

In [1]:

```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
import warnings
warnings.filterwarnings('ignore')
```

In [5]:

```
visa_data = pd.read_csv("visa.csv")
```

In [6]:

```
visa_data.head()
```

Out[6]:

	Visa_Class	Employer_Name	SOC_Title	Job_Title	Full_Time_Position	Worksite
0	H-1B	Hexaware Technologies Inc.	Software Developers, Applications	Senior Technical Architect	Y	Herndon,, Virginia
1	H-1B	WIPRO LIMITED	Computer Programmers	Programmer Analyst	Y	Texas City, Texas
2	H-1B	Mastech Digital InfoTech, Inc.	Software Developers, Applications	Software Developer	Y	Strongsville, Ohio
3	H-1B	VIRTUSA CORPORATION	Computer Systems Analysts	JAVA ANALYST 2	Y	Hartford, Connecticut
4	H-1B	XTGLOBAL, INC.	Database Administrators	SQL DATABASE ADMINISTRATOR II	Y	Austin, Texas

In [7]:

```
visa_data.tail()
```

Out[7]:

	Visa_Class	Employer_Name	SOC_Title	Job_Title	Full_Time_Position	Wor
826300	H-1B	ESCOBEDO CONSTRUCTION, LP	Software Developers, Systems Software	SOFTWARE DEVELOPMENT	Y	Buda, T
826301	H-1B	The University of Texas at Dallas	Business Teachers, Postsecondary	Assistant Professor of Instruction	Y	Richarc 1
826302	H-1B	NIC INFO TEK INC	Software Developers, Applications	Engineering Lead	Y	Nolens Tenne
826303	H-1B	NIC INFO TEK INC	Software Developers, Applications	Engineering Lead	Y	Nolens Tenne
826304	H-1B	CompassBeauty, Inc.	Computer And Information Systems Managers	Vice President, Engineering	Y	Franc Calif

In [8]:

```
visa_data.shape
```

Out[8]:

(826305, 12)

In [9]:

```
visa_data.columns
```

Out[9]:

```
Index(['Visa_Class', 'Employer_Name', 'SOC_Title', 'Job_Title',  
      'Full_Time_Position', 'Worksite', 'Prevailing_Wage', 'Unit_Of_Pay',  
      'Employer_Location', 'Employer_Country', 'Case_Status', 'Quarter'],  
      dtype='object')
```

In [10]:



```
visa_data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 826305 entries, 0 to 826304
Data columns (total 12 columns):
 #   Column                Non-Null Count  Dtype
---  -
 0   Visa_Class            826305 non-null object
 1   Employer_Name         826303 non-null object
 2   SOC_Title             826303 non-null object
 3   Job_Title             826305 non-null object
 4   Full_Time_Position    826305 non-null object
 5   Worksite              826251 non-null object
 6   Prevailing_Wage       826304 non-null float64
 7   Unit_Of_Pay           826304 non-null object
 8   Employer_Location     826241 non-null object
 9   Employer_Country      826305 non-null object
10   Case_Status           826305 non-null object
11   Quarter               826305 non-null object
dtypes: float64(1), object(11)
memory usage: 75.7+ MB
```

In [11]:



```
visa_data.describe()
```

Out[11]:

Prevailing_Wage	
count	826304.00000
mean	94172.56927
std	40046.33134
min	7.25000
25%	74006.00000
50%	93538.00000
75%	117125.00000
max	431897.00000

In [12]:



```
visa_data.isnull().sum()
```

Out[12]:

```
Visa_Class      0
Employer_Name   2
SOC_Title       2
Job_Title       0
Full_Time_Position  0
Worksite        54
Prevailing_Wage  1
Unit_Of_Pay     1
Employer_Location  64
Employer_Country  0
Case_Status     0
Quarter         0
dtype: int64
```

In [13]:



```
visa_data.dropna(inplace = True)
```

In [14]:



```
visa_data.isnull().sum()
```

Out[14]:

```
Visa_Class      0
Employer_Name    0
SOC_Title       0
Job_Title       0
Full_Time_Position  0
Worksite        0
Prevailing_Wage  0
Unit_Of_Pay     0
Employer_Location  0
Employer_Country  0
Case_Status     0
Quarter         0
dtype: int64
```

In [15]:



```
visa_data['Visa_Class'].unique()
```

Out[15]:

```
array(['H-1B', 'E-3 Australian', 'H-1B1 Singapore', 'H-1B1 Chile'],
      dtype=object)
```

In [16]:

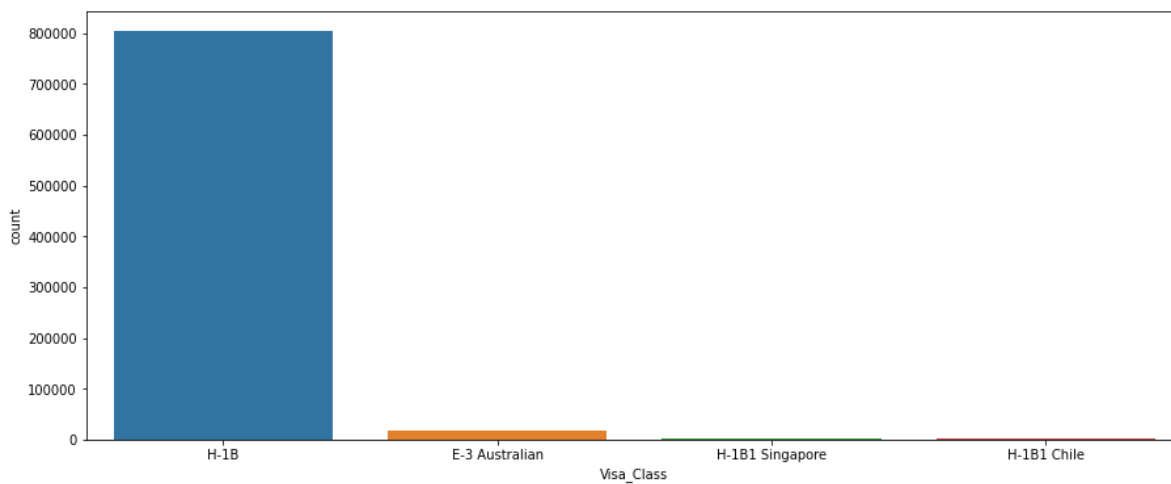
```
visa_data['Visa_Class'].value_counts()
```

Out[16]:

```
H-1B          803613
E-3 Australian  18308
H-1B1 Chile    2314
H-1B1 Singapore 1948
Name: Visa_Class, dtype: int64
```

