**PSG COLLEGE OF TECHNOLOGY-COIMBATORE**

**DEPARTMENT OF APPLIED MATHEMATICS AND COMPUTATIONAL SCIENCES**

**III Sem MSc Software Systems - 18XW38 - RDBMS LAB**

**Problem Sheet – VII**

1. The following tables are used to store the details of students of an institute.



# Courses

This table contains details of all courses offered by the institute.

|  |  |  |
| --- | --- | --- |
| COLUMN NAME | DATATYPE | DESCRIPTION |
| CCODE | VARCHAR2(10) | COURSE CODE – PRIMARY KEY |
| CNAME | VARCHAR2(50) | COURSE NAME |
| COURSEFEE | NUMBER(6) | COURSE FEE IN INR |
| DURATION | NUMBER(3) | DURATION OF COURSE IN MINUTES |
| PREREQ | VARCHAR2(100) | PREREQUISITE FOR THE COURSE |

# Batches

This table contains details of all batches – running and completed and yet to start.

|  |  |  |
| --- | --- | --- |
| COLUMN NAME | DATA TYPE | DESCRIPTION |
| BATCHCODE | VARCHAR2(10) | A UNIQUE CODE FOR EACH BATCH WITH FORMAT  <COURSE><STDATE> - PRIMARY KEY |
| CCODE | VARCHAR2(10) | A FOREIGN KEY REFERENCING THE COURSE TAUGHT IN THIS BATCH |
| STDATE | DATE | STARTING DATE OF THIS BATCH |
| ENDDATE | DATE | ENDING DATE OF THE BATCH. COULD BE NULL UNTIL BATCH IS COMPLETED. CHECK THE CONSTRAINT STDATE < ENDDATE |
| TIMINGS | VARCHAR2(20) | BATCH TIMINGS |

# Students

This table contains details of all students of all batches. Each student is given a unique admission number. Each student in the batch is given a roll number, which is unique in the batch.

|  |  |  |
| --- | --- | --- |
| COLUMN NAME | DATA TYPE | DESCRIPTION |
| ADMNO | NUMBER(5) | A UNIQUE NUMBER ASSIGNED TO EACH STUDENT OF THE INSTITUTE – PRIMARY KEY |
| BATCHCODE | VARCHAR2(10) | BATCH CODE FOR THE BATCH TO WHICH STUDENT BELONGS. FOREIGN KEY, REFERENCES BATCHES TABLE |
| ROLLNO | NUMBER(3) | ROLL NUMBER OF THE STUDENT IN THE BATCH |
| FULLNAME | VARCHAR2(50) | FULLNAME OF THE STUDENT |
| FATHERNAME | VARCHAR2(50) | FATHERS NAME OF THE STUDENT |
| EMAIL | VARCHAR2(50) | EMAIL ADDRESS OF THE STUDENT |
| PHONENO | VARCHAR2(20) | PHONE NUMBER OF THE STUDENT |
| DJ | DATE | DATE ON WHICH STUDENT JOINED |

# Payments

This table contains details of all payments made by students.

|  |  |  |
| --- | --- | --- |
| COLUMN NAME | DATA TYPE | DESCRIPTION |
| RCPTNO | NUMBER(5) | RECEIPT NUMBER FOR PAYMENT – PRIMARY KEY |
| ADMNO | NUMBER(5) | ADMISSION NUMBER OF THE STUDENT MAKING THE PAYMENT. FOREIGN KEY, REFERENCING STUDENTS  TABLE |
| AMOUNT | NUMBER(6) | AMOUNT PAID BY STUDENT |
| PAYDATE | DATE | DATE OF PAYMENT |
| REMARKS | VARCHAR2(200) | REMARKS REGARDING PAYMENT |

1. Insert the following data into these tables.

# Courses

INSERT INTO COURSES VALUES(’ORACLE11G’,’ORACLE DATABASE 11G’,2500,40,’COMPUTER KONWLEDGE’); INSERT INTO COURSES VALUES(’JAVASE6.0’,’JAVA SE 6.0’,2500,40,’C LANGUAGE’);

