



Course: B.Tech.

Semester: 5

Prerequisite: Basic Computer Knowledge

Rationale: The course will enable students to understand the different issues involved in the design and implementation of a database system as well execute various database queries using SQL.

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total	
Lecture Hrs/	Tutorial Hrs/	Lab Hrs/	Hrs/	Credit	Internal Marks			External Marks			
					T	CE	P	T	P		
29	0	2	-	1	-	-	20	-	30	50	

SEE - Semester End Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

Course Outcome

After Learning the Course the students shall be able to:

1. Understand basic concepts of Database.
2. Understand Relational Models and its importance.
3. Build proper structured database for a given problem or application.
4. Learn how various transactions are managed in real-time scenarios.
5. Understand the evaluation parameters of a query as well as security parameters of database.
6. Implement SQL concepts to build dynamic database applications.



Practical – 1

1. What is DBMS? Explain advantages of DBMS over FPS.
2. List 15 applications of Database. Explain any 2 how Database can be helpful in managing that application?
3. Create the Database for the following:
 - A. Student Details using Excel.
 - B. Employees Details using MS Access.
 - C. Facebook using Excel.

Practical – 2

Create following Tables:

Important Instructions:

- Use **varchar2(30)** datatype for **Alphanumeric Characters and Special Symbols**, **number** datatype for **Numbers**, **date** datatype for **Date**.
- Use **same table and column name (Capital and Small Case)** as mentioned in this file.
- Insert proper data (**Capital and Small Case**) as mentioned in this file.

Employee

Emp_name	Street	City
Adam	Spring	Pittsfield
Brooks	Senator	Brooklyn
Curry	North	Rye
Demalo	SunShine	San Deago

Work

Emp_name	Cmp_name	Salary
Adam	FBC	20000
Brooks	MBC	30000
Curry	SBC	10000

Company

Cmp_name	City
FBC	Pittsfield
MBC	Brooklyn
SBC	Rye

Manager

Emp_name	Man_name
Adam	Smith
Brooks	Jones
Curry	Hayes



Sailors

Sid	Sname	Rating	Age
22	Dustin	7	45.0
29	Brutus	1	33.0
31	Lubber	8	55.5
32	Andy	8	25.5
58	Rusty	10	35.0
64	Horatio	7	35.0
71	Zobra	10	16.0
74	Horatio	9	35.0
85	Art	3	25.5
95	Bob	3	63.5

Reserves

Sid	Bid	Day
22	101	10 -oct- 98
22	102	10 -oct- 98
22	103	10 -aug 98
22	104	10 -jul- 98
31	102	11 –oct- 98
31	103	11 –jun- 98
31	104	11 –dec- 98
64	101	9 –may- 98
64	102	9 – aug- 98
74	103	9 –aug- 98

Boats

Bid	Bname	Color
101	Interlake	Blue
102	Interlake	Red
103	Clipper	Green
104	Marine	Red

Client

Cl_no	Name	City	Pincode	State	Baldue
C00001	Ivan Bayross	Mumbai	400054	Maharashtra	15000
C00002	Mamta Muzumdar	Madras	780001	Tamil Nadu	100
C00003	Chhaya Bankar	Mumbai	400057	Maharashtra	5000
C00004	Ashwini Joshi	Bangalore	560001	Karnataka	500
C00005	Hansel Colaco	Mumbai	400060	Maharashtra	2000
C00006	Deepak Sharma	Mangalore	560050	Karnataka	1000



Product

Pr_no	Dscr	Profit	Unit	Qty	Reorder_Lvl	Sell_Price	Cost_Price
P00001	T-Shirts	5	Piece	200	50	350	250
P0345	Shirts	6	Piece	150	50	500	350
P06734	Cotton Jeans	5	Piece	100	20	600	450
P07865	Jeans	5	Piece	100	20	750	500
P07868	Trousers	2	Piece	150	50	850	550
P07885	Pull Overs	3	Piece	80	30	700	450
P07965	Denim Shirts	4	Piece	100	40	350	250
P07975	Lycra Tops	5	Piece	70	30	300	175
P08865	Skirts	5	Piece	75	30	450	300

Salesman

Sl_no	Name	Add1	Add2	City	Pin	State	Amt	Tgt	Sales	Rem
S00001	Aman	A/14	Worli	Mumbai	400002	Maharashtra	3000	100	50	Good
S00002	Omkar	65	Nariman	Mumbai	400001	Maharashtra	3000	200	100	Good
S00003	Raj	P-7	Bandra	Mumbai	400032	Maharashtra	3000	200	100	Good
S00004	Ashish	A/5	Juhu	Mumbai	400044	Maharashtra	3500	200	150	Good