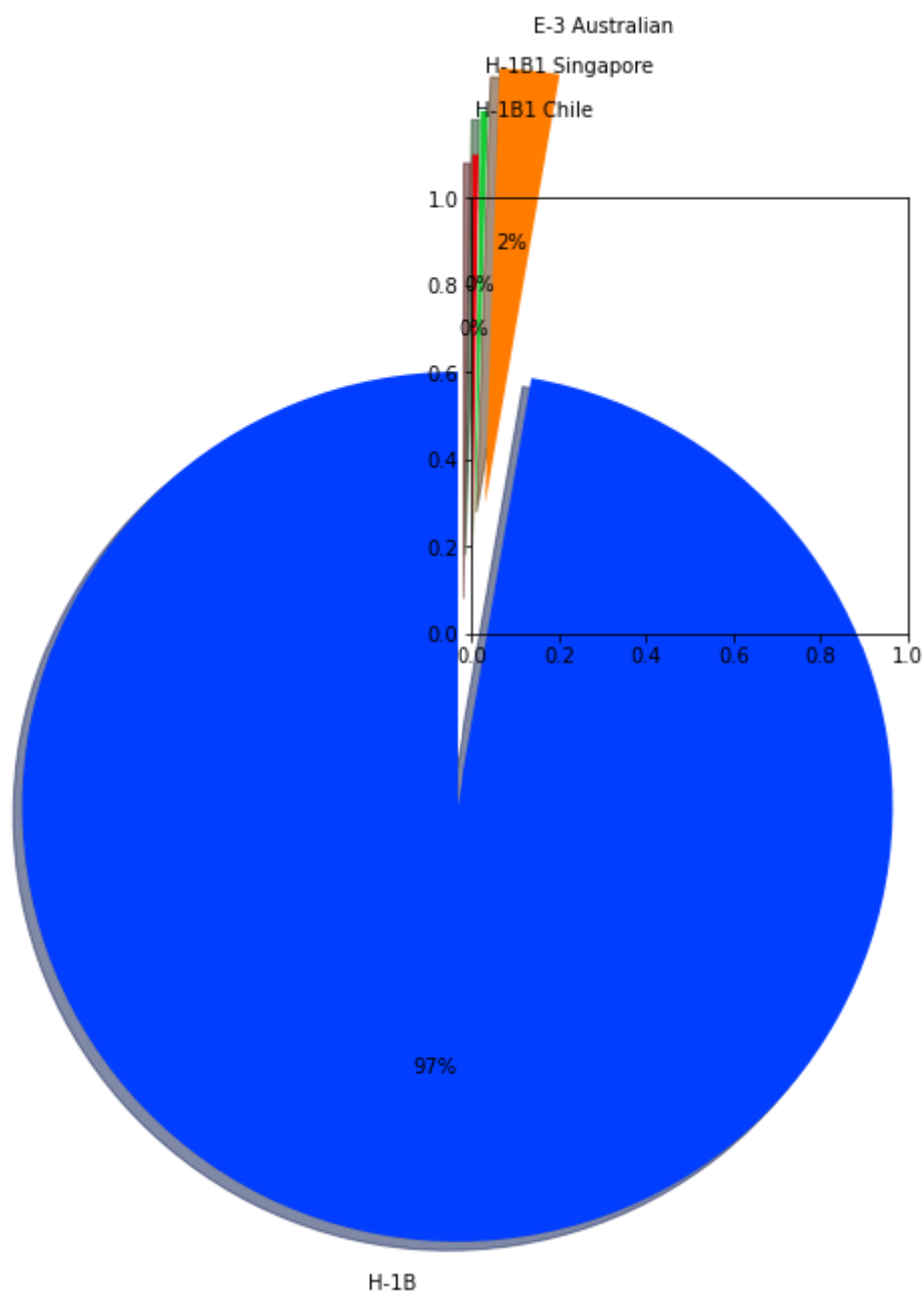
In [18]:

```
plt.figure(figsize=(15,6))
sns.countplot('Visa_Class', data = visa_data)
plt.xticks(rotation = 0)
plt.show()
```



In [21]:

```
explode = [0.4,0.3,0.2, 0.1]
colors = sns.color_palette('bright')
plt.pie(visa_data['Visa_Class'].value_counts(), labels=['H-1B', 'E-3 Australian', 'H-1B1', 'H-1B1 Singapore', 'H-1B1 Chile'],
        colors = colors, autopct = '%0.0f%%', explode = explode, shadow = 'True',
        startangle = 90, frame = 'true')
plt.show()
```



In [22]:

```
visa_data['Employer_Name'].unique()
```

Out[22]:

```
array(['Hexaware Technologies Inc.', 'WIPRO LIMITED',  
      'Mastech Digital InfoTech, Inc.', ...,  
      ' Signature Diagnostics, Inc', 'Signature Diagnostics, Inc ',  
      'Chivico Corp'], dtype=object)
```

In [23]:

```
visa_data['Employer_Name'].value_counts()
```

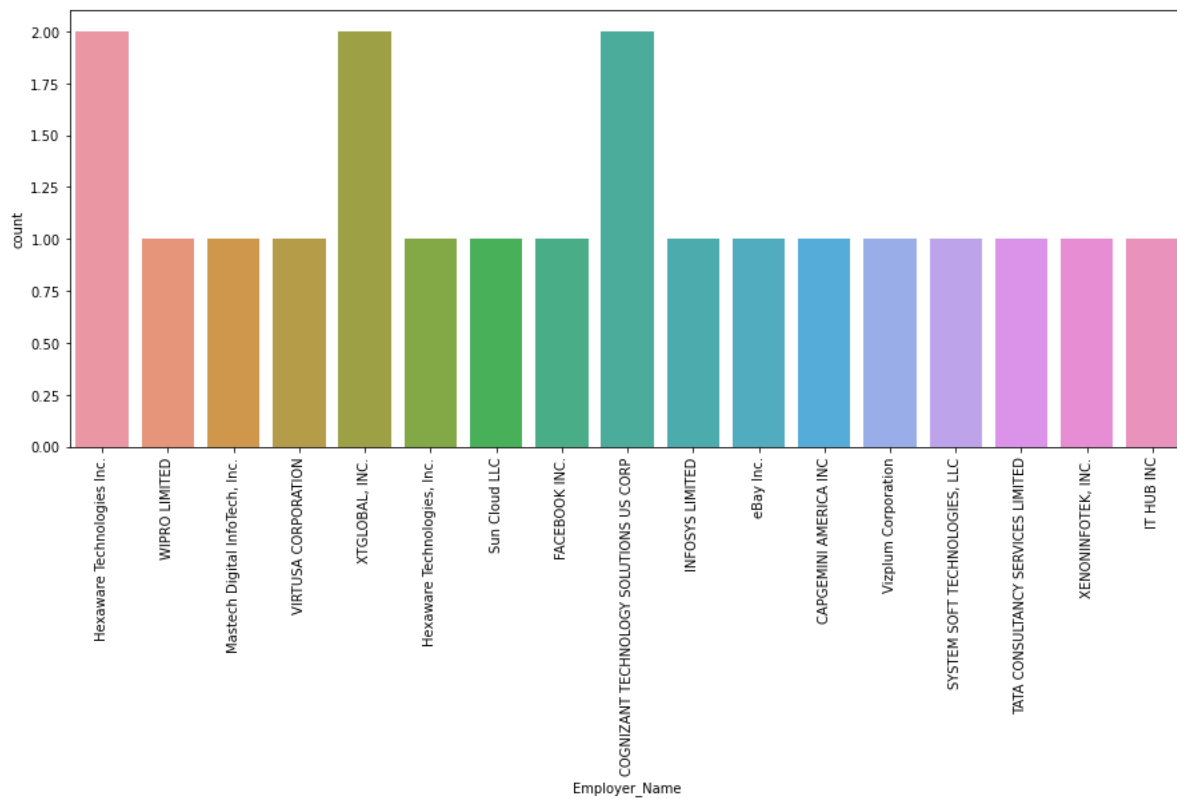
Out[23]:

COGNIZANT TECHNOLOGY SOLUTIONS US CORP	19525
Google LLC	15840
Microsoft Corporation	11763
Ernst & Young U.S. LLP	10281
TATA CONSULTANCY SERVICES LIMITED	8800
...	
Chimera Investment Corporation	1
Patio Paradise, Inc.	1
Flexaworld LP	1
Quinn Racusin & Gazzola Chartered	1
Chivico Corp	1

Name: Employer_Name, Length: 63610, dtype: int64

In [36]:

```
plt.figure(figsize=(15,6))
sns.countplot(visa_data['Employer_Name'].head(20), data = visa_data)
plt.xticks(rotation = 90)
plt.show()
```



In [32]:

```
visa_data['SOC_Title'].unique()
```

Out[32]:

```
array(['Software Developers, Applications', 'Computer Programmers',
      'Computer Systems Analysts', 'Database Administrators',
      'Information Technology Project Managers',
      'Computer Systems Engineers/Architects',
      'Search Marketing Strategists', 'Computer Network Architects',
      'Electronics Engineers, Except Computer', 'Mechanical Engineers',
      'Software Developers, Systems Software',
      'Computer Occupations, All Other', 'Aerospace Engineers',
      'Management Analysts', 'Information Security Analysts',
      'Web Developers', 'Network And Computer Systems Administrators',
      'Software Quality Assurance Engineers And Testers',
      'Computer And Information Systems Managers',
      'Human Resources Specialists', 'Operations Research Analysts',
      'Business Intelligence Analysts', 'Sales Engineers',
      'Data Warehousing Specialists', 'Database Architects',
      'Human Resources Managers', 'Commercial And Industrial Designer
s',
```

In [33]:

```
visa_data['SOC_Title'].value_counts()
```

Out[33]:

Software Developers, Applications	265674
Software Developers, Systems Software	51574
Computer Systems Analysts	47961
Computer Systems Engineers/Architects	25899
Software Quality Assurance Engineers And Testers	20532
...	
Traffic Technicians	1
Data Scientists	1
Software Quality And Assurance Analysts And Testers	1
Medical Secretaries	1
Industrial Safety And Health Engineers.	1

Name: SOC_Title, Length: 829, dtype: int64

In [37]:

```
visa_data['SOC_Title'].value_counts(ascending = False).head(10)
```

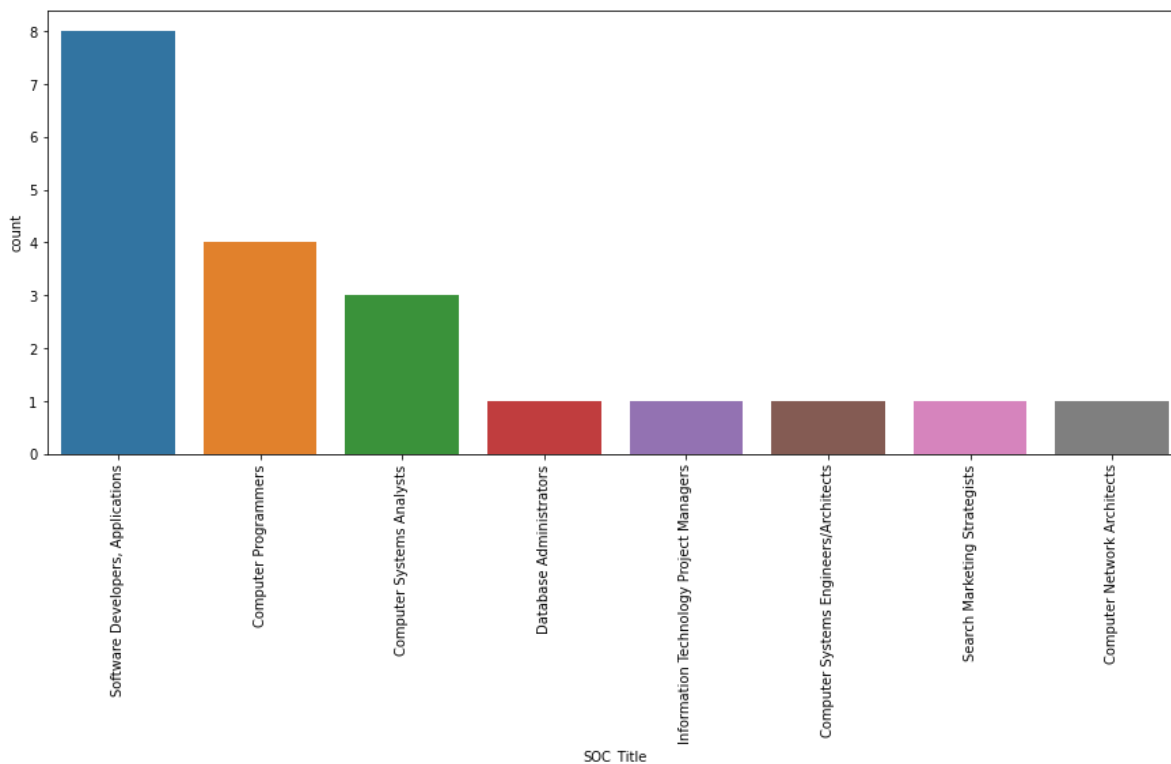
Out[37]:

Software Developers, Applications	265674
Software Developers, Systems Software	51574
Computer Systems Analysts	47961
Computer Systems Engineers/Architects	25899
Software Quality Assurance Engineers And Testers	20532
Information Technology Project Managers	18101
Computer And Information Systems Managers	17479
Mechanical Engineers	15227
Business Intelligence Analysts	15193
Operations Research Analysts	13509

