BDM

CIA-4

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Submitted to
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Education Institute

This a education institution represents the stakeholders of a college system, including students, faculty, courses, departments, classrooms, staff, alumni, library, fees, and attendance. The college system works together to provide high-quality education to students and prepare them for successful careers. Students enroll in courses offered by faculty members, and the courses are organized into departments. Classrooms are managed by staff, and the college has a library containing relevant materials. Fees are collected to cover expenses, and attendance is tracked. Alumni are former students who have graduated from the institution. The college system works together to provide high-quality education to students and prepare them for successful careers.

OBJECTIVES

This MySQL database is designed to support the educational institution's management system, which includes various stakeholders such as students, faculty members, courses, departments, classrooms, staff, alumni, library, fees, and attendance. The college system aims to provide high-quality education to students and prepare them for successful careers. Students enroll in courses offered by faculty members, and these courses are organized into departments. Classrooms are managed by staff members, and the college has a well-equipped library containing relevant materials. Fees are collected to cover expenses, and attendance is tracked to ensure student progress. Alumni are former students who have graduated from the institution and can serve as a valuable resource for current students. The institution's success is attributed to the collaboration between these stakeholders and their dedication to achieving the college's goals. This database will aid in managing the vast amount of data required for effective decision-making, improving the college system's overall performance.

STUDENT TABLE

student_id	student_name	student_date_of_birth	student_gender	student_nationa	courseID	departme
1001	Aryan Sharma	01-01-2000	Male	Indian	101	1101
1002	Neha Singh	02-02-2001	Female	Indian	102	1102
1003	Rahul Desai	03-03-2002	Male	Indian	101	1103
1004	Priya Patel	04-04-2001	Female	Indian	102	1102
1005	Karan Gupta	05-05-2000	Male	Indian	103	1101
1006	Anjali Shah	06-06-1999	Female	Indian	104	1102
1007	Amit Patel	07-07-1997	Male	Indian	101	1101
1008	Divya Mishra	08-08-1999	Female	Indian	102	1103
1009	Rohan Kumar	09-09-1998	Male	Indian	104	1103
1010	Sonia Choudha	10-10-2000	Female	Indian	105	1101

STUDENT ADDRESS TABLE

student_id	door_no	street	city	state	pin_code
1001	123	Main St	Mumbai	Maharasht	400001
1002	456	2nd Ave	Delhi	Delhi	110001
1003	789	3rd St	Chennai	Tamil Nad	600001
1004	101	4th Ave	Kolkata	West Beng	700001
1005	202	5th St	Bengaluru	Karnataka	560001
1006	303	6th Ave	Hyderabad	Telangana	500001
1007	404	7th St	Pune	Maharasht	411001
1008	505	8th Ave	Jaipur	Rajasthan	302001
1009	606	9th St	Lucknow	Uttar Prad	226001
1010	707	10th Ave	Ahmedaba	Gujarat	380001

FACULTY TABLE

FacultyID	FacultyName	DepartmentID
1	Dr. Ravi Kumar	1101
2	Prof. Sneha Sharma	1102
3	Dr. Sameer Desai	1101
4	Prof. Radha Patel	1103
5	Dr. Ajay Gupta	1103
6	Prof. Meera Shah	1103
7	Dr. Anil Patel	1101
8	Prof. Smita Mishra	1102
9	Dr. Vikas Kumar	1102
10	Prof. Priya Choudha	1103

FACULTY ADDRESS TABLE

FacultyID	door_no	street	city	state	PinCode
1	233	Main St	Mumbai	Maharasht	732768
2	44/2	Lalbagh Rc	Bengaluru	Karnataka	560027
3	15	Park St	Kolkata	West Beng	700016
4	7A/23	Pusa Rd	New Delhi	Delhi	110005
5	32	Model Tov	Ludhiana	Punjab	141002
6	11	Gandhi Rd	Chennai	Tamil Nad	600006
7	Feb-41	Rajaji Naga	Bengaluru	Karnataka	560010
8	24-Jan	Shivaji Rd	Pune	Maharasht	411005
9	8	Shalimar B	New Delhi	Delhi	110088
10	17	MG Rd	Ernakulam	Kerala	682011

ALUMNI TABLE

AlumniID	AlumniName	CourseID	DepartmentID
10011	Sneha Gupta	101	1101
10012	Rajesh Kumar	104	1101
10013	Riya Singh	105	1101
10014	Ankit Patel	102	1102
10015	Karan Shah	103	1103

ALUMNI ADDRESS TABLE

AlumniID	door_no	street	city	state	PinCode
10011	123	Main St	Mumbai	Maharashtra	456787
10012	456	Elm St	Delhi	Delhi	110011
10013	789	Oak St	Ahmedabad	Gujarat	380015
10014	987	Maple St	Bangalore	Karnataka	560001
10015	654	Pine St	Chennai	Tamil Nadu	600001

STAFF TABLE

StaffID	StaffName	DepartmentID
211	Rajesh Kumar	1101
212	Shilpa Gupta	1102
213	Amit Singh	1101
214	Sarika Sharma	1103
215	Sanjay Patel	1102

STAFF ADDRESS TABLE

StaffID	door_no	street	city	state	PinCode
211	123	Main St	Mumbai	Maharashtra	400001
212	456	Elm St	Delhi	Delhi	110001
213	789	Oak St	Ahmedabad	Gujarat	380001
214	987	Maple St	Bangalore	Karnataka	560001
215	654	Pine St	Chennai	Tamil Nadu	600001

