Data Visualization
Assignment

Background:

The data sets for analysis is an insurance sector data in which premiums and claims information is provided for each policy holder for all the regions and zones.

Questions

1. Import Premium and Claim data and merge both data sets into one data.
2. For each zone, obtain mean Premium and plot a bar chart showing mean Premium over zone.
3. Obtain stacked bar chart for all Zones over Sub plans by Premium amount.
4. Obtain heat map of Plan and Zone with respective average Premium.
5. Obtain pie chart for Premium amount across different sub plans.

Solutions

#Q1 Import Premium and Claim data and merge both data sets into one data
##A.

```
import pandas as pd
premium = pd.read_csv("Premiums.csv")
claim = pd.read_csv("Claims.csv")
master = pd.merge(premium,claim,how='left')
```

#Q2 For each zone, obtain mean Premium and plot a bar chart showing mean Premium over zone
##A.

```
meanpremium = master.groupby('ZONE_NAME')['Premium'].mean()
meanpremium

import matplotlib.pyplot as plt
plt.figure(); meanpremium.plot.bar(title="SIMPLE BAR CHART (Total Premium - Zone)",
color="#1B9E77"); plt.xlabel("ZONE"); plt.ylabel("AVERAGE PREMIUM")
```

#Q3 Obtain stacked bar chart for all Zones over Sub plans by Premium amount
##A.

```
amount=pd.pivot_table(premium, index=['Sub_Plan'], columns=['ZONE_NAME'], values=['Premium'],
aggfunc='count')
amount
plt.figure(); amount.plot.bar(title='STACKED BAR CHART',
stacked=True,color=["green","orange","cadetblue"]); plt.xlabel('Sub_Plan'); plt.ylabel('No of policies')
```

#Q4 Obtain heat map with Plan, ZONE_NAME and respective Premium

##A.

```
agg=pd.pivot_table(premium, index=['ZONE_NAME'], columns=['Plan'], values=['Premium'],
aggfunc='mean')

import seaborn as sns
plt.show; ax=sns.heatmap(agg);ax.set(xlabel='Year', ylabel='Age Group',title='Heatmap ')
```

#Q5 Obtain pie chart using ggplot2 for Premium amount across different sub plans.
##A.

```
pie_data = premium.groupby('Sub_Plan')['Premium'].sum()
pie_data.plot.pie(label=('Premium'), title = "Pie
chart",colormap='brg',autopct='%1.1f%%',pctdistance=1.1, labeldistance=1.2)
```