

C
a
r
d

I
n
t
e
g
r
a
t
e
d

Thank You



Institute Management

CIIMS