Delhi Public School Bangalore East

Subject: Computer Science (083)

Practical List for Term II for Grade XII : 2021-22

1. A class has students who have opted Physics, Mathematics, Biology subjects. Obtain the number of each and store in a dictionary in the given format: {‘XIA’: {Phy:35, Math:20, Bio:15}}. Create a Stack of such dictionaries and implement pop and push for the same in python. Implement in the form of a menu:
    - Insert into Stack
    - Delete from Stack
    - Display the Stack
    - Exit

2. Consider a data structure that can hold data such as Name and Salary of an employee. Write a menu driven program in Python to implement a stack of employees. Write relevant functions AddEmployee() and RemoveEmployee() which will push and pop employees in the stack. Insert all employees into a different List and sort them in ascending order of name. The Menu looks like:
    - Add a new Employee
    - Remove an Employee
    - Show the list of Employees in ascending order of their names.
    - Exit

3. Write the python program that connects to the relation **Hospital** and executes the following SQL queries:

No	Name	Age	Department	Dateofadm	Charges	Sex
1	Sandeep	55	Surgery	23/02/98	300	M
2	Ravina	24	Orthopedic	20/01/98	200	F
3	Karan	45	Orthopedic	19/02/98	200	M
4	Tarun	12	Surgery	01/01/98	300	M
5	Zubin	36	ENT	12/01/98	250	M

a) To list the names of female patients who are in Orthopedic department.

b) To count the number of patients with age greater than 30.

c) To show all information about the patients of cardiology department.

4. Write the python program that connects to the relation **School_Bus** and executes the following SQL queries:

Rtno	**Area_Covered**	**Capacity**	**Noofstud**	**Dist (km)**	**Transporter**	**Charges**
1	Vasant Nagar	100	120	10	Anand Travels	25000
2	Rohini Apt	90	80	10	Yadav Co	20000
3	Yamuna Tower	60	55	30	Anand Travels	28000
4	Krishna Apt	100	105	35	Yadav Co	30000
5	Vasant Vihar	50	40	15	Anand Travels	23000

a) Count the total number of students travelling in Anand Travels.

b) Increase the Charges by 3000 where the distance is above 25 Km.

c) To show transporter wise average no of students traveling.

5. Write the python program that connects to the relation **Coach** and executes the following SQL queries:

CoachID	**CoachName**	**Age**	**Sports**	**DOJ**	**Fee**	**Sex**
1	Karan	34	Karate	27/03/1996	1000	M
2	Tarun	36	Squash	20/01/1998	2000	M
3	Zubin	38	Karate	19/02/1998	2000	M
4	Ravina	31	Swimming	01/01/1998	1500	F
5	Shailaja	34	Basketball	23/04/1997	1200	F

a) Display the average fee for Karate.

b) To count the number of coaches in each sport.

c) To display details of all coaches who have joined in the year 1998.

6. Write the python program that connects to the relation **Worker** and executes the following SQL queries:

Ecode	Name	Designation	PLevel	DOB
11	RadheShyam	Supervisior	P001	23-Aug-1981
12	ChanderNath	Operator	P003	12-Jul-1987
13	Fizza	Operator	P003	14-Oct-1983
15	Ammen Ahmed	Mechanic	P002	13-Mar-1984
18	Sanya	Clerk	P002	09-Jun-1983

a) To display the details of all workers whose Names end with ‘a’.

b) To total the number of employees in each category of PLevel.

c) To sort the data in the descending order of DOB.

7. Write the python program that connects to the relation **MOVIE** and executes the following SQL queries:

No	Title	Type	Rating	Stars	Qty	Price
1	Gone with the wind	Drama	G	Gable	4	39.95
2	Friday the 13th	Horror	R	Jason	2	89.95
3	Top Gun	Drama	PG	Cruise	7	49.95
4	Splash	Comedy	G	Hanks	3	29.95
5	Risky Business	Comedy	R	Cruise	2	44.95

a) Find the average price of the movies where the rating is not 'G'

b) Increase the Price of ‘Drama’ type of books by 10%.

c) Delete the column ‘Stars from the given table.

8. Write the python program that connects to the relation **Sports_Master** and executes the following SQL queries:

Event_name	Evt_code	No_in_team	Event_date	Category
100 mts run	1001	1	1/1/2001	Junior
Volley ball	1002	9	2/1/2001	Senior
Cricket	1003	11	12/1/2001	Senior
Shot put	1004	1	13/1/2001	Junior
Javalin	1005	1	2/1/2001	Senior

a) To display the details of the table in the decreasing order of Event_date.

b) To count the number of events based on their category.

c) To delete the record where the No_in_team is more than 10.

9. Write the python program that connects to the relation **Employee** and executes the following SQL queries:

Eid	Name	Deptid	Qualification	Sex
1	Deepali	101	MCA	F
2	Rajat	101	BCA	M
3	Harita	102	B.A	F
4	Harry	102	M.A	M
5	Sumit	103	B.Tech	M

a) To display the name of the only Female employees.

b) To display the total number of employees department wise.

c) To display the Name that begin with ‘H’.

