




### Problem Statement:

Q001flisdb: Write a SQL statement to find the name of the manager of the team: 'All Stars'.[Database: FLIS] flisdb: 

This assignment has public test cases. Please click on "Test Run" button to see the status of public test cases. Assignment will be evaluated only after submitting using "Submit" button below. If you only test run the program, your assignment will not be graded and you will not see your score after the deadline.

Zip 

AA + -   




```
1
2 select managers.name
3 from managers , teams
4 where managers.team_id = teams.team_id and teams.name = 'All Stars'|
```

### Problem Statement:

Q001flisdb: Write an SQL statement to find the names of all teams.[Database: FLIS] flisdb:

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Zip 

AA + -   

```
1 select name
2 from teams|
```

Q001lisdb: Write an SQL statement to find the titles of books authored by an author having first name as 'Joh Paul' and last name as 'Mueller'.[Database: LIS] lisdb:

This assignment has public test cases. Please click on "Test Run" button to see the status of public test cases. Assignment will be evaluated only after submitting using "Submit" button below. If you only test run the program, your assignment will not be graded and you will not see your score after the deadline.

Zip 

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```
1 select book_catalogue.title
2 from book_authors,book_catalogue
3 where book_authors.isbn_no = book_catalogue.isbn_no and author_fname = 'Joh Paul' and author_lname = 'Mueller'|
```

Q001lisdb: Write a SQL statement to display the first name and the last name of students (student\_fname, student\_lname) pursuing 'PG' courses.[Database: LIS] lisdb:

**This assignment has public test cases. Please click on "Test Run" button to see the status of public test cases. Assignment will be evaluated only after submitting using "Submit" button below. If you only test run the program, your assignment will not be graded and you will not see your score after the deadline.**

Zip 

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```
1 select s.student_fname,s.student_lname
2 from students s,members m
3 where s.roll_no = m.roll_no and m.member_type = 'PG'
```

**Problem Statement:**

Q001lisdb: Write a SQL statement to find the titles of books published by 'McGraw Hill Education'.[Database: LIS] lisdb:

**This assignment has public test cases. Please click on "Test Run" button to see the status of public test cases. Assignment will be evaluated only after submitting using "Submit" button below. If you only test run the program, your assignment will not be graded and you will not see your score after the deadline.**


Zip 

AA + -    

```
1 select b.title
2 from book_catalogue b
3 where b.publisher = 'McGraw Hill Education'
```

**Problem Statement:**

Q002flisdb: Write an SQL statement to find the name of those managers who became managers after the year '2020'.  
[Database: FLIS] flisdb:

Q003flisdb: Write an SQL statement to find the name and dob of the players whose jersey number is more than '70'.  
[Database: FLIS] flisdb: 

**Problem Statement:**

Q001flisdb: Write an SQL statement to find the names of players of the team: 'All Stars'. [Database: FLIS] flisdb:

.....

Q002lisdb: Write an SQL statement to find the first names and the roll number (student\_fname, roll\_no) of students who belong to the department with department code as 'CS' and who were born after '2002-06-15'. [Database: LIS] lisdb:

### Problem Statement:

Q004lisdb: Write an SQL statement to find faculty ID of the faculty who belongs to the department:'Mechanical Engineering' and joined on '2016-04-08'.[Database: LIS] lisdb:

Q001flisdb: Write a SQL statement to find the names of teams that have played more than 3 matches.[Database: FLIS] flisdb:

**This assignment has public test cases. Please click on "Test Run" button to see the status of public test cases. Assignment will be evaluated only after submitting using "Submit" button below. If you only test run the program, your assignment will not be graded and you will not see your score after the deadline.**

Zip



AA



```
1 select name from teams where team_id in
2 ((select team_id
3  from ((select host_team_id as team_id, count(*) as c
4  from matches
5  group by host_team_id)
6  union all
7  (select guest_team_id as team_id, count(*) as c
8  from matches
9  group by guest_team_id)) as t1
10 group by team_id having sum(c) > 3
11 )|
```

### Problem Statement:

Q001lisdb:Write an SQL statement to find the first name, last name of the faculty of the department having department code as 'ME' and who have issued at least one book, such that there are no duplicate firstname-lastname pairs.

