In [1]:
```
import pandas as pd
import numpy as np
from sqlalchemy import create_engine
import warnings
warnings.filterwarnings("ignore")
```

In [3]:
```
import mysql.connector as server1
db1=server1.connect(host='localhost',user='root',password='praveen123',database='hr')
mycursor=db1.cursor()
engine = create_engine("mysql+pymysql://{user}:{pw}@{host}/{db}".format(host="localhost", db='hr', user="root", pw="praveen123"))
```

Task1: To right a query to extract country names and regions

In [4]:
```
Task1='Select country_name,region_name from countries inner join regions on countries.region_id=regions.region_id'
mycursor.execute(Task1)
mycursor.fetchall()
```

Out[4]:
```
[('Belgium', 'Europe'),
 ('Switzerland', 'Europe'),
 ('Germany', 'Europe'),
 ('Denmark', 'Europe'),
 ('France', 'Europe'),
 ('Italy', 'Europe'),
 ('Netherlands', 'Europe'),
 ('United Kingdom', 'Europe'),
 ('Argentina', 'Americas'),
 ('Brazil', 'Americas'),
 ('Canada', 'Americas'),
 ('Mexico', 'Americas'),
 ('United States of America', 'Americas'),
 ('Australia', 'Asia'),
 ('China', 'Asia'),
 ('HongKong', 'Asia'),
 ('India', 'Asia'),
 ('Japan', 'Asia'),
 ('Singapore', 'Asia'),
 ('Egypt', 'Middle East and Africa'),
 ('Israel', 'Middle East and Africa'),
 ('Kuwait', 'Middle East and Africa'),
 ('Nigeria', 'Middle East and Africa'),
 ('Zambia', 'Middle East and Africa'),
 ('Zimbabwe', 'Middle East and Africa')]
```

Task2: To find out countrywise count of employees and push new table into server

In [11]:
```
data=pd.read_sql_query("""Select * from employees inner join departments inner join locations
inner join countries on employees.department_id=departments.department_id and locations.location_id=departments.location_id and countries.country_id=locations.country_id""",db1)
data
```

											...							
3	114	Den	Raphaely	DRAPHEAL	515.127.4561	1994-12-07	PU_MAN	11000.0	NaN	100.0	...	1700	1700	2004 Charade Rd	98199	Seattle	Washington	US
4	115	Alexander	Khoo	AKHOO	515.127.4562	1995-05-18	PU_CLERK	3100.0	NaN	114.0	...	1700	1700	2004 Charade Rd	98199	Seattle	Washington	US
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
101	111	Ismael	Sciarra	ISCIARRA	515.124.4369	1997-09-30	FI_ACCOUNT	7700.0	NaN	108.0	...	1700	1700	2004 Charade Rd	98199	Seattle	Washington	US
102	112	Jose Manuel	Urman	JMURMAN	515.124.4469	1998-03-07	FI_ACCOUNT	7800.0	NaN	108.0	...	1700	1700	2004 Charade Rd	98199	Seattle	Washington	US
103	113	Luis	Popp	LPOPP	515.124.4567	1999-12-07	FI_ACCOUNT	6900.0	NaN	108.0	...	1700	1700	2004 Charade Rd	98199	Seattle	Washington	US
104	205	Shelley	Higgins	SHIGGINS	515.123.8080	1994-06-07	AC_MGR	12000.0	NaN	101.0	...	1700	1700	2004 Charade Rd	98199	Seattle	Washington	US
105	206	William	Gietz	WGIETZ	51hr5.123.8181	1994-06-07	AC_ACCOUNT	8300.0	NaN	205.0	...	1700	1700	2004 Charade Rd	98199	Seattle	Washington	US

In [12]:
```
data=data.loc[:,["employee_id","country_name"]].groupby("country_name").count()
data.insert(loc=0,column="country_name",value=data.index)
data=data.reset_index(drop=True)
data
```

Out[12]:

	country_name	employee_id
0	Canada	2
1	Germany	1
2	United Kingdom	35
3	United States of America	68

In [13]:
```
import mysql.connector as server1
db1=server1.connect(host='localhost',user='root',password='praveen123',database='hr')
mycursor=db1.cursor()
engine = create_engine("mysql+pymysql://{user}:{pw}@{host}/{db}".format(host="localhost", db='hr', user="root", pw="praveen123"))
```

In [14]:
```
data.to_sql( name='Employee_country',con=engine,if_exists='replace',index=False)
```

Out[14]: 4

In [15]:
```
select="select * from employee_country"
mycursor.execute(select)
mycursor.fetchall()
```

Out[15]:
```
[('Canada', 2),
 ('Germany', 1),
 ('United Kingdom', 35),
 ('United States of America', 68)]
```

The above line could not be run in my sytem due to some technical difficulties

Task3: To visually represent country wise employee count

In [16]:
```
import matplotlib.pyplot as plt
```

In [22]:
```
plt.pie(data["employee_id"],labels=data.country_name,autopct="%.2f%%",shadow=True,explode=[0,0,0,0.21]);
print("From below chart we are able to see that most employees come from United states of america")
```

```
From below chart we are able to see that most employees come from United states of america
```