

TCMS

(Tables & Charts Management System)

Database Management System

Group1

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Introduction

The tally sheets are uploaded into a system then extract all the data from it and make required calculations using those data to automatically generate meaningful tables and graphs as per user requirements.

Functional Requirements

1. Classroom requirement summary based on class size, total slots per day, and course sections offered:

For a given range of class size (class size = number of students enrolled in a section), a given number of courses offered (counted in terms of sections) in a semester, how many classrooms would be needed if each day's schedule was divided into six slots? Seven slots?

Generate pie-charts showing percentage distribution of the class rooms per class size range.

2. Comparison of number sections offered across schools for a selection of class sizes w.r.t each other as well as the total number of sections throughout the entire university in a given semester.

3. Resource usage summary from a comparison of average enrollment per course and average capacity per room.

4. Available resources summary based on capacity of all the different categories of rooms in the university and the number of such rooms with a given capacity to hold a number of students.

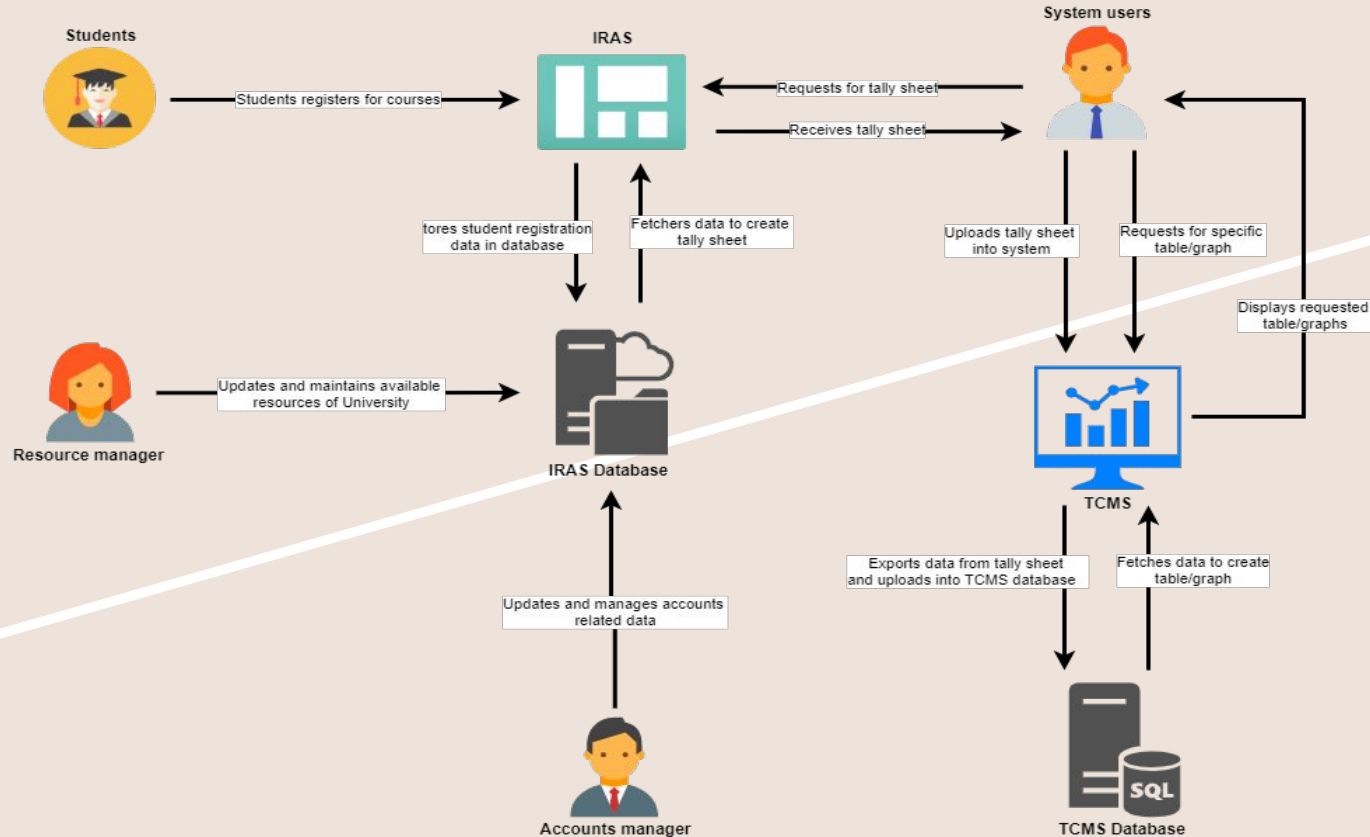
5. Comparative analysis of number of classrooms available per classroom size (i.e. capacity to hold a number of students) and number of rooms that are actually required.