COLLEGE TABLE

CollegeID	CollegeName	CollegeAddress	CollegeWebsite	
601	SS Institute Pune	Lavsa, Pune, Maharashtra	www.ssi.ac.in	

COURSE TABLE

CourseID	CourseName	CourseDesc	CourseDuration	Department
101	MBA	Master of	2	1101
102	MCA	Master of	2	1102
103	LLB	Bachelor o	5	1103
104	BCOM	Bachelor o	3	1101
105	BBA	Bachelor o	3	1101

DEPARTMENT TABLE

Department	Department	HeadID
1101	Departmen	1
1102	Departmen	2
1103	Departmen	3

FEE TABLE

FeesID	student_id	Amount	DatePaid
1010	1015	90000	17-04-2023
1111	1014	250000	18-04-2023
1122	1009	600000	04-04-2023
1133	1017	400000	20-04-2023
1142	1013	300000	19-04-2023
1187	1060	250000	16-05-2023
1244	1003	500000	01-04-2023
1245	1021	500000	21-04-2023
1246	1022	750000	22-04-2023
1247	1023	100000	23-04-2023
1248	1024	600000	24-04-2023
1249	1025	800000	25-04-2023
1250	1026	900000	26-04-2023
1251	1027	120000	27-04-2023
1252	1028	450000	28-04-2023
1253	1029	550000	29-04-2023
1254	1030	650000	30-04-2023
1255	1031	400000	01-05-2023

LIBRARY TABLE

LibraryID	LibraryName	LibraryLoc
6	National Library of India	Managem
7	Indira Gandhi National Centre for the Arts	Law Block

PHONE TABLE

id	student_id	FacultyID	StaffID	AlumniID	phonenum	phonenumber_2
3311	1001	NULL	NULL	NULL	+91 98765	+91 1234567890
3312	1002	NULL	NULL	NULL	+91 87654	+91 9876543210
3313	1003	NULL	NULL	NULL	+91 76543	+91 8765432109
3314	1004	NULL	NULL	NULL	+91 65432	+91 7654321098
3315	1005	NULL	NULL	NULL	+91 54321	+91 6543210987
3316	1006	NULL	NULL	NULL	+91 43210	+91 5432109876
3317	1007	NULL	NULL	NULL	+91 32109	+91 4321098765
3318	1008	NULL	NULL	NULL	+91 21098	+91 3210987654
3319	1009	NULL	NULL	NULL	+91 10987	+91 2109876543
3320	1010	NULL	NULL	NULL	+91 09876	+91 1098765432
3321	1011	NULL	NULL	NULL	+91 98765	+91 0987654321
3322	1012	NULL	NULL	NULL	+91 87654	+91 9876543211
3323	1013	NULL	NULL	NULL	+91 76543	+91 8765432110
3324	1014	NULL	NULL	NULL	+91 65432	+91 7654321099
3325	1015	NULL	NULL	NULL	+91 54321	+91 6543210988
3326	1016	NULL	NULL	NULL	+91 43210	+91 5432109877
3327	1017	NULL	NULL	NULL	+91 32109	+91 4321098766
3328	1018	NULL	NULL	NULL	+91 21098	+91 3210987655
3329	1019	NULL	NULL	NULL	+91 10987	+91 2109876544
3330	1020	NULL	NULL	NULL	+91 09876	+91 1098765433

EMAIL TABLE

id	student_id	FacultyID	StaffID	AlumniID	emailaddr	emailaddress_2	
4452	1001	NULL	NULL	NULL	aryanshar	aryansharma3@example.com	
4453	1002	NULL	NULL	NULL	nehasingh	nehasingh3@example.com	
4454	1003	NULL	NULL	NULL	rahuldesai	rahuldesai3@example.com	
4455	1004	NULL	NULL	NULL	priyapatel	priyapatel3@example.com	
4456	1005	NULL	NULL	NULL	karangupta	karangupta3@example.com	
4457	1006	NULL	NULL	NULL	anjalishah	anjalishah3@example.com	
4458	1007	NULL	NULL	NULL	amitpatel	amitpatel3@example.com	
4459	1008	NULL	NULL	NULL	divyamishr	divyamishra3@example.com	
4460	1009	NULL	NULL	NULL	rohankuma	rohankumar3@example.com	
4461	1010	NULL	NULL	NULL	soniachou	soniachoudhary3@example.com	

PROBLEM STATEMENT:

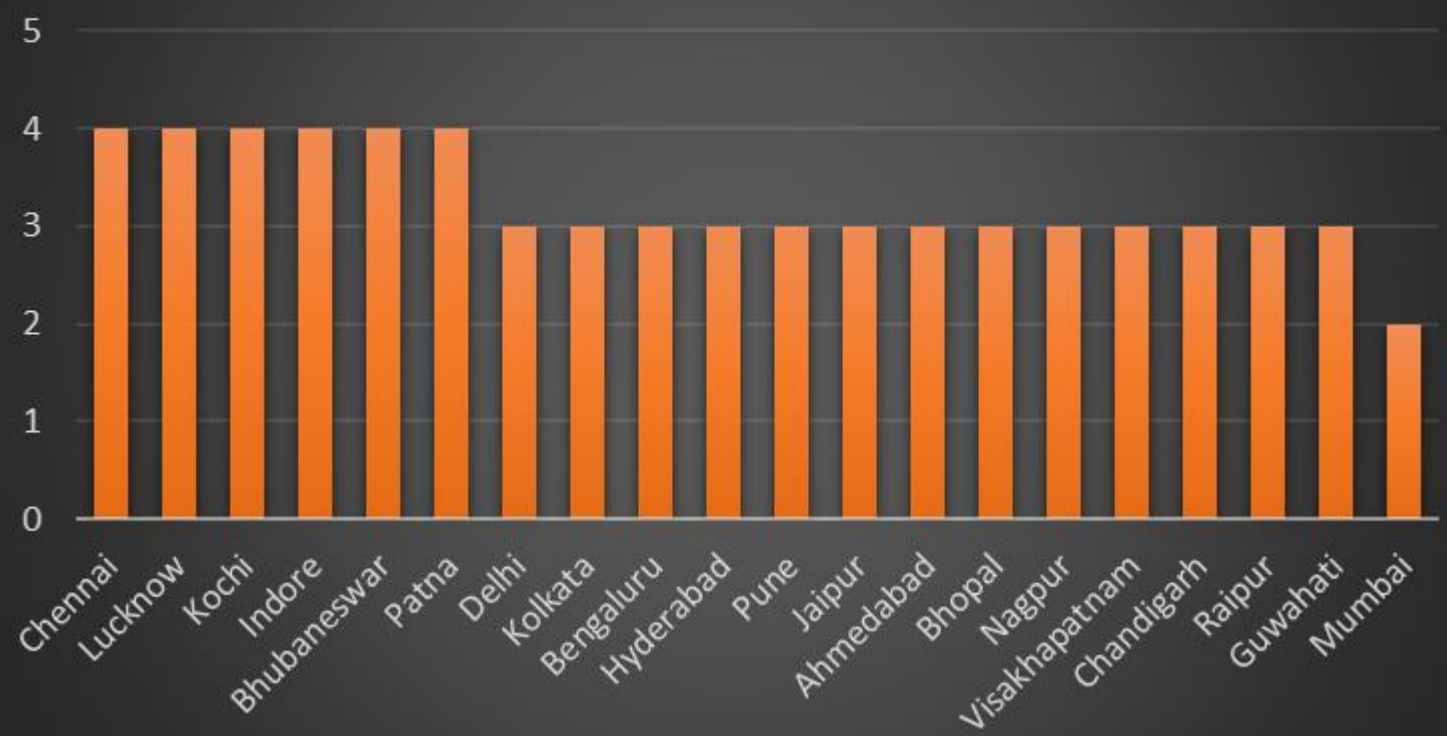**Retrieve the total number of students enrolled in each course.**