[Database: LIS] lisdb:

**This assignment has public test cases. Please click on "Test Run" button to see the status of public test cases. Assignment will be evaluated only after submitting using "Submit" button below. If you only test run the program, your assignment will not be graded and you will not see your score after the deadline.**

Zip



AA



```
1 select faculty_fname, faculty_lname
2 from faculty natural join members natural join book_issue
3 where faculty.department_code = 'ME'|
```

Q001lisdb:Write an SQL statement to find the number of book-titles issued on 11th August 2021.[Database: LIS] lisdb:

**This assignment has public test cases. Please click on "Test Run" button to see the status of public test cases. Assignment will be evaluated only after submitting using "Submit" button below. If you only test run the program, your assignment will not be graded and you will not see your score after the deadline.**

Zip

AA + - %< [ ]

```
1 select count(accession_no)
2 from book_issue
3 where book_issue.doi = '2021-08-11'
```

### Problem Statement:

Q001lisdb:Write a SQL statement to find the names of faculty (faculty\_fname, faculty\_lname) who did not issue any book.[Database: LIS] lisdb:

**This assignment has public test cases. Please click on "Test Run" button to see the status of public test cases. Assignment will be evaluated only after submitting using "Submit" button below. If you only test run the program, your assignment will not be graded and you will not see your score after the deadline.**

Zip

AA + - %< [ ]

```
1 select faculty_fname, faculty_lname
2 from faculty
3 where faculty.id not in
4 (select members.id
5 from members natural join book_issue
6 where members.id is not null)
```

Q001lisdb: Write a SQL statement to find the unique book titles which are issued to 'PG' students but not to 'UG' students .[Database: LIS] lisdb:

**This assignment has public test cases. Please click on "Test Run" button to see the status of public test cases. Assignment will be evaluated only after submitting using "Submit" button below. If you only test run the program, your assignment will not be graded and you will not see your score after the deadline.**

Zip

AA + - %< [ ]

```
1 select distinct(title)
2 from book_catalogue natural join book_copies natural join book_issue natural join members
3 where members.member_type = 'PG'
4 except
5 select distinct(title)
6 from book_catalogue natural join book_copies natural join book_issue natural join members
7 where members.member_type = 'UG'
```

Q003flisdb: Write an SQL statement to find the match number of the match held on '2020-05-21' and the name of the fourth referee who refereed that match. Print match\_num first, followed by respective fourth referee name. Note: fourth referee is to be obtained from the 'fourth\_referee' attribute.[Database: FLIS] flisdb:

Q005flisdb: Write an SQL statement to find the name and date of birth of the youngest player in the team named 'Arawali'.[Database: FLIS] flisdb:

Q003flisdb: Write an SQL statement to find the name and dob of the players who belongs from the team names 'Amigos' or 'Black Eagles'. flisdb:

Q004lisdb: Write an SQL statement to find roll\_no and member\_no of all students who have issued (borrowed) books between '2021-08-02' and '2021-08-07'. lisdb:

Q001lisdb: Write an SQL statement to find the book titles and the number of copies of the books which has the word 'Database' in their title.[Database: LIS] lisdb:

## Week 7

In this question, you have to write a Python program to print the names of the players and the team of each player of all those players whose jersey number is a prime number.

1. The list should be ordered in reverse alphabetical order of player names. If two or more players have the same name, then further sorting should be done on the team name, again in reverse alphabetical order.
2. The format of output is as given below:  
Name of the player, followed by a comma (,), then a space and then the team name.