6. Breakdown of the number of courses (sections) offered in each school w.r.t. number of students enrolled in them, starting from 1 and going up to the largest number of students enrolled, with an increment of 1.

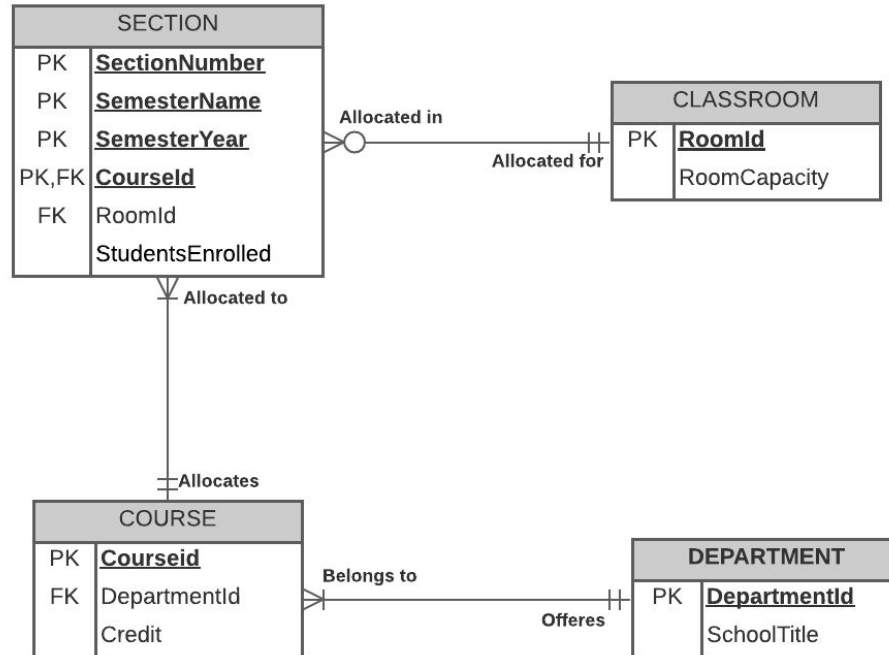
7. Comparative analysis of the revenue generated by each school each semester as well as the percentage change in the overall total revenue of the university each semester.

8. Comparative analysis of the revenue generated by each department in SETS, also w.r.t. that of the school each semester and the percentage change in the revenues of each department as well as the overall total revenue of the school.

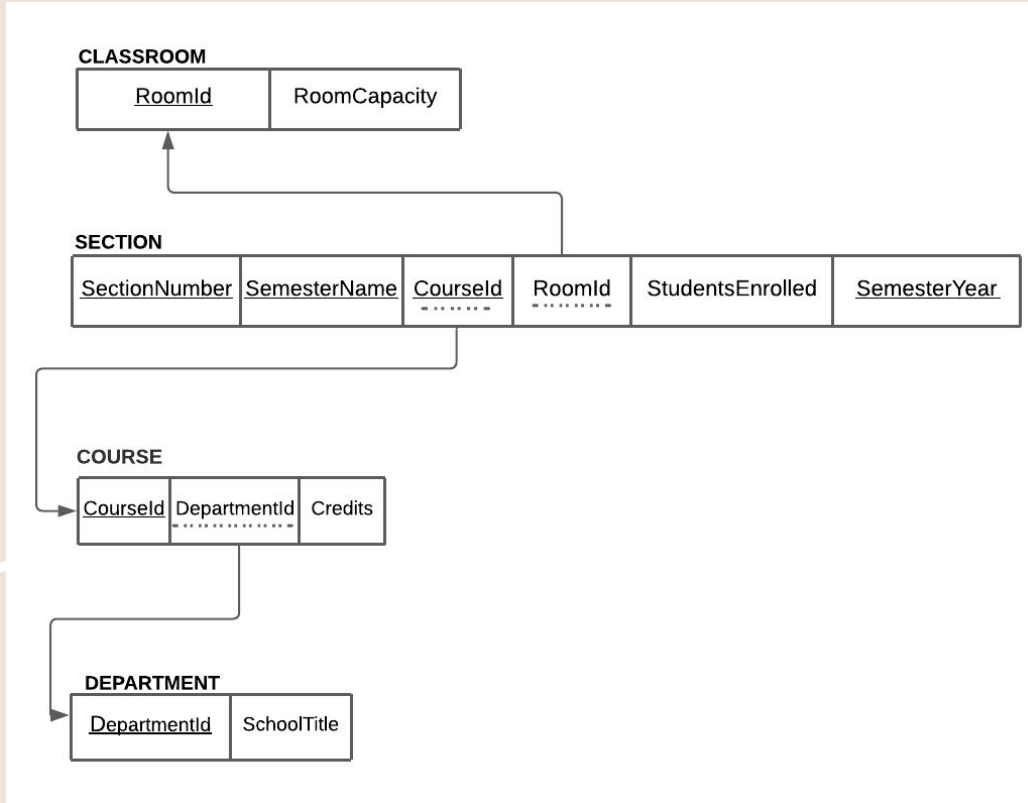
Rich Picture



EERD



Relationship Schema



Normalization

1NF:


<u>a1</u>	<u>c1</u>	c2	d1	s1	<u>n1</u>	<u>n2</u>	r1	r2	a2
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2NF: (Already in 2NF)

3NF:

<u>a1</u>	<u>n1</u>	<u>n2</u>	<u>c1</u>	<u>r1</u>	a2
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<u>r1</u>	r2
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BCNF: All relation are already in BCNF

Classroom Requirement

SELECT SEMESTER 1st: Spring ▾
SELECT SEMESTER 2nd: Summer ▾
SELECT SEMESTER YEAR 1st: 2010 ▾
SELECT SEMESTER YEAR 2nd: 2010 ▾

Classroom Requirement

CLASS SIZE	SPRING 2010			SUMMER 2010		
	SECTIONS	CLASS ROOM 6	CLASS ROOM 7	SECTIONS	CLASS ROOM 6	CLASS ROOM 7
0-10	8	0.67	0.57	5	0.42	0.36
11-20	47	3.92	3.36	25	2.08	1.79
21-30	50	4.17	3.57	24	2	1.71
31-35	74	6.17	5.29	32	2.67	2.29
36-40	49	4.08	3.5	18	1.5	1.29
41-50	80	6.67	5.71	43	3.58	3.07
51-55	0	0	0	0	0	0
56-60	47	3.92	3.36	23	1.92	1.64
TOTAL	355	29.58	25.36	170	14.17	12.14

Course Enrollment

Course Enrolment

SELECT SEMESTER 1st:

SELECT SEMESTER 2nd:

SPRING						SUMMER					
ENROLMENT	SBE	SELS	SETS	SLASS	TOTAL	ENROLMENT	SBE	SELS	SETS	SLASS	TOTAL
0-10	11	22	15	52	100	0-10	9	1	7	1	18
11-20	24	5	18	18	65	11-20	9	1	7	1	18
21-30	22	5	36	44	107	21-30	9	1	7	1	18
31-35	8	4	13	6	31	31-35	9	1	7	1	18
36-40	11	3	23	3	40	36-40	9	1	7	1	18
41-50	13	5	18	4	40	41-50	9	1	7	1	18
51-55	3	0	0	0	3	51-55	9	1	7	1	18
56-60	12	0	0	0	12	56-60	9	1	7	1	18

Usage of Resources

SELECT SEMESTER 1st:

SELECT SEMESTER 2nd:

SCHOOL	TOTAL ENROLLED	AVG ENROLL	AVG ROOM	DIFFERENCE	UNUSED %
SBE	9127	31.47	47.23	15.76	33.36
SELS	2096	22.3	39.89	17.6	44.11
SETS	8913	27.77	43.15	15.38	35.65
SLASS	7135	22.58	39.19	16.61	42.38
SPRING	27271	104.12	169.45	65.34	155.49
SBE	4311	24.78	46.86	22.09	47.13
SELS	779	18.55	44.19	25.64	58.03
SETS	3024	19.26	41.18	21.92	53.23
SLASS	3966	22.16	39.76	17.6	44.27
SUMMER	12080	84.74	171.99	87.25	202.66

	SPRING	SUMMER
Average of ROOM CAPACITY	169.45	171.99
Average of ENROLLED	104.12	84.74
Average of Unused Space	65.34	87.25
Unused Percent	155.49	202.66

IUB Available Resources

IUB Available Resources		
CLASS SIZE	IUB RESOURCE	CAPACITY
15	12	180
20	27	540
25	4	100
30	46	1380
35	74	2590
40	43	1720
45	39	1755
50	2	100
60	47	2820
65	40	2600
Total	334	13785
Total Capacity with 6 slot 2 days		165420

Availability and Course Offering Comparison

CLASS SIZE	IUB RESOURCES	SPRING 2010	DIFFERENCE	SUMMER 2010	DIFFERENCE
15	12	1.08	10.92	0.08	11.92
20	27	2.92	24.08	2	25
25	4	0.33	3.67	0.25	3.75
30	46	3.83	42.17	1.75	44.25
35	74	6.17	67.83	2.67	71.33
40	43	4.08	38.92	1.5	41.5
45	39	3.25	35.75	1.58	37.42
50	2	3.42	-1.42	2	0
60	47	3.92	43.08	1.92	45.08
65	40	4.17	35.83	2.17	37.83
Total	334	33.17	300.83	15.92	318.08

THANK you