

(Q.1)

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."

Ans→

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

```
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')
```

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

```
date=f.read()
```

```
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 matches m,match_referees mr,referees r where  
m.match_num=mr.match_num and mr.referee=r.referee_id and match_date=%s""",(date,))
```

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

```
    for i in result:
```

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

```

if(len(name)==2):
    a=name[1]
    b=name[0][0]
    print(a,b+'.')
if(len(name)==3):
    a=name[2]
    b=name[0][0]
    c=name[1][0]
    print(a,b+'.',c+'.')
cur.close()
except(exception,psycopg2.DatabaseError) as error:
    print(error)
finally:
    if conn is not None:
        conn.close()

```

(Q.2)

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)`.

Ams→

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

```
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')
```

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

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

```
name+='%'
```

```
conn=None
```

```
try:
```

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

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

```
    cur.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 %s)""",(name,))
```

```
    result=cur.fetchone()[0]
```

```
    x=result*10
```

```
    x_deg=x*(math.pi/180)
```

```
    final=round(math.cos(x_deg),2)
```

```
    print(final)
```

```
    cur.close()
```

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

```
    print(error)
```

```
finally:
```

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

```
        conn.close()
```