For example, if Arjun has jersey number 5 and is playing for All Stars and Pranav, with jersey number 7, is playing for team Amigos, then the output will be:

```
Pranav, Amigos
Arjun, All Stars
```

```
import psycpg2
```

```
import sys
```

```
import os
```

```
database = sys.argv[1] #name of the database is obtained from the command line argument
```

```
user = os.environ.get('PGUSER')
```

```
password = os.environ.get('PGPASSWORD')
```

```
host = os.environ.get('PGHOST')
```

```
port = os.environ.get('PGPORT')
```

```
def is_prime(i):
```

```
    if i==2:
```

```
        return True
```

```
    if i<2:
```

```
        return False
```

```

for j in range(2,i):
    if i%j == 0:
        return False
return True

```

```

conn = psycopg2.connect(database = database, user = user, password = password, host = host, port = port)
cur = conn.cursor()
cur.execute(""" select p.name, p.jersey_no, t.name
              from players p, teams t
              where t.team_id = p.team_id
              order by p.name desc, t.name desc""")
result = cur.fetchall()
for i in result:
    if is_prime(i[1]):
        print(i[0],i[2],sep = " , ")

```

In this problem, you have to write a Python program to print an encoding of the ids of the teams whose jersey colour at home is different from the jersey colour when they play away from home.

- The encoding must be using a shift cipher, which is detailed below.
  - An alphabet is mapped to another alphabet as follows. For a given alphabet  $\alpha$ , let  $pos$  be the position at which  $\alpha$  occurs in the alphabet listing (A at 1, B at 2, .... Z at 26). Then the encoding of  $\alpha$  is the alphabet at the position  $(pos + 7) \bmod 26$ .  
For example, if M is the alphabet, then the position at which M occurs in the alphabet listing is 13. Then, the encoding of M is the alphabet at the position  $(13 + 7) \bmod 26 = 20$ , which is T.
  - For each digit  $\beta$ , the encoding of  $\beta$  is  $(\beta + 7) \bmod 10$ .  
For example, if 3 is the digit, then the encoding of 3 is the number  $(3 + 7) \bmod 10 = 0$ .
- The ids should be listed in the ascending order before performing the encoding.
- Each line in the output of the program must correspond to one row retrieved from the table.

```

import sys
import os
import psycopg2

```

```

database = sys.argv[1]
user = os.environ.get('PGUSER')
password = os.environ.get('PGPASSWORD')
host = os.environ.get('PGHOST')
port = os.environ.get('PGPORT')

```

```

alph = "ABCDEFGHIJKLMNOPQRSTUVWXYZ"

conn = psycopg2.connect(database = database, user = user, password = password, host = host, port = port)

q = "select team_id from teams where jersey_home_color != jersey_away_color order by team_id"

cur = conn.cursor()

cur.execute(q)

res = cur.fetchall()

for r in res:

    #print(r)

    s = ""

    for i in r[0]:

        if i.isalpha():

            s += alph[((alph.index(i)+7)%26)]

        else:

            s += str((int(i)+7)%10)

    print(s)

```

#### Problem Statement:

players			
	player_id	varchar(10)	
	name	varchar(80)	
	dob	date	
	jersey_no	integer	
	team_id	varchar(10)	

Write a Python program to output the jersey number of the player. Player's name is given in a file named 'player.txt' resides in the same folder as python program file.

The output of the python program is only jersey number.

For example, if the jersey number of the player is 99. Then output must be 99 only. Note: No spaces.

```

f = open("player.txt", "r")

pl = f.read()

f.close()

import sys

import os

import psycopg2

```

```

database = sys.argv[1]

```

```
user = os.environ.get('PGUSER')
```

```
password = os.environ.get('PGPASSWORD')
```

```
host = os.environ.get('PGHOST')
```

```
port = os.environ.get('PGPORT')
```

```
conn = psycopg2.connect(database = database, user = user, password = password, host = host, port = port)
```


```
c = conn.cursor()
```

```
c.execute("select jersey_no from players where name = %s",(pl,))
```

```
res = c.fetchall()
```

```
print(res[0][0])
```

#### Problem Statement:

students	
student_fname	varchar(80)
student_lname	varchar(80)
 roll_no	varchar(20)
department_code	varchar(4)
gender	varchar(1)
dob	date
degree	varchar(80)
mobile_no	numeric(10)

Write a Python program to print the roll number of the student. Student's first name is given in a file named 'name.txt' resides in the same folder as python program file.