Name: SOC_Title, dtype: int64

In [40]:

```
plt.figure(figsize=(15,6))  
sns.countplot(visa_data['SOC_Title'].head(20), data = visa_data)  
plt.xticks(rotation = 90)  
plt.show()
```



In [41]:



```
visa_data['Job_Title'].unique()
```

Out[41]:

```
array(['Senior Technical Architect', 'Programmer Analyst\t',
      'Software Developer', ..., 'R&D Controls Engineer',
      'SOFTWARE CONFIGURATION ANALYST', 'Senior Associate Producer'],
      dtype=object)
```

In [42]:



```
visa_data['Job_Title'].value_counts()
```

Out[42]:

Software Engineer	32986
Software Developer	23059
Senior Software Engineer	10535
SOFTWARE DEVELOPER	8530
SOFTWARE ENGINEER	8425
...	
Sr. Mgr Data Governance	1
Manager - IT EAO Digital Technologies	1
Head of Platform Services	1
Associate Vice President- Information Security	1
Senior Associate Producer	1

Name: Job_Title, Length: 125923, dtype: int64

In [43]:



```
visa_data['Job_Title'].value_counts(ascending = False).head(10)
```

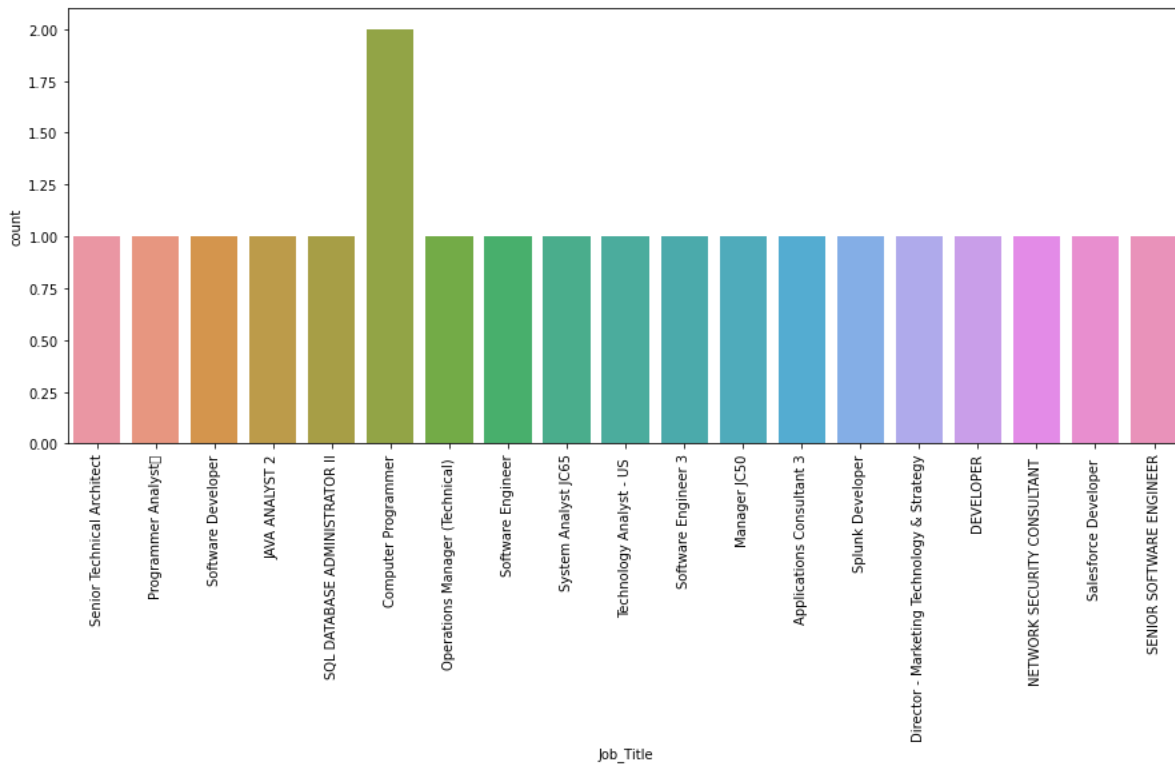
Out[43]:

Software Engineer	32986
Software Developer	23059
Senior Software Engineer	10535
SOFTWARE DEVELOPER	8530
SOFTWARE ENGINEER	8425
Senior Systems Analyst JC60	7067
Manager JC50	6722
Assistant Professor	6108
Associate	3486
Data Scientist	3341

Name: Job_Title, dtype: int64

In [44]:

```
plt.figure(figsize=(15,6))
sns.countplot(visa_data['Job_Title'].head(20), data = visa_data)
plt.xticks(rotation = 90)
plt.show()
```



In [45]:

```
visa_data['Full_Time_Position'].unique()
```

Out[45]:

```
array(['Y', 'N'], dtype=object)
```

In [46]:

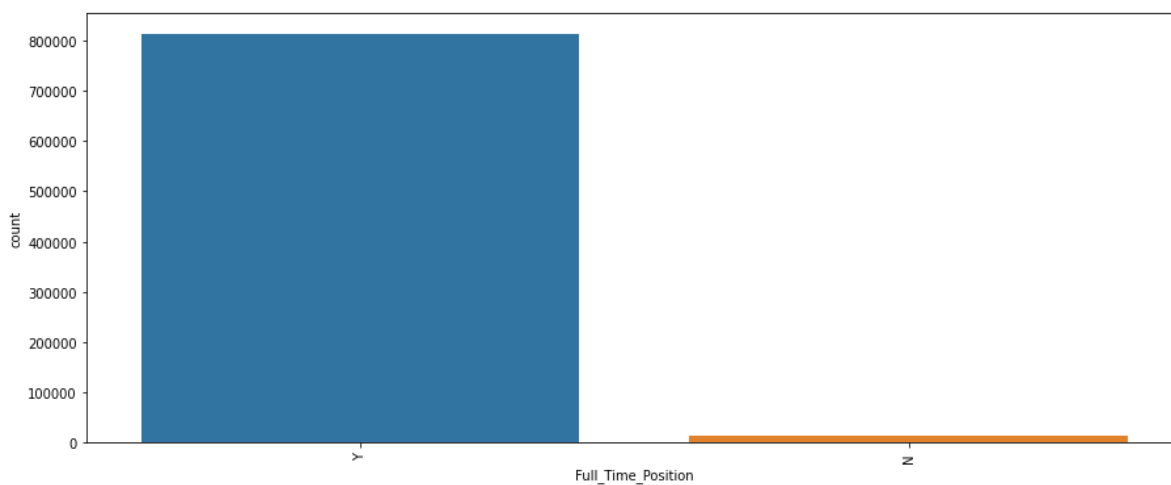
```
visa_data['Full_Time_Position'].value_counts()
```

Out[46]:

```
Y      813095  
N       13088  
Name: Full_Time_Position, dtype: int64
```