TotalStudents

QUERY:
SELECT CourseName,
COUNT(*) as
TotalStudents FROM
Student JOIN Course
ON student.courseID =
course.CourseID
GROUP BY
CourseName;
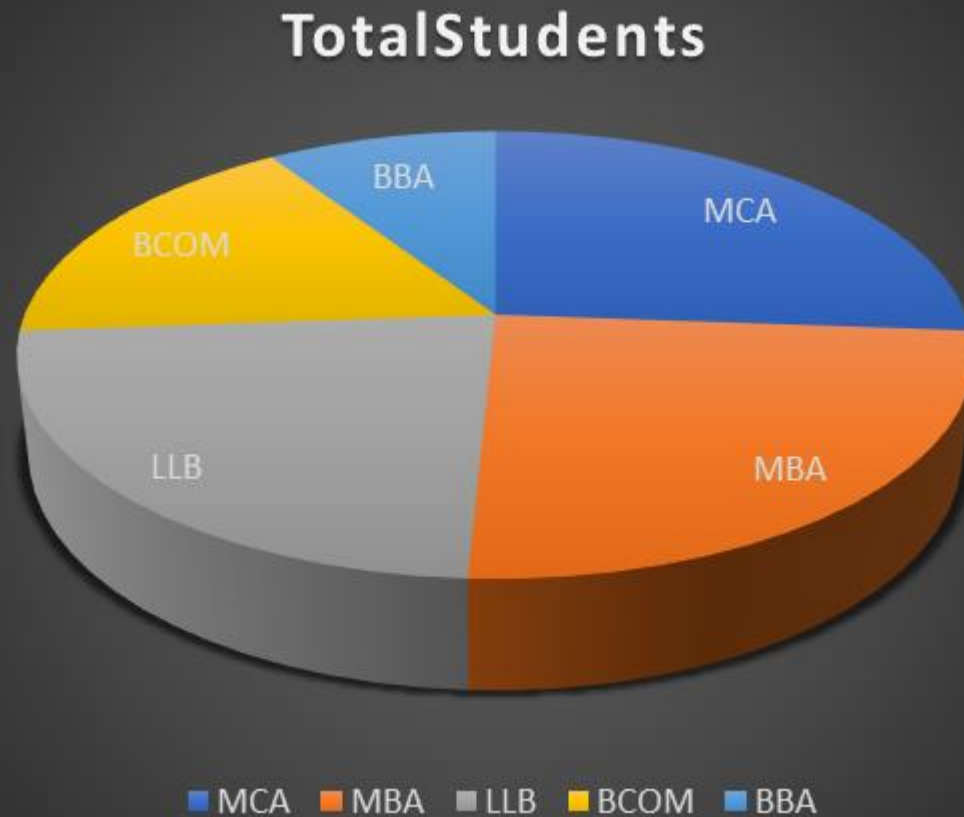
The institute wants to analyze the geographic distribution of its students and identify the cities from which the highest number of students come from. Write a query to retrieve the list of cities along with the count of students from each city.
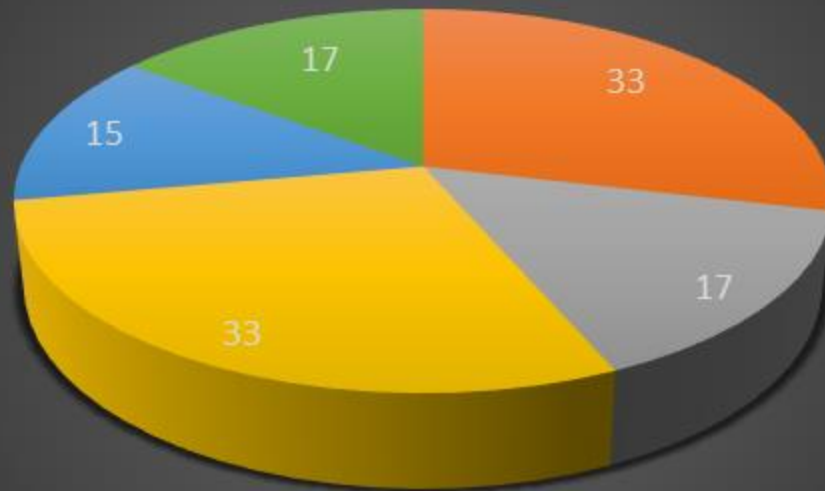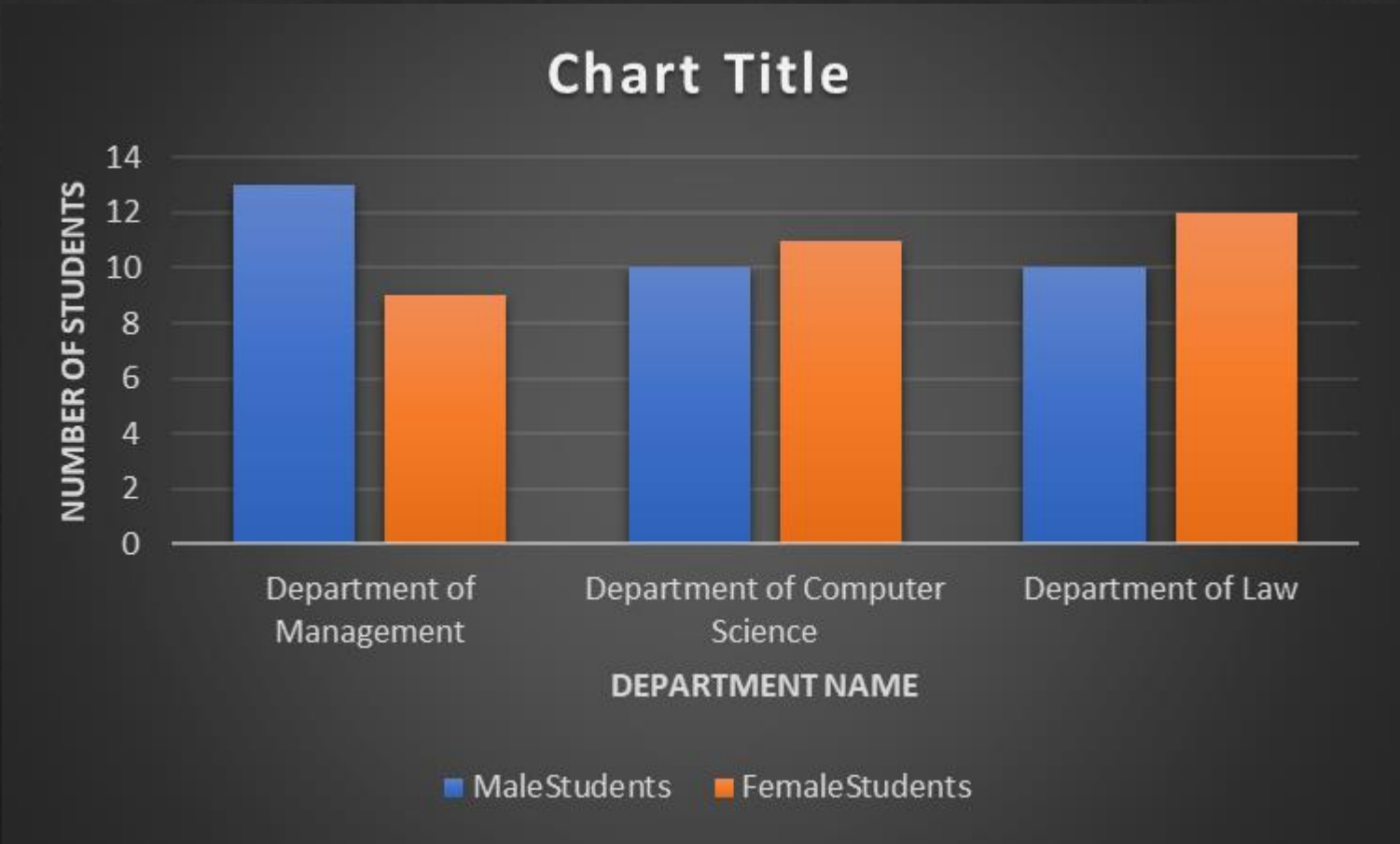

QUERY:
SELECT city, COUNT(*) as TotalStudents FROM Student_Address GROUP BY city;

Retrieve the list of staff members and the number of students they have mentored.