The output of the python program is only roll number.

For example, if the first name of the student is 'Vikas'. Then output must be CS01 only. Note: No spaces.

```
import psycopg2
```

```
import os
```

```
import sys
```

```
database = sys.argv[1]
```

```
user = os.environ.get('PGUSER')
```

```
password = os.environ.get('PGPASSWORD')
```

```
host = os.environ.get('PGHOST')
```

```
port = os.environ.get('PGPORT')
```

```
f = open("name.txt","r")
```

```
n = f.read()
```

```
f.close
```



```

conn = psycopg2.connect(database=database,user=user,password=password,host=host,port=port)

c = conn.cursor()

c.execute("""select roll_no from students where students.student_fname = %s""",(n,))

res = c.fetchall()

print(res[0][0])

```

#### Problem Statement:

teams		
	team_id	varchar(10)
	name	varchar(80)
	city	varchar(80)
	playground	varchar(80)
	jersey_home_color	varchar(80)
	jersey_away_color	varchar(80)

write a Python program to print the playground of the given team id. team\_id is given in a file named 'team.txt' resides in the same folder as python program file.

- The output of the python program is only playground name.
- For example, if the team\_id is 'T0002' . Then output must be **Villa Park** only

```

import psycopg2

import sys

import os

```

```

database = sys.argv[1]

user = os.environ.get('PGUSER')

password = os.environ.get('PGPASSWORD')

host = os.environ.get('PGHOST')

port = os.environ.get('PGPORT')

```

```

f = open("team.txt","r")

t = f.read()

f.close()

```

```

conn = psycopg2.connect(database= database,user=user, password= password,host=host,port=port)

c= conn.cursor()

c.execute(""" select playground from teams where teams.team_id = %s""",(t,))

res = c.fetchall()

print(res[0][0])

```

Problem Statement:

Write a Python program to print the student's first name, the corresponding department name and the respective year of date of birth, if the year is even then print "Even" or else "Odd".

Student's first name is given in a file named 'name.txt' resides in the same folder as python program file.

The output of the python program is only student's first name, the corresponding department name and year of date of birth, if the year is even then "Even" or else "Odd".

For example, 'Suman' and 'Computer Science' is the name and department name of the student. '2002' is the year he was born in. '2002' is even. Then, the final output will be **Suman,Computer Science,Even** only. Note: No spaces.

For example, 'Vinod' and 'Electrical Engineering' is the name and department name of the student. '2003' is the year he was born in. '2003' is not even. Then, the final output will be **Vinod,Electrical Engineering,Odd** only. Note: No spaces.

```
import psycopg2
import sys
import os

f = open("name.txt","r")
n = f.read()
f.close()

database = sys.argv[1]
user = os.environ.get('PGUSER')
password = os.environ.get('PGPASSWORD')
host = os.environ.get('PGHOST')
port = os.environ.get('PGPORT')

def status(i):
    if i%2 == 0:
        print("Even")
    else:
        print('Odd')

con = psycopg2.connect(database=database,user=user,password=password,host=host,port=port)
c= con.cursor()

c.execute("""select d.department_name,s.dob from departments d, students s where d.department_code =
s.department_code and s.student_fname = %s""",(n,))

res = c.fetchall()

print(n, end=',')

print(res[0][0],end=',')

status(res[0][1].year)
```

In this question, you must write a Python program to output the name of the main referee for a given match date (in yyyy-mm-dd format). The input to your program is a file named “**date.txt**” that has the match date as the first word of the file. Your program must assume that **date.txt** resides in the same folder as your Python program.