INSERT INTO COURSES VALUES(’DOTNET3.5’,’MICROSOFT .NET 3.5’,3750,80,’C LANGUAGE & SQL’);

Batches

INSERT INTO BATCHES VALUES(’ORA130508’,’ORACLE11G’,’13-MAY-08’,’17-JUN-08’,’4:30 TO 6:00 PM’); INSERT INTO BATCHES VALUES(’DOTNET130508’,’DOTNET3.5’,’13-MAY-08’,’26-JUN-08’,’7:00 TO 9:00 AM’); INSERT INTO BATCHES VALUES(’ORA270608’,’ORACLE11G’,’27-JUN-08’,NULL,’5:00 TO 6:00 PM’);

INSERT INTO BATCHES VALUES(’JS270608’,’JAVASE6.0’,’27-JUN-08’,NULL,’6:00 TO 7:00 PM’);

Students

INSERT INTO STUDENTS VALUES(1,’ORA130508’,1,’MICHEAL JORDON’, ’TIM JORDON’,’[MJORDON@YAHOO.COM](mailto:MJORDON@YAHOO.COM)’, ’9873737334’,’11-MAY-08’);

INSERT INTO STUDENTS VALUES(2,’ORA130508’,2,’TIM SLIM’, ’TIM KEN’,’[TIM@YAHOO.COM](mailto:TIM@YAHOO.COM)’, ’9833334334’,’11-MAY-08’);

INSERT INTO STUDENTS VALUES(3,’DOTNET130508’,1,’HUNTER JASON’, ’HUNTER BOB’,’[JHUNTER@YAHOO.COM](mailto:JHUNTER@YAHOO.COM)’, ’34344343’,’11-MAY-08’);

INSERT INTO STUDENTS VALUES(4,’JS270608’,1,’JAMES GOODWILL’, ’JAMES ROBERTS’,’[JAMES@YAHOO.COM](mailto:JAMES@YAHOO.COM)’, ’9989898998’,’26-JUN-08’);

INSERT INTO STUDENTS VALUES(5,’JS270608’,2,’KENNY PETERSON’, ’KENNY JACOB’,’[KPERERSON@GMAIL.COM](mailto:KPERERSON@GMAIL.COM)’, ’9983373333’,’27-JUN-08’);

INSERT INTO STUDENTS VALUES(6,’ORA270608’,1,’GLEN JHONSON’, ’GLEN HENDRICK’,’[GLEN@GMAIL.COM](mailto:GLEN@GMAIL.COM)’, ’9898398985’,’28-JUN-08’);

INSERT INTO STUDENTS VALUES(7,’ORA270608’,2,’BATES KATHY’, ’BATES ROBERTS’,’[KATHY@YMAIL.COM](mailto:KATHY@YMAIL.COM)’, ’234423232’,’30-JUN-08’);

# Payments

INSERT INTO PAYMENTS VALUES(1,1,300,’11-MAY-08’,’REG. FEE’);

INSERT INTO PAYMENTS VALUES(2,2,2500,’11-MAY-08’,’TOTAL FEE’);

INSERT INTO PAYMENTS VALUES(3,3,1000,’11-MAY-08’,’REG. FEE’);

INSERT INTO PAYMENTS VALUES(4,3,2750,’12-MAY-08’,NULL);

INSERT INTO PAYMENTS VALUES(5,4,300,’26-JUN-08’,’REG. FEE’);

INSERT INTO PAYMENTS VALUES(6,5,300,’27-JUN-08’,’REG. FEE’);

INSERT INTO PAYMENTS VALUES(7,4,1700,’27-JUN-08’,NULL);

INSERT INTO PAYMENTS VALUES(8,5,1700,’29-JUN-08’,NULL);

INSERT INTO PAYMENTS VALUES(9,6,2500,’28-JUN-08’,’CHEQUE NO:3434343 SBI DWK’);

INSERT INTO PAYMENTS VALUES(10,7,2500,’30-JUN-08’,NULL);