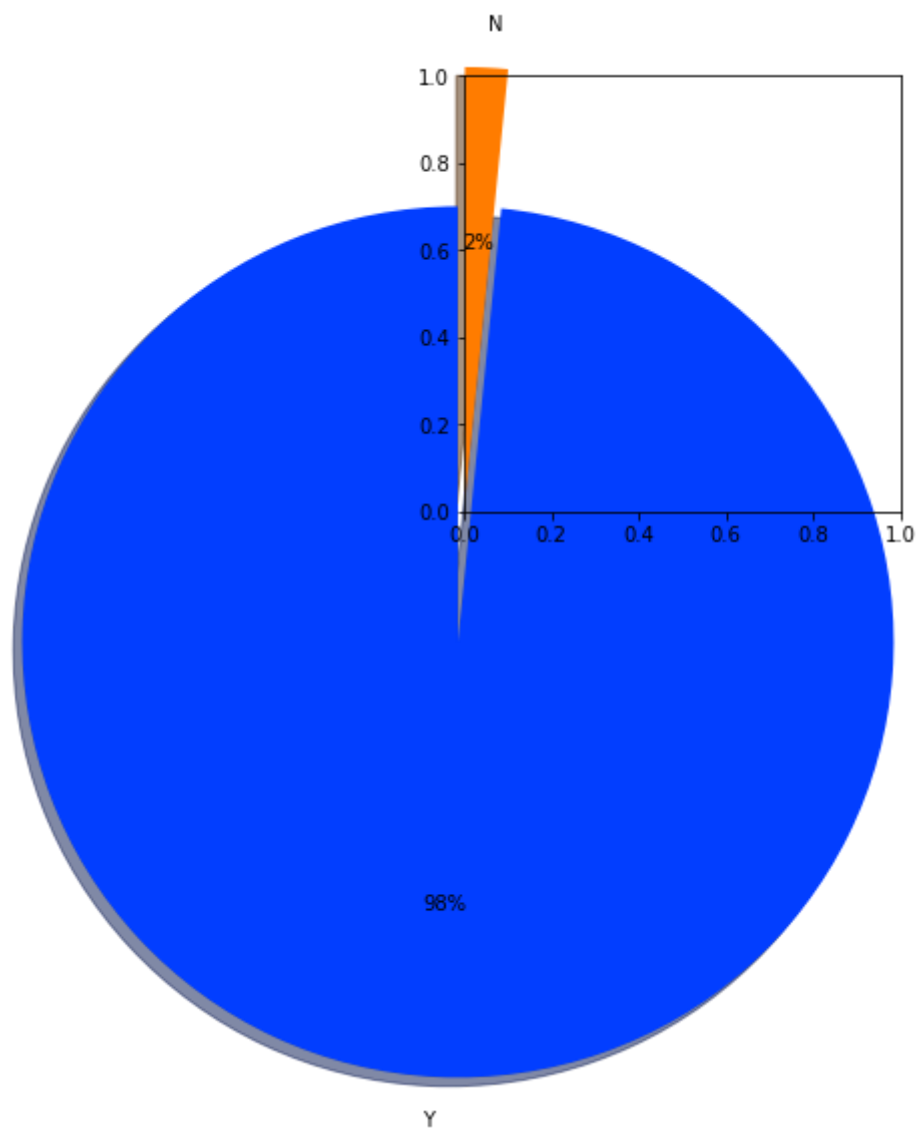
In [47]:

```
plt.figure(figsize=(15,6))  
sns.countplot(visa_data['Full_Time_Position'], data = visa_data)  
plt.xticks(rotation = 90)  
plt.show()
```



In [48]:

```
explode = [0.3, 0.02]  
colors = sns.color_palette('bright')  
plt.pie(visa_data['Full_Time_Position'].value_counts(), labels=['Y', 'N'],  
        colors = colors, autopct = '%0.0f%%', explode = explode, shadow = 'True',  
        startangle = 90, frame = 'true')  
plt.show()
```



In [49]:

```
visa_data['Case_Status'].unique()
```

Out[49]:

```
array(['Certified', 'Certified - Withdrawn', 'Denied', 'Withdrawn'],  
      dtype=object)
```

In [50]:

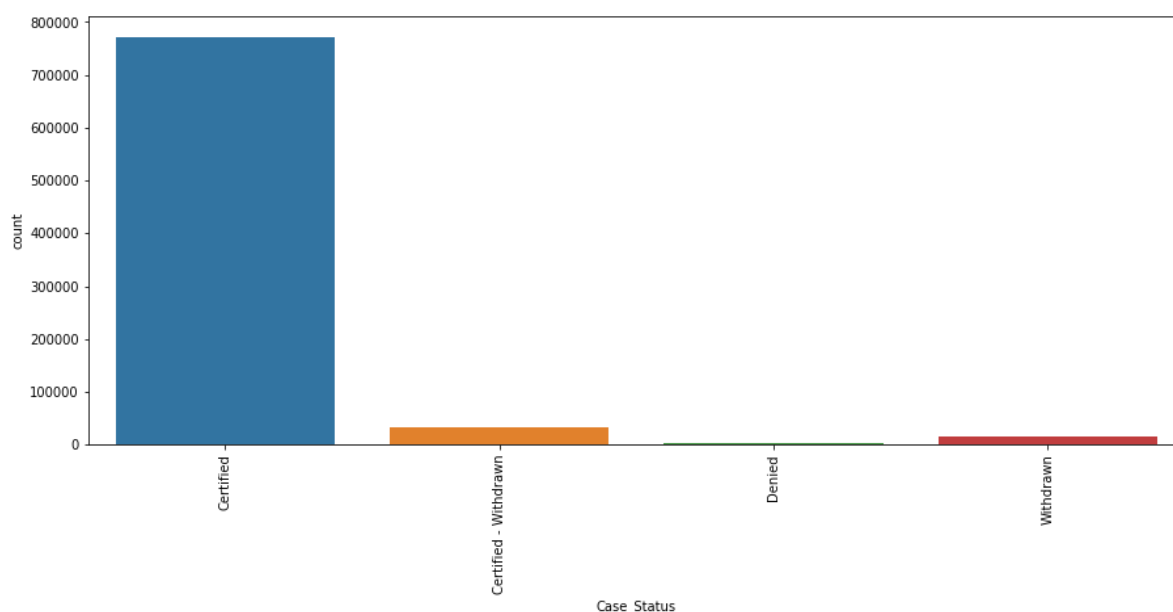
```
visa_data['Case_Status'].value_counts()
```

Out[50]:

```
Certified          772260  
Certified - Withdrawn  33616  
Withdrawn          15942  
Denied             4365  
Name: Case_Status, dtype: int64
```

In [51]:

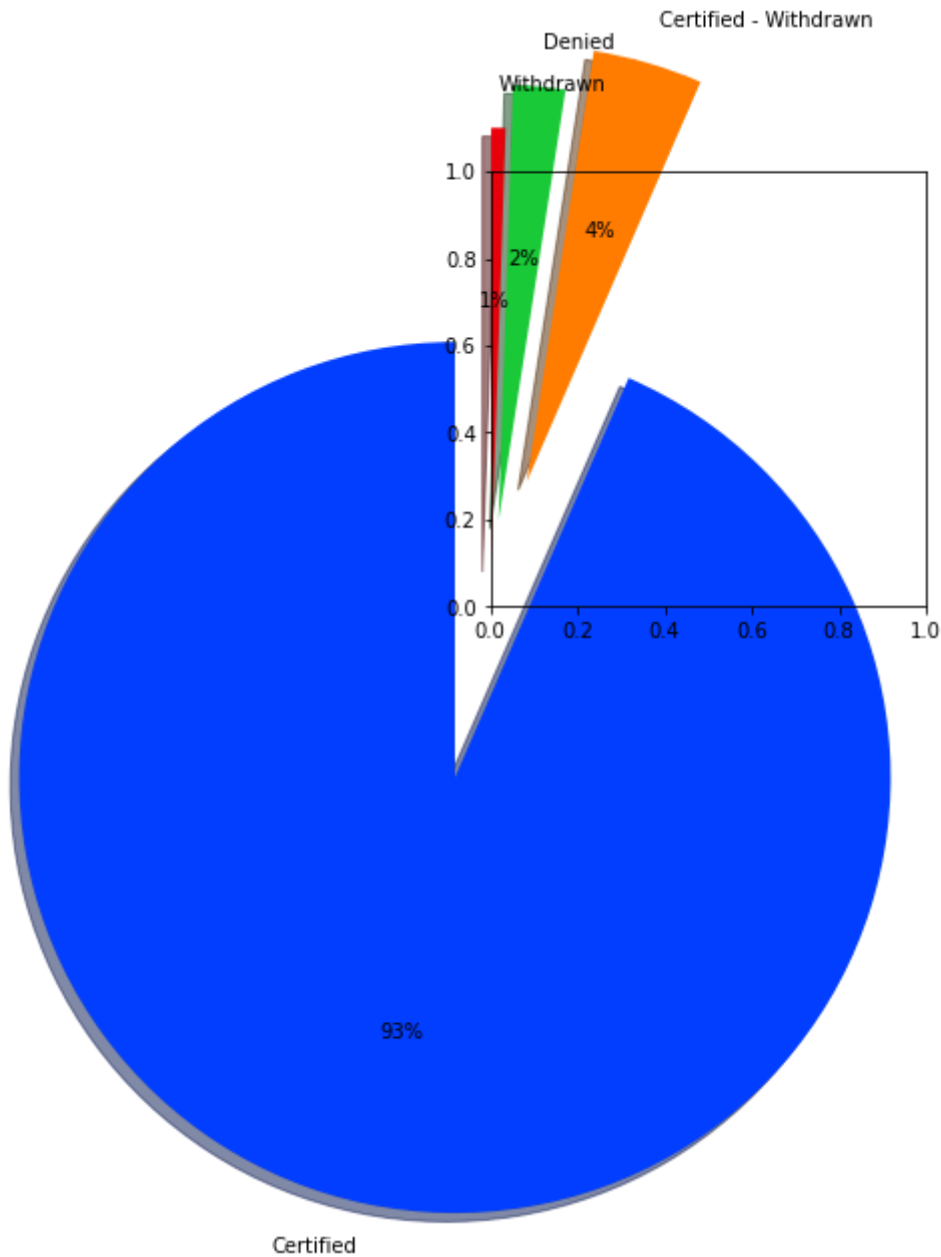
```
plt.figure(figsize=(15,6))  
sns.countplot(visa_data['Case_Status'], data = visa_data)  
plt.xticks(rotation = 90)  
plt.show()
```



In [54]:



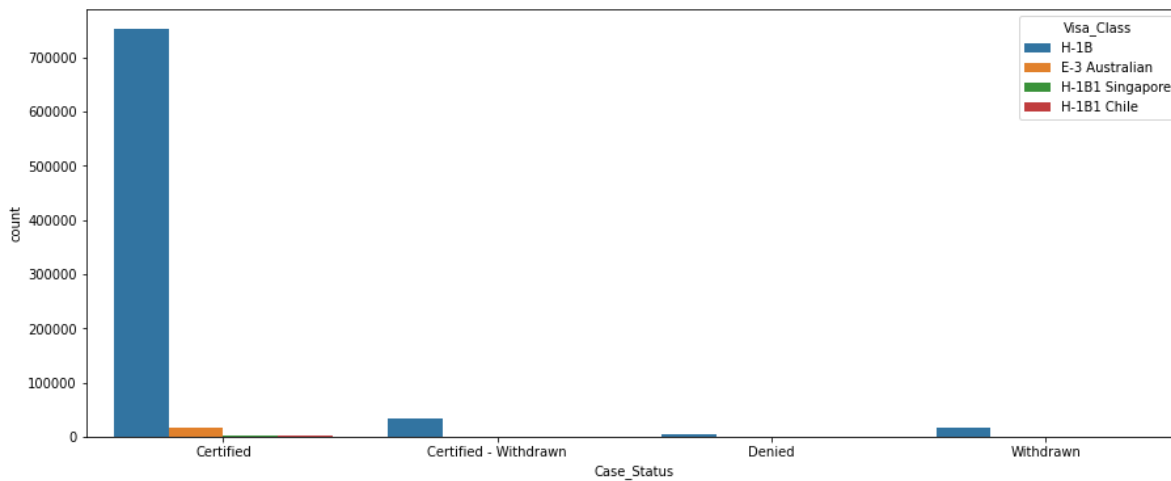
```
explode = [0.4, 0.3, 0.2, 0.1]
colors = sns.color_palette('bright')
plt.pie(visa_data['Case_Status'].value_counts(), labels= ['Certified', 'Certified - With',
               colors = colors, autopct = '%0.0f%%', explode = explode, shadow = 'True',
               startangle = 90, frame = 'true')
plt.show()
```



In [52]:



```
plt.figure(figsize=(15,6))
sns.countplot(hue = 'Visa_Class', x = 'Case_Status', data = visa_data )
plt.xticks(rotation = 0)
plt.show()
```



In [55]:



```
visa_data['Unit_Of_Pay'].unique()
```

Out[55]:

```
array(['Year', 'Hour', 'Bi-Weekly', 'Month', 'Week'], dtype=object)
```

