Mini Project - CT2

Group Number: CT2 Project Group - 5 (SQL)

Team Members

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In [1]:
```
# pip install mysql-connector-python
```

In [2]:
```
import mysql.connector
import pandas as pd
```

In [3]:
```
# to be configured
mydb = mysql.connector.connect(
  host="hostname", # hostname of the database
  user="username", # username of the database
  password="password" # password of the database
)

mycursor = mydb.cursor()
```

In [4]:
```
# database creation
mycursor.execute("create database buyYourBooks;")
```

In [5]:
```
# to use databse
mycursor.execute("use buyYourBooks;")
```

In [6]:
```
# Book table creation
query = "Create table Book (Bookid varchar(10) primary key, Bookname varchar(20), Category varchar(20));"
mycursor.execute(query)
```

In [7]:
```
# instertion of data in book table

query = [
    "Insert into Book values ('B101', 'Science Revolution', 'Journal');",
"Insert into Book values ('B102', 'Brain Teasers', 'Aptitude');" ,
"Insert into Book values ('B103', 'India Today', 'Magazine');" ,
"Insert into Book values ('B104', 'Tech World', 'Journal');",
"Insert into Book values ('B105', 'Bizz world', 'Magazine');",
"Insert into Book values ('B106', 'The Quests', 'Aptitude');"
]
```

In [8]:
```
for i in query:
    mycursor.execute(i)
    mydb.commit()
```

In [9]:
```
mycursor.execute("select * from book;")
mycursor.fetchall()
```

Out[9]:
```
[('B101', 'Science Revolution', 'Journal'),
 ('B102', 'Brain Teasers', 'Aptitude'),
 ('B103', 'India Today', 'Magazine'),
 ('B104', 'Tech World', 'Journal'),
 ('B105', 'Bizz world', 'Magazine'),
 ('B106', 'The Quests', 'Aptitude')]
```

In [10]:
```
# Customer table creation
query = "create table customer(custid varchar(10) primary key,custname varchar(20));"
mycursor.execute(query)
```

In [11]:
```
# instertion of data in customer table

query = [
    "Insert into customer values('C101', 'Jack'); ",
"Insert into customer values('C102', 'Anne'); ",
"Insert into customer values('C103', 'Jane'); ",
"Insert into customer values('C104', 'Maria');",
]
```

In [12]:
```
for i in query:
    mycursor.execute(i)
    mydb.commit()
```

In [13]:
```
mycursor.execute("select * from customer;")
mycursor.fetchall()
```

Out[13]:
```
[('C101', 'Jack'), ('C102', 'Anne'), ('C103', 'Jane'), ('C104', 'Maria')]
```

In [14]:
```
# Purchase table creation
query = "create table purchase(purchaseid varchar(10) primary key,custid varchar(10) references customer(custid),bookid
mycursor.execute(query)
```

In [15]:
```
# instertion of data in purchase table

query = [
    "Insert into purchase values ('P201','C101', 'B102','2019-12-12');",
"Insert into purchase values ('P202','C102','B103','2019-11-25');",
"Insert into purchase values ('P203','C103', 'B104','2019-12-12');",
"Insert into purchase values ('P204','C104', 'B105','2019-11-25');",
"Insert into purchase values ('P205','C101', 'B101','2019-12-11');",
"Insert into purchase values ('P206','C101', 'B106','2019-12-12');",
]
```

In [16]:
```
for i in query:
    mycursor.execute(i)
    mydb.commit()
```

In [17]:
```
mycursor.execute("select * from purchase;")
mycursor.fetchall()
```

Out[17]:
```
[('P201', 'C101', 'B102', datetime.date(2019, 12, 12)),
 ('P202', 'C102', 'B103', datetime.date(2019, 11, 25)),
 ('P203', 'C103', 'B104', datetime.date(2019, 12, 12)),
 ('P204', 'C104', 'B105', datetime.date(2019, 11, 25)),
 ('P205', 'C101', 'B101', datetime.date(2019, 12, 11)),
 ('P206', 'C101', 'B106', datetime.date(2019, 12, 12))]
```

Requirement 1 : Identify the purchase details of books, that are purchased exactly on different dates by the same customer(s). Write a query to display customer's id and number of such purchases to be displayed as BOOKS for the identified purchase details.

In [18]:
```
query1 = """select custid, count(distinct purchasedate) AS num_of_books
from purchase
group by custid
having count(distinct purchasedate) > 1;"""
```

In [19]:
```
mycursor.execute(query1)
pd.DataFrame(mycursor.fetchall(), columns=['Customer ID', 'Number of books'])
```

Out[19]:

	Customer ID	Number of books
0	C101	2

Requirement 2 : Identify the purchase details of books, where the books of the same category are purchased by different customers on different dates. Write a query to display customer's id and title of the book for the identified purchase details.

In [20]:
```
query2 = """select p.custid, b.Bookname
from purchase p
join customer c on p.custid = c.custid
join Book b on p.Bookid = b.Bookid
where b.Category in (
    select b1.Category
    from Book b1
    join purchase p1 on b1.Bookid = p1.Bookid
    group by b1.Category
    having count(distinct p1.custid) > 1 and count(distinct p1.purchasedate) > 1
)
order by p.custid;"""
```

In [21]:
```
mycursor.execute(query2)
pd.DataFrame(mycursor.fetchall(), columns=['Customer ID', 'Title of the book'])
```

Out[21]:

	Customer ID	Title of the book
0	C101	Science Revolution
1	C103	Tech World

Requirement 3 : Identify the purchase details of books, where the book is purchased on the same date, exactly on the date Anne has purchased the book. Write a query to display customer's name and title of the book for the identified purchase details. Do NOT display details of Anne in the query result.

In [22]:
```
query3 = """select c.custname, b.Bookname
from customer c
join purchase p on c.custid = p.custid
join Book b on p.Bookid = b.Bookid
where p.purchasedate = (
    select purchasedate
    from purchase
    where custid = (
        select custid
        from customer
        where custname = 'Anne'
    )
)
and c.custname != 'Anne';"""
```

In [23]:
```
mycursor.execute(query3)
pd.DataFrame(mycursor.fetchall(), columns=['Customer Name', 'Title of the book'])
```

Out[23]:

	Customer Name	Title of the book
0	Maria	Bizz world

In [24]:
```
mydb.close()
```