1. Write SQL queries for the following requirements.

Simple Queries

1. Display all students in the ascending order of bachcode and joining date
2. Display all payments made in the month of May, 2008
3. Display all payment made through cheque.
4. Display student name, fathername, joining date and no. of days since joined.
5. Display batches that are currently running.
6. Display batches of JAVASE and ORACLE.
7. Display due date for the payment assuming due date is 7 days from dj.
8. Display details of students where due date for payment is over.
9. Display details of courses with a proposed increase of 10% in course fee for courses with course fee less than 3000.
10. Display students whose name contains letter 's' and father's name contains letter 'p'.
11. Display batches that are running for more than 45 days.
12. Display batchcode, stdate and approximate ending date for Oracle batches that are currently running, if batch takes two months.
13. Display the difference between actual ending date and estimated ending date for Java bathes assuming each batch takes two months.
14. Insert course details of JAVA EE web course.

INSERT INTO COURSES VALUES ('JAVAEEWEB','JAVA EE (WEB APPLICATIONS)', 3000, 40,'JAVA LANG AND SQL');

1. Update batches table to set enddate of batch JS130508 to yesterday.
2. Display batches that started in the previous year but ended in this year.
3. Display payments with amount more than 1000 or made by students with ADMNO in the range 100 and 150 in the last 10 days.
4. Change paydate for receipt 12 to 1st June, 2008 and admno to 120.
5. Display student's name, batchcode, and DJ in ascending order or name followed by DJ.
6. Display approximate date when cheque will be realized for cheque payments.

Grouping

1. Display total amount paid by all students.
2. Display the highest receipt number for payments in the month of May 2008.
3. Display batchcode and number of students in the batch.
4. Display the most recently stated batched for each course.
5. Display total amount paid on each day.
6. Display number of batches for each course in the current year.
7. Display amount collected for each month.
8. Display batches where the number of students is more than 10.
9. Display batchcode and first and last admission into batch.
10. Display courses for more than a batch was started in the same month.
11. Display number of batches for each year and course.
12. Use rollup and cube to display bathes for each year and course.
13. Display how many batches are currently running.
14. Display number of students using each mail server.
15. Display number of students for each batch on java with more than 10 students in the ascending order of no. Of students.
16. Display total amount received for the current month.
17. Display year and total payments for the year.
18. Display the number of courses students where name contains 'tom' have done.
19. Display days on which more than 5000 was received as payments.
20. Display batches where number of students who joined after in the last 10 days are more than 5.

Joining

1. Display batchcode, course name,starting date.
2. Display rcptno, fullname, amount paid and pay date in the order of paydate.
3. Display course name, batchcode and fullname.
4. Display no. Of students joined for each course.
5. Display the amount paid by each student in batch 'ora130508'.
6. Display the amount paid by each student in batch 'ora130508'.
7. Display details of batches for course with course fee more than 3000.
8. Display rcptno, fullname, batchcode, amount, paydate for payments in the last 10 days.
9. Display cname, batchcode, stdate and enddate for all batches that are completed.
10. Display fullname, dj and amountpaid at the time of joining.
11. Display coursename, batchcode including courses that do not have any batches.
12. Display names of the students who have not paid anything so far.
13. Display batches that started after batch with code 'ora130508'.
14. Display fullname, batchcode for students who have paid total amount at the time of admission.
15. Display details of students who have dues.

Subqueries

1. Display the payments made by student 'JAMES GOODWILL'.
2. Display payments made by students who joined into 'ORA270608' batch.
3. Display batches for course with duration more than 40 hours.
4. Display students who made payments in the current month.
5. Display students who joined into oracle course.
6. Display details of students from currently running batches.
7. Display fullname, email address of all students who completed batch 6 months back.
8. Display fullname, email address of .net students who completed batch 6 months back.
9. Display details of students who belonged to batch with less than 10 students.
10. Display rcptno, fullname, batchcode, amount, paydate for students who joined into Oracle course.
11. Display course for which we have any batch with more than 10 students.
12. Display batches for which the total amount collected is more than 20000.
13. Display students who did not join on the date of starting of the batch.
14. Display batches with top 3 highest no. Of students.
15. Update amount in receipt 200 with total amount for course in which student joined.