In [56]:



```
visa_data['Unit_Of_Pay'].value_counts()
```

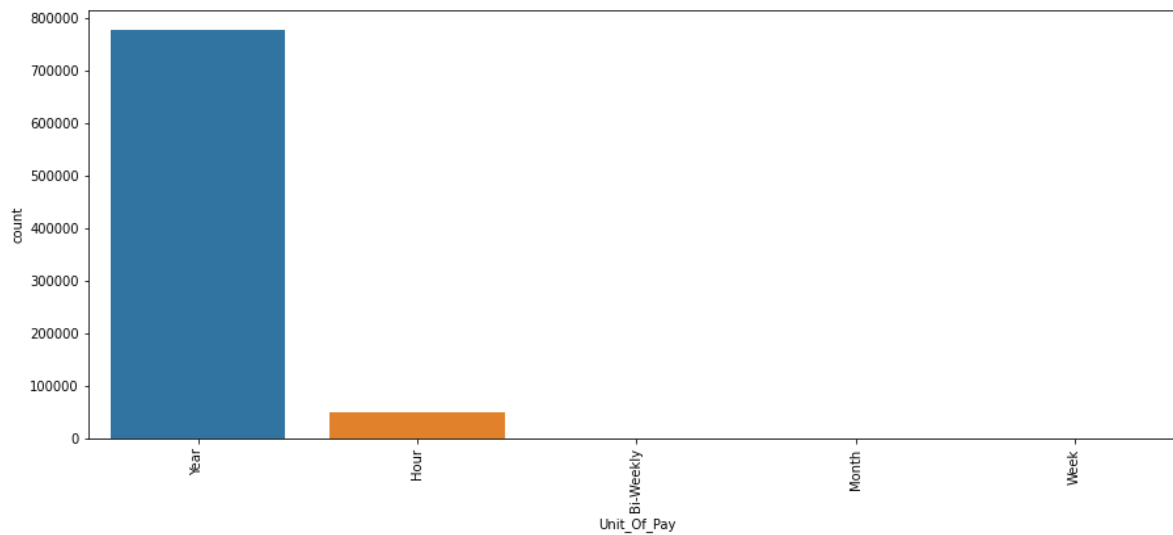
Out[56]:

```
Year      776059
Hour      49348
Month      500
Week       139
Bi-Weekly  137
Name: Unit_Of_Pay, dtype: int64
```

In [57]:

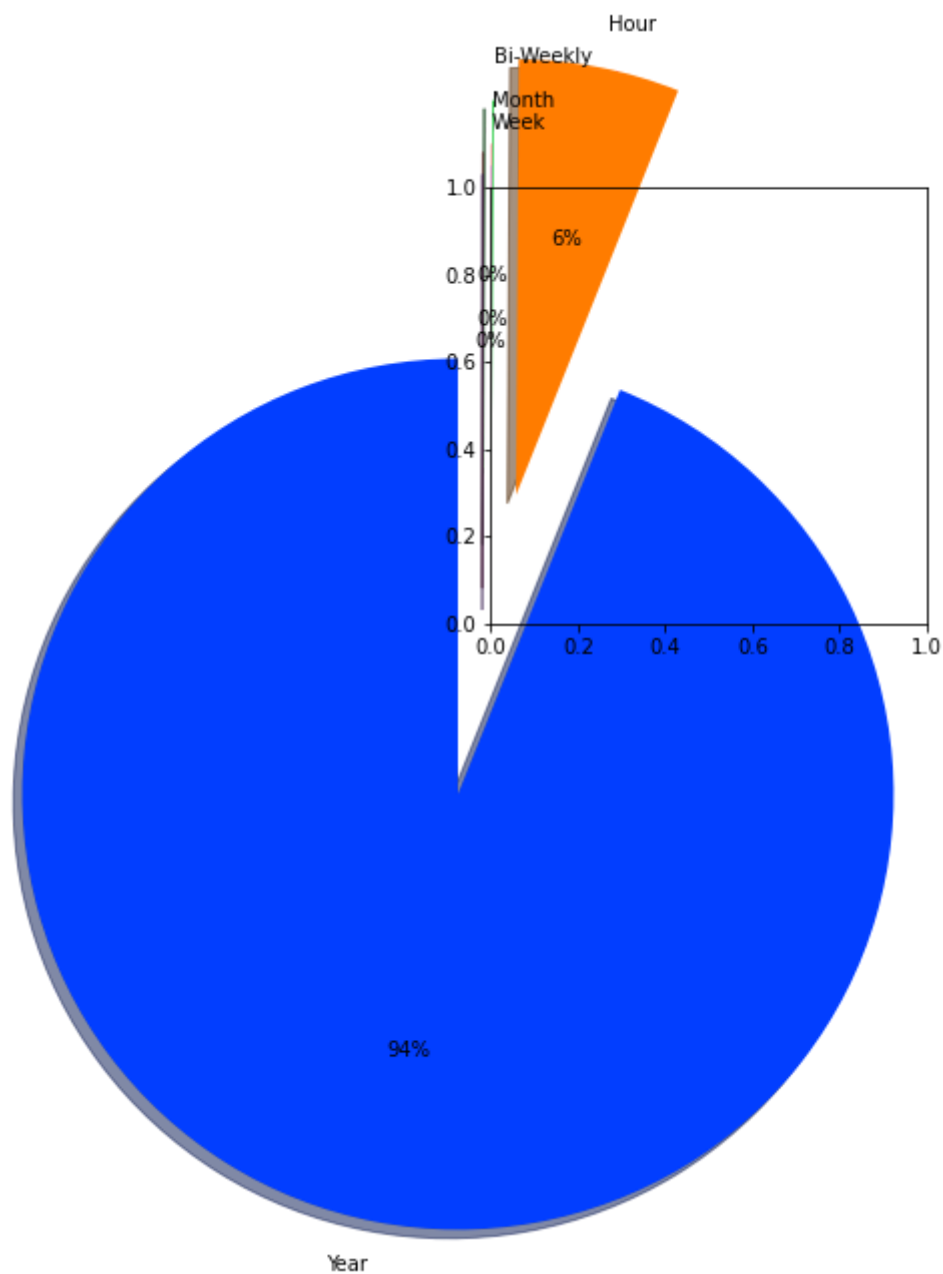


```
plt.figure(figsize=(15,6))
sns.countplot(visa_data['Unit_Of_Pay'], data = visa_data)
plt.xticks(rotation = 90)
plt.show()
```



In [59]:

```
explode = [0.4, 0.3, 0.2, 0.1, 0.05]  
colors = sns.color_palette('bright')  
plt.pie(visa_data['Unit_Of_Pay'].value_counts(), labels= ['Year', 'Hour', 'Bi-Weekly',  
    colors = colors, autopct = '%0.0f%%', explode = explode, shadow = 'True',  
    startangle = 90, frame = 'true')  
plt.show()
```