10. Write the python program that connects to the relation **Items** and executes the following SQL queries:

No	ItemName	CostPerItem	Quantity	DateOfPurchase
1.	Computer	60000	9	21/5/96
2.	Printer	15000	3	21/5/97
3.	Scanner	18000	1	29/8/98
4.	Camera	21000	2	13/10/96
5.	Switch	8000	1	31/10/99

a) To display all the ItemName whose name starts with “S” or ends with “a’.

b) To count the number of items whose cost is more than 10000.

c)To display the details of the costliest Item.

11. Write the python program that connects to the relation **Stationery** and executes the following SQL queries:

S_ID	StationeryName	Company	Price
DP01	Dot Pen	ABC	10
PL02	Pencil	XYZ	6
ER05	Eraser	XYZ	7
PL01	Pencil	CAM	5
GP02	Gel Pen	ABC	15

a) To increase the Price of all Stationery by 4.

b) To display the maximum & minimum price of companies other than ‘CAM’.

c) To display all StaioneryNames that end with ‘Pen’.

12. Write the python program that connects to the relation **Voter** and executes the following SQL queries:

Vno	Vname	Age	Address	Phone
1	Rohit	22	Rohini	7045249
2	Smith	24	PaschimVihar	5580438
3	Arpit	21	Multan Nagar	5585643
4	Sumit	23	VikasPuri	5565127
5	Shobhit	23	Rohini	7057845
6	Rohit	24	Rohini	7057845

a) List different voters whose age falls in the range 20 to 25 in descending order of their names.

b) Count the age-wise number of voters.

c) Display the total number of voters who belong to the address ends with ‘i’.

13. Create a table in MySQL with the following data. Write a Python program to connect to the database to table ‘**INTERIORS’** and executes the following SQL queries:

TABLE: INTERIORS

NO	ITEMNAME	TYPE	DATEOFSTOCK	PRICE	DISCOUNT
1	Red rose	Double Bed	2023-02-02	32000	15
2	Soft touch	Baby cot	2020-01-02	9000	10
3	Jerry's home	Baby cot	2019-02-02	8500	10

a) Add a new column called dealers of type varchar(10), update the dealer column for all rows to ‘Unknown’

b) Display the total amount after deducting the discount amount for every item

c) Display the items having ‘e’ in it’s name.

14. Write the python program that connects to the relation **WATCHES** and executes the following SQL queries:

Watchid	Watch_Name	Price	Type	Qty_Store
W001	HighTime	10000	Unisex	100
W002	LifeTime	15000	Ladies	150
W003	Wave	20000	Gents	200
W004	HighFashion	7000	Unisex	250
W005	GoldenTime	25000	Gents	100

a) To increase the price of all watches by 10% whose Qty_Store is less than 150.

b) Disply different Types of Watches available in the given data;

c) Change the columnname Price to ItemPrice

15. In a Bank’s database, there are two tables ‘CUSTOMER_INFO’ and ‘TRANSACTION__DETAIL’ as shown below:

CUSTOMER_INFO

SNo	Acc_No	Cust_Name	Cust_Add	Cust_City	Cust_Phone
1	1001001	Ram	Vasundhara Enclave	New Delhi	8710557614
2	1001002	Kavita	Punjabi Bagh	New Delhi	7123545233
3	1001003	Raj	Civil Lines	Allahabad	9872136576
4	1001004	Sohan	Krishnanagar	Kanpur	9921305453

TRANSACTION_DETAIL

Trans_Id	Acc_No	Transaction_Type	Amount
T001	1001001	Credit	5000
T002	1001002	Credit	10000
T003	1001001	Debit	2000
T004	1001004	Credit	6000
T005	1001001	Credit	4000

With reference to these tables, write a python program that connects the given relations and executes the following SQL commands:

i) Display customer name and transaction details of ‘Ram’

ii) Display the account details and total number of transactions for each account located in “New Delhi”

iii) Display all records from both the tables using cartesian product

16. Consider the tables ‘FLIGHTS’ & ‘FARES’ given below:

FLIGHTS

FNO	SOURCE	DEST	NO_OF_FL	NO_OF_STOP
IC301	MUMBAI	BANGALORE	3	2
IC799	BANGALORE	KOLKATA	8	3
MC101	DELHI	VARANASI	6	0
IC302	MUMBAI	KOCHI	1	4
AM812	LUCKNOW	DELHI	4	0
MU499	DELHI	CHENNAI	3	3

FARES

FNO	AIRLINES	FARE	TAX
IC301	Indian Airlines	9425	5
IC799	Spice Jet	8846	10
MC101	Deccan Airlines	4210	7
IC302	Jet Airways	13894	5
AM812	Indian Airlines	4500	6
MU499	Sahara	12000	4

With reference to these tables, write a python program that connects the given relations and executes the following SQL commands:

a) To display flight number, source, airlines of those flights where fare is less than Rs. 10000.

b) To count total no of Indian Airlines flights starting from various cities.

c) To display flight and fare details of all flights to ‘Varanasi’;