Salesorder

Od_no	Cl_no	O_dat	Sl_no	D-Type	Bill	D_dat	Status
O19001	C00001	12-JUN-04	S00001	F	N	20-JUL-04	In Process
O19002	C00002	25-JUN-04	S00002	P	N	27-JUN-04	Cancelled
O46865	C00003	18-FEB-04	S00003	F	Y	20-FEB-04	Fulfilled
O19003	C00001	03-APR-04	S00001	F	Y	07-APR-04	Fulfilled
O46866	C00004	20-MAY-04	S00002	P	N	22-MAY-04	Cancelled
O19008	C00005	24-MAY-04	S00004	F	N	26-JUL-04	In Process

Salesorder_Details

Od_no	Pr_no	Qty_order	Qty_disp	Rate
O19001	P00001	4	4	525
O19001	P07965	2	1	8400
O19001	P07885	2	1	5250
O19002	P00001	10	0	525
O46865	P07868	3	3	3150
O46865	P07885	3	1	5250
O46865	P00001	10	10	525
O46865	P0345	4	4	1050
O19003	P0345	2	2	1050
O19003	P06734	1	1	12000
O46866	P07965	1	0	8400
O46866	P07975	1	0	1050
O19008	P00001	10	5	525



019008	P07975	5	3	1050
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Deposit

Act_no	Cname	Bname	Amount	Date
100	ANIL	VRCE	1000.00	1-MAR-95
101	SUNIL	AJNI	5000.00	4-JAN-96
102	MEHUL	KAROLBAGH	3500.00	17-NOV-95
104	MADHURI	CHANDI	1200.00	17-DEC-95
105	PRMOD	M.G.ROAD	3000.00	27-MAR-96
106	SANDIP	ANDHERI	2000.00	31-MAR-96
107	SHIVANI	VIRAR	1000.00	5-SEP-95
108	KRANTI	NEHRU PLACE	5000.00	2-JUL-95
109	MINU	POWAI	7000.00	10-AUG-95

Borrow

Loanno	Cname	Bname	Amount
201	ANIL	VRCE	1000.00
206	MEHUL	AJNI	5000.00
311	SUNIL	DHARAMPETH	3000.00
321	MADHURI	ANDHERI	2000.00
375	PRMOD	VIRAR	8000.00
481	KRANTI	NEHRU PLACE	3000.00

Branch

Bname	City
VRCE	NAGPUR
AJNI	NAGPUR
KAROLBAGH	DELHI
CHANDI	DELHI
DHARAMPETH	NAGPUR
M.G.ROAD	BANGLORE
ANDHERI	BOMBAY
VIRAR	BOMBAY
NEHRU PLACE	DELHI
POWAI	BOMBAY

Customers

Cname	City
ANIL	CALCUTTA
SUNIL	DELHI
MEHUL	BARODA
MANDAR	PATNA
MADHURI	NAGPUR
PRAMOD	NAGPUR
SANDIP	SURAT
SHIVANI	BOMBAY
KRANTI	BOMBAY
NAREN	BOMBAY



PRACTICAL – 3 – Simple Queries

- (1) Describe deposit, branch.
- (2) Describe borrow, customers.
- (3) List all data from table DEPOSIT.
- (4) List all data from table BORROW.
- (5) List all data from table CUSTOMERS.
- (6) List all data from table BRANCH.
- (7) Give account no and amount of depositors.
- (8) List all data from SAILORS.
- (9) List Boat Name and its color.
- (10) List Employee name and its city.
- (11) List all the details of Clients.
- (12) Describe various products and its price.
- (13) Describe sailor's name, age and its rating.
- (14) Describe the managers of various employees.
- (15) Describe the date of travel of various sailors.

PRACTICAL – 4 – Simple Queries

- (1) Give name of depositors having amount greater than 4000.
- (2) List the employees having salary less than 22000.
- (3) List the sailors having age more than 25.
- (4) List the boats travelling on 10-oct-98
- (5) List the details of boat "Interlake".
- (6) List the details of the red colored boat.
- (7) List the details of clients whose city is Mumbai
- (8) List Client Name, due balance and city of the clients having balance greater than 1500.
- (9) Describe the details of products having selling price less than 500.
- (10) List the products for which quantity ordered is less than 120 and cost price is greater than 250.
- (11) Display account details having amount greater 2200.
- (12) Display all the customers staying in Nagpur
- (13) Display the names of sailors having rating greater than 7
- (14) Display the orders made in the month of June
- (15) List all the accounts created in the month of March.