QUERY:
SELECT Staff.StaffName, COUNT(Student.student_id) as MentoredStudents FROM Staff LEFT JOIN Department ON Staff.DepartmentID = Department.DepartmentID LEFT JOIN Course ON Department.DepartmentID = Course.DepartmentID LEFT JOIN Student ON Course.CourseID = Student.courseID GROUP BY Staff.StaffName;

Retrieve the CourseName, CourseDuration and the number of students enrolled.

QUERY:
SELECT CourseName, CourseDuration, COUNT(*) AS NumStudents FROM Student JOIN Course ON Student.CourseID = Course.CourseID GROUP BY CourseName, CourseDuration;
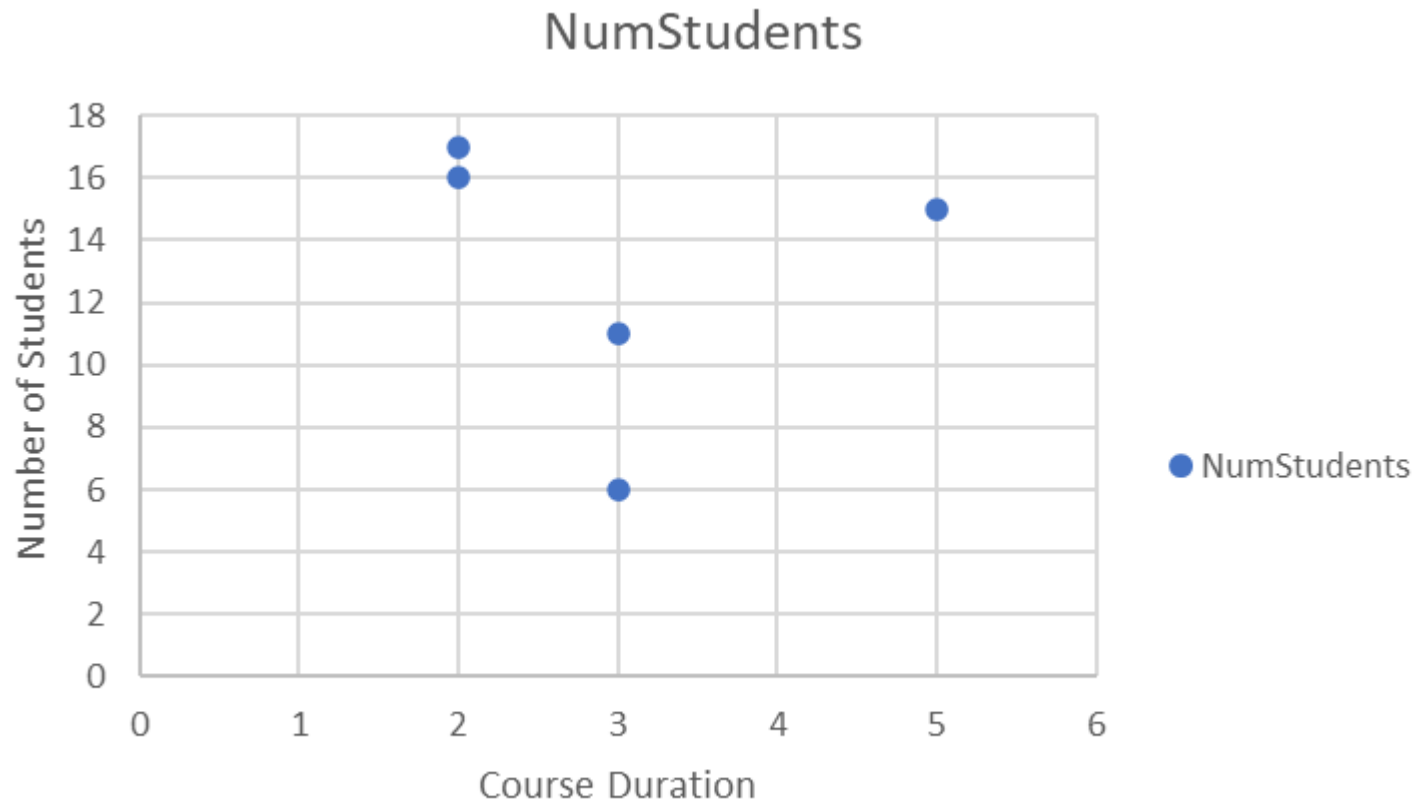
Show the number of students from each department by gender.

QUERY:
SELECT DepartmentName, (SELECT COUNT(*) FROM Student WHERE Department.DepartmentID = Student.departmentID AND student_gender = 'male') AS MaleStudents, (SELECT COUNT(*) FROM Student WHERE Department.DepartmentID = Student.departmentID AND student_gender = 'female') AS FemaleStudents FROM Department;

Show the number of courses offered by each department:

QUERY:
SELECT DepartmentName, COUNT(*) AS CourseCount FROM Course JOIN Department ON Course.DepartmentID = Department.DepartmentID GROUP BY DepartmentName;
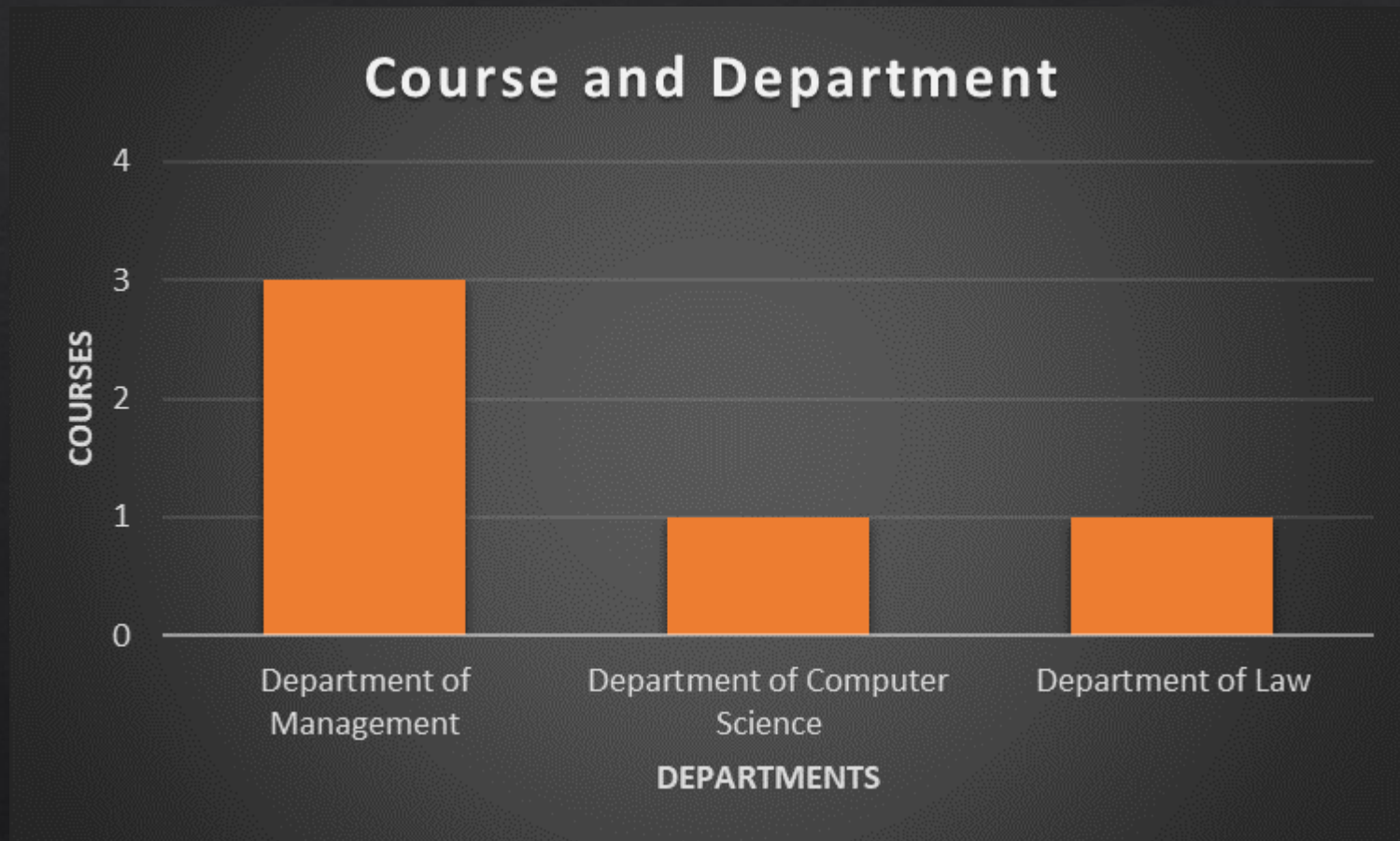
Retrive the list of number of alumni by department

QUERY:
SELECT DepartmentName, COUNT(*) as NumAlumni FROM Alumni INNER JOIN Department ON Alumni.DepartmentID = Department.DepartmentID GROUP BY DepartmentName;