The output name has to be formatted as follows. The last name is displayed followed by the initials of the first name, then a full stop, a space and then the initials of the middle name (if the middle name exists), followed by a full stop.

- For example, if the name of the main referee is “Kennedy Sapam”, the output must be “Sapam K.”
- If the name of the main referee is “Asit Kumar Sarkar”, the output must be “Sarkar A. K.”

```
import psycopg2,os,sys
```

```
f = open('date.txt','r')
```

```
name = f.read()
```

```
database = sys.argv[1]
```

```
user = os.environ.get('PGUSER')
```

```
password = os.environ.get('PGPASSWORD')
```

```
host = os.environ.get('PGHOST')
```

```
port = os.environ.get('PGPORT')
```

```
conn=None
```

```
try:
```

```
    conn = psycopg2.connect(database=database,user=user,password=password,host=host,port=port)
```

```
    cur = conn.cursor()
```

```
    cur.execute("SELECT r.name FROM referees r, match_referees mr, matches m WHERE r.referee_id = mr.referee AND  
mr.match_num = m.match_num AND m.match_date = %s", (name,))
```

```
    result = cur.fetchall()
```

```
    for i in result:
```

```
        str = i[0].split()
```

```
        l = len(str)
```

```
        print(str[-1],end=' ')
```

```
        for x in str[:-1]:
```

```
            print(x[0]+' ',end='')
```

```
    cur.close()
```

```
except(Exception,psycopg2.DatabasError) as error:
```

```
    print(error)
```

```
finally:
```

```
    if conn is not None:
```

```
        conn.close()
```

In this question, you must write a Python program to find the cosine of a number obtained from performing a computation on a value retrieved from the database.

1. Find the sum of scores of all host teams satisfying the following conditions.
  - a. `host_team_score > guest_team_score`
  - b. name of the host team starts with the character given in the input file '`parameter.txt`'. You have to read the character from the file and use it in your query to retrieve the expected sum.Your program must assume that `parameter.txt` resides in the same folder as your Python program.
2. Let this sum be denoted by 'S'. Compute  $X = S * 10$ .
3. Assuming that X is a value in radians, convert it into degrees. That is, let  $X\_deg = X * (pi/180)$ .
4. Then, using the `math` library in Python, find `cos(X_deg)` correct up to two decimal places, where `cos` denotes the mathematical trigonometric function *cosine*.
5. For example, if the sum of scores of all host teams satisfying the given conditions is 5, then the output is `round(cos(5*10*(pi/180)),2)`.

```
import psycopg2
import sys
import os
import math

conn=None

f=open('parameter.txt','r')

s=f.readline()

conn= psycopg2.connect(database=sys.argv[1],user=os.environ.get('PGUSER'),
password=os.environ.get('PGPASSWORD'),host=os.environ.get('PGHOST'),port=os.environ.get('PGPORT'))

curr=conn.cursor()

curr.execute("select sum(host_team_score) from matches where host_team_score > guest_team_score and host_team_id
in ( select team_id from teams where name like '{}%'".format(s))

row=curr.fetchone()

y=int(row[0])

p=math.pi

deg=y*10*(p/180)

v=round(math.cos(deg),2)

print(v)

curr.close()

conn.close()
```

### Problem Statement:

book_catalogue	
ISBN_no	varchar(13)
title	varchar(256)
publisher	varchar(80)
year	int