PRACTICAL – 5 – "Like" Queries

- (1) Display all customers whose name start with 'M'.
- (2) Display all the customers whose name ends with 'L'.
- (3) Display all loan details whose branch starts with 'A'.
- (4) Display the details of sailors whose name is minimum 6 characters long.
- (5) Display the details of Employees whose address starts with 'S'.
- (6) List the details of the boat ending with 'e'.
- (7) List the details of clients having 'h' as a 3rd character in his/her name.
- (8) List Client Name, due balance and city whose pin code starts with 4.
- (9) List all customers whose city contains 'a' as second character.
- (10) List client names and city whose state has 'a' as fourth or fifth character.

PRACTICAL – 6 – "Aggregate Functions & DML" Queries

- (1) List total deposit from deposit.
- (2) Give maximum loan given to the customer.



- (3) Describe the average age of all the sailors.
- (4) Count total number of customers
- (5) Count total number of customer's cities.
- (6) Display total target for the salesman.
- (6) Update the salary of the employee having 10000 to 11500 .
- (7) Update the city of client from Bangalore to Bengaluru.
- (8) Give the 15% hike in the salary of all the Employees. Rename that column to "New Salary".
- (9) Increase the sell price of all products by 20% and label new column as "New Sell Price". (Do not update the table)
- (10) Provide the count of customers staying in "Bombay".

PRACTICAL – 7 – “Join” Queries

- (1) Find the salary of Adam.
- (2) Find the city where Brooks work.
- (3) Display the sailor's details whose boat is booked for 9th May, 98.
- (4) Display the day of ride and sailor name for boat 103.
- (5) Display the sailor name and its age for Red colored and 101 boat.
- (6) Display the sailor details whose boat is never booked.
- (7) Display the sailor name that has Red or Green Boat.
- (8) Display all sailor details and boat details and who has Interlake boat.
- (9) Display sailor's rating with boat details or the trip on 10th October, 98.
- (10) Display the sailor id and name whose age is more than 42 or who has Blue colored boat.
- (11) Display name and rating of sailor whose boat name is Clipper.
- (12) List products whose selling price is more than 500 and less than equal to 750.
- (13) Describe the second highest salary of an employee.
- (14) Display the date of travel and sailor's name whose age is between 35 and 65.
- (15) List all the employees working for “FBC”.

PRACTICAL – 8 – “Join” Queries

- (1) Display all the employee name and the city where they work.
- (2) Display the employee name and company's name having salary more than 15000.
- (3) Find the average rating and age of all sailors.
- (4) List various products available.
- (5) Display the names of salesman who have salary more than 2850.
- (6) Change the cost price of Trousers to 950
- (7) List all the clients having “a” as a second character in their names.
- (8) List all the products whose QtyOnHand is less than ReorderLvl.
- (9) Print the description and total qty sold for each product.
- (10) Find out all the products which have been sold to “Ivan Bayross”.
- (11) Find the names of all clients who have purchased Trousers.
- (12) Find the products and their quantities for the orders placed by client C00001 and C00002.
- (13) List the client details who place order no. O19001.
- (14) List the name of clients who have placed orders worth Rs. 10000 or more.
- (15) Find the total of Qty ordered for each Order.

PRACTICAL – 9 – “Miscellaneous” Queries

- (1) Find the average rate for each Order.
- (2) Give the loan details of all the customers.
- (3) List the customer name having loan account in the same branch city they live in.
- (4) Provide the loan details of all the customers who have opened their accounts after August'95.
- (5) List the order information for client C00001 and C00002.
- (6) List all the information for the orders placed in the month of June.



- (7) List the details of clients who do not stay in Maharashtra.
- (8) Determine the maximum and minimum product price. Rename the output as “Max_Price” and “Min_Price”.
- (9) Count the number of products having price less than or equal to 500.
- (10) List the order number and the day on which client placed an order.
- (11) List the month and the date on which an order is to be delivered.
- (12) List the date, 25 days after today's date.
- (13) Find the total of all the billed orders in the month of June.
- (14) List the products and orders from customers who have ordered less than 5 units of “Pull Overs”.
- (15) Find the list of products and orders placed by “Ivan Bayrosss” and “Mamta Muzumdar”.
- (16) List the clients who placed order before June'04.
- (17) List all the clients who stays in “Bengaluru” or “Mangalore”.

PRACTICAL – 10 – “PL/SQL Block

- (1) Write a PL/SQL Block to Add 2 Numbers
- (2) Write a PL/SQL Block to find Area of Rectangle, Triangle and Square.
- (3) Write a PL/SQL Block to find Maximum of 3 numbers
- (4) Write a PL/SQL Block to print sum of N Numbers using For Loop.
- (5) Write a PL/SQL Block to generate Fibonacci series of N numbers