**Show the Total fees earned by each department.**

QUERY:
SELECT d.DepartmentName, SUM(f.Amount) AS TotalFees FROM Department d JOIN Student s ON s.DepartmentID = d.DepartmentID JOIN Fees f ON f.student_id = s.student_id GROUP BY d.DepartmentName;
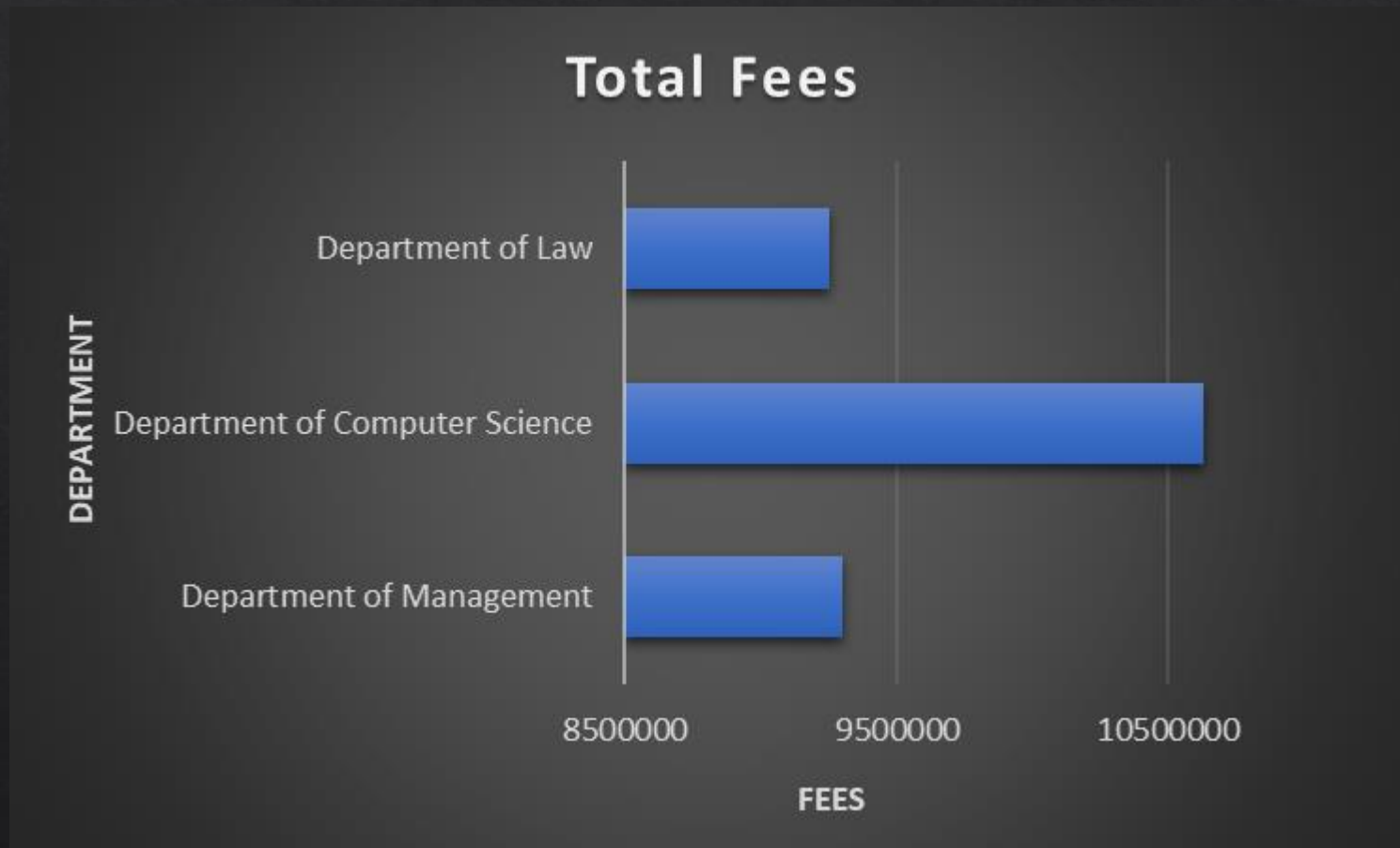
Retrieve the count of students born in each year for generating a graph showing the distribution of students' birth year.