In [60]:



```
visa_data['Quarter'].unique()
```

Out[60]:

```
array(['Q1', 'Q2', 'Q3', 'Q4'], dtype=object)
```

In [61]:



```
visa_data['Quarter'].value_counts()
```

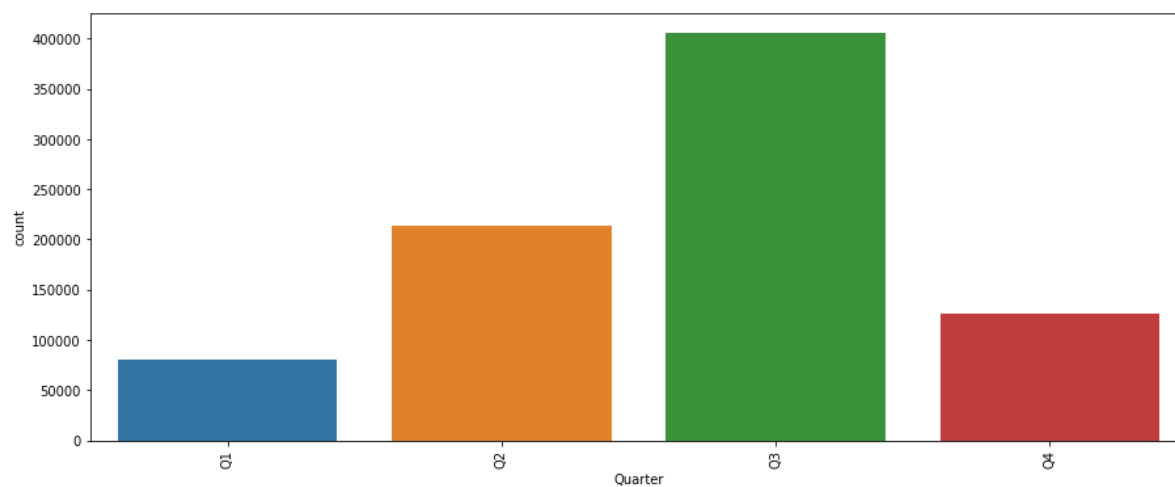
Out[61]:

```
Q3    405570
Q2    213452
Q4    126550
Q1     80611
Name: Quarter, dtype: int64
```

In [62]:

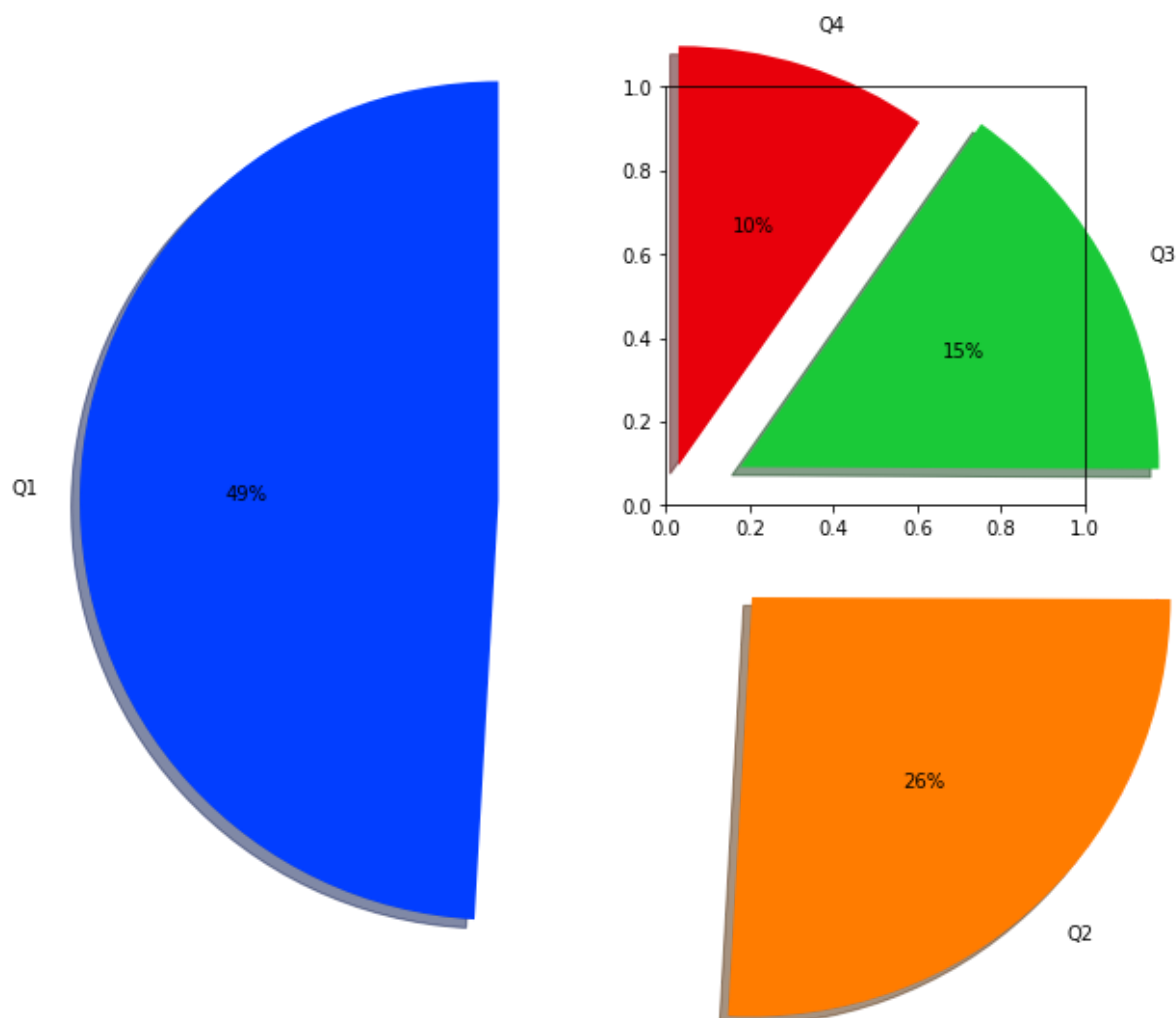


```
plt.figure(figsize=(15,6))  
sns.countplot(visa_data['Quarter'], data = visa_data)  
plt.xticks(rotation = 90)  
plt.show()
```



In [63]:

```
explode = [0.4, 0.3, 0.2, 0.1]
colors = sns.color_palette('bright')
plt.pie(visa_data['Quarter'].value_counts(), labels= ['Q1', 'Q2', 'Q3', 'Q4'],
        colors = colors, autopct = '%0.0f%%', explode = explode, shadow = 'True',
        startangle = 90, frame = 'true')
plt.show()
```



In [64]:



```
plt.figure(figsize=(15,6))  
sns.countplot(hue = 'Visa_Class', x = 'Quarter', data = visa_data )  
plt.xticks(rotation = 0)  
plt.show()
```