Write a Python program to print the ISBN numbers of books which are published in a given year. Here, the year is obtained as the value of function  $L(x)$  (given after the sample output) at  $x$ . You have to read the value of  $x$  from the input file "**number.txt**", and use it to find the value of  $L(x)$ . Your program must assume that the file **number.txt** resides in the same folder as your Python program.

```
import psycpg2

import os

import sys

f = open('number.txt','r')

x = f.read()

f.close()

year = 2000+4*int(x)+4


database = sys.argv[1]

user = os.environ.get('PGUSER')

password = os.environ.get('PGPASSWORD')

host = os.environ.get('PGHOST')

port = os.environ.get('PGPORT')


conn = None

try:

    conn = psycpg2.connect(database = database,user=user, password = password, host = host, port = port)

    cur = conn.cursor()

    cur.execute("""select ISBN_no from book_catalogue where year = %s""",(year,))

    result = cur.fetchall()

    # print(result)

    for i in result:

        print(i[0])


cur.close()
```

```
except(psycopg2.DatabaseError) as error:
```

```
    print(error)
```

```
finally:
```

```
    if conn is not None:
```

```
        conn.close()
```

### Problem Statement:

Q008university: Write an SQL query to find the names and salaries of those instructors who belong to the 'Languages' department. [Database: University] university:

```
select name,salary
from instructor
where instructor.dept_name = 'Languages'|
```

### Problem Statement:

Q003flisdb: Write an SQL query to find the player IDs of the players whose name starts with 'K'. [Database: FLIS] flisdb:

```
1 select player_id
2 from players p
3 where p.name like 'K%'|
```

### Problem Statement:

Q001flisdb: Write an SQL query to find the match dates where the host team score is not between 1 and 4. [Database: FLIS] flisdb:

```
1 select match_date
2 from matches m
3 where m.host_team_score not between '1' and '4'|
```

Q003flisdb: Write an SQL query to find the names of all players of team 'Amigos'. [Database: FLIS] flisdb:

```
1 select p.name
2 from players p ,teams t
3 where t.name = 'Amigos' and t.team_id = p.team_id|
```

### Problem Statement:

Q008lisdb: Write an SQL query to find the member type and the total number of members in each type. The output should be displayed in descending order of the number of members types. [Database: LIS] lisdb:

```
1 SELECT member_type, COUNT(member_type)
2 FROM members
3 GROUP BY member_type
4 ORDER BY COUNT DESC|
```

**Problem Statement:**

Q009flisdb: Write an SQL query to find the team name and manager name whose manager IDs are not 'M0001', 'M0003' or 'M0005'. [Database: FLIS] flisdb:

```
1 select t.name, m.name from teams t, managers m where t.team_id = m.team_id and m.mgr_id not in ('M0001', 'M0003', 'M0005')
```

**Problem Statement:**

Q003flisdb: Write an SQL query to find player name, team name, team ID, manager name and date of birth of manager of each player whose jersey number is 49.[Database: FLIS] flisdb:

```
1 SELECT p.name,t.name,t.team_id, m.name,m.dob
2 FROM players p, teams t, managers m
3 WHERE p.team_id = t.team_id AND m.team_id = t.team_id AND p.jersey_no = '49'
```

**Problem Statement:**

Q001lisdb: Write an SQL query to find the first name and last name of each faculty who has issued books in July 2021. [Database: LIS] lisdb:

```
select faculty_fname, faculty_lname
from faculty,book_issue c, members m
where m.member_no = c.member_no and m.id = faculty.id and doi between '2021-07-01' and '2021-07-31'
```

**Problem Statement:**

Q002lisdb: Write a SQL query to find the first name of the author of the book 'Java 8 Programming Black Book'. [Database:LIS] lisdb:

**Problem Statement:**

Q002lisdb: Write a SQL query to find the department code and the number of students in each department who are born after '2003-02-09'. [Database: LIS] lisdb:

**Problem Statement:**

Q002lisdb: Write an SQL query to find the book title and publisher of those books whose title consists of 'Science' in it. [Database: LIS] lisdb:

**Problem Statement:**

Q002flisdb: Write an SQL query to find the player name, data of birth, team name and manager name of each player whose jersey number is 59. [Database: FLIS] flisdb:

```
SELECT p.name, p.dob, t.name, m.name
FROM players p, teams t, managers m
WHERE p.team_id = t.team_id AND m.team_id = t.team_id AND p.jersey_no = '59'
```