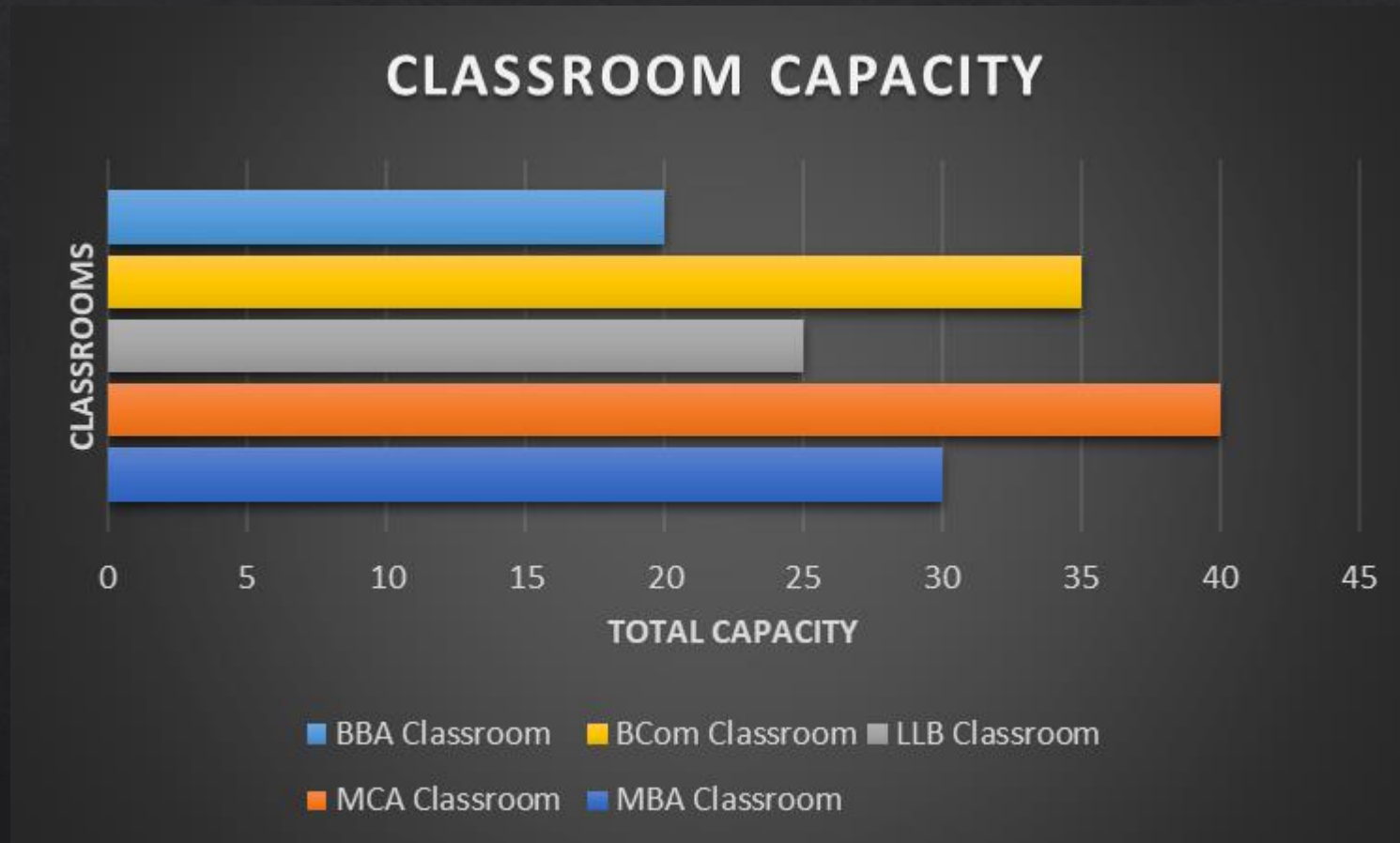
QUERY:
SELECT YEAR(student_date_of_birth) AS Year, COUNT(*) AS StudentCount FROM Student GROUP BY YEAR ORDER BY YEAR;
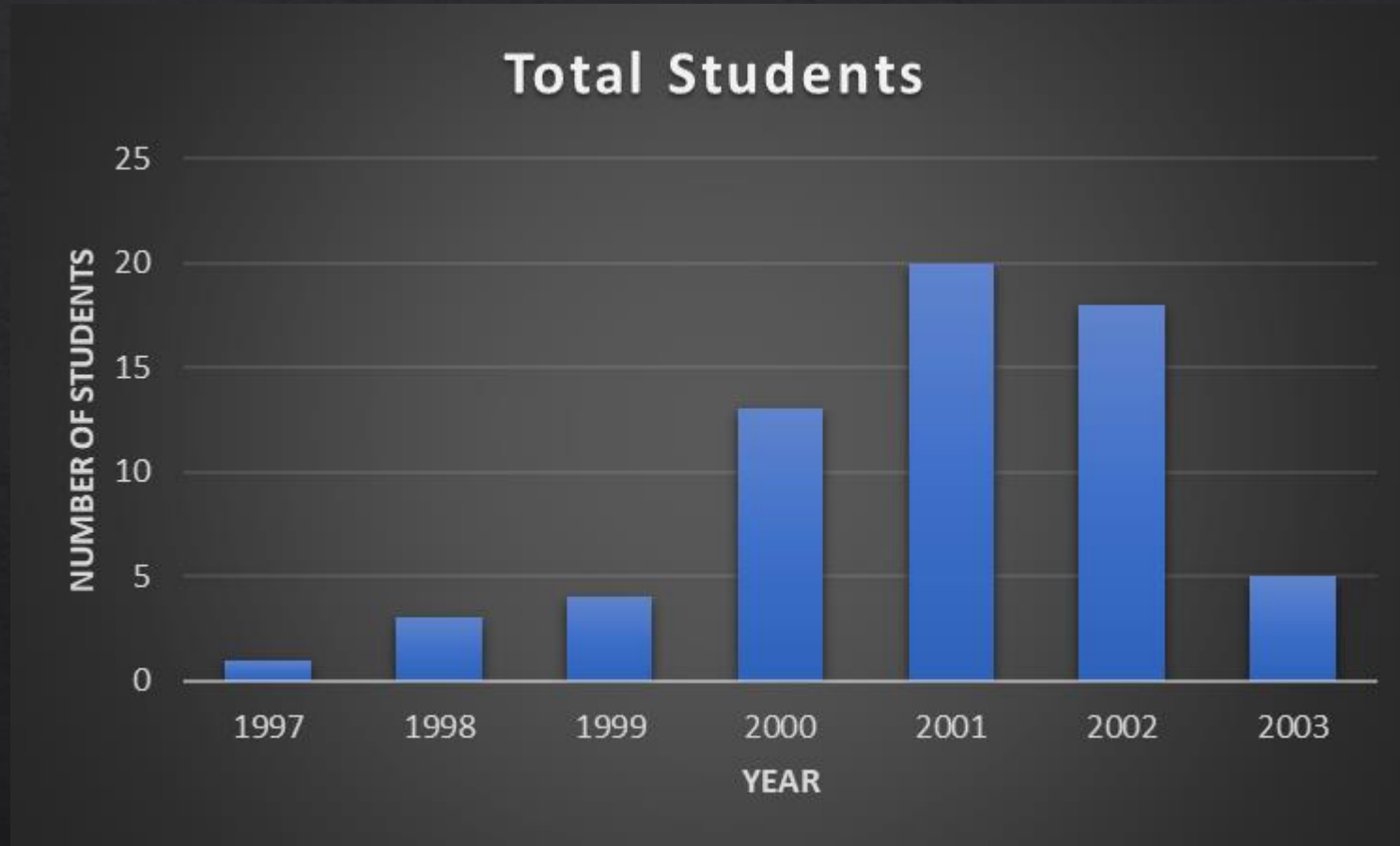
To retrieve the classroom names and their respective capacities

QUERY:
SELECT ClassroomName, ClassroomCapacity FROM Classroom

THANK YOU