Assignment_3.2_Vayuvegula_Soma_Shekar_Python

In [1]:
```
# Import Libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import squarify
```

In [2]:
```
#Read csv
df_unemp = pd.read_csv("unemployement-rate-1948-2010.csv")
df_unemp.head()
```

Out[2]:

	Series id	Year	Period	Value
0	LNS14000000	1948	M01	3.4
1	LNS14000000	1948	M02	3.8
2	LNS14000000	1948	M03	4.0
3	LNS14000000	1948	M04	3.9
4	LNS14000000	1948	M05	3.5

In [3]:
```
unemp_df=df_unemp.groupby('Year')['Value'].sum()
unemp_df=unemp_df.to_frame().reset_index()
unemp_df.head()
```

Out[3]:

	Year	Value
0	1948	45.0
1	1949	72.6
2	1950	62.5
3	1951	39.4
4	1952	36.3

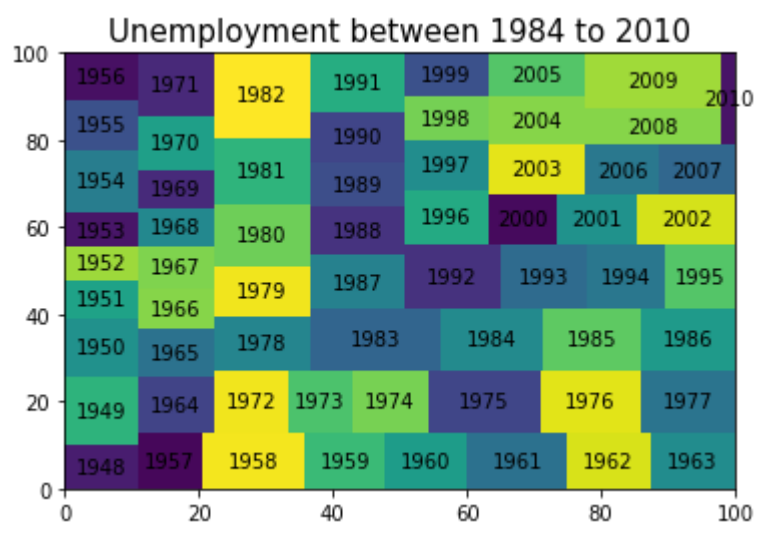
In [4]:
```
#Read text file
df_exp = pd.read_csv("expenditures.txt",sep='\t',lineterminator='\r')
df_exp.head()
```

Out[4]:

	year	category	expenditure	sex
0	2008	Food	6443	1
1	2008	Alcoholic Beverages	444	1
2	2008	Housing	17109	1
3	2008	Apparel	1801	1
4	2008	Transportation	8604	1

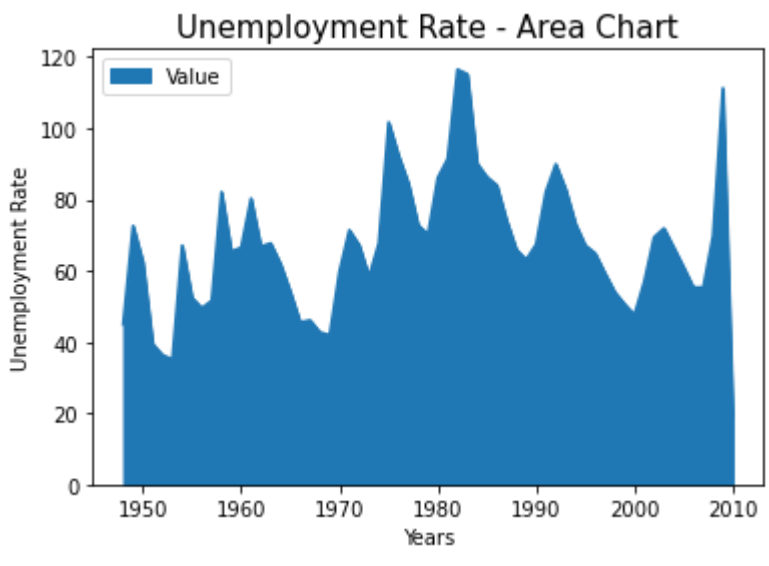
Tree Map

In [5]:
```
squarify.plot(sizes=round(unemp_df['Value']), label=unemp_df['Year'].astype(str), alpha=1 )
plt.title("Unemployment between 1984 to 2010", size=15)
plt.savefig("Python_Tree_Map.png")
plt.show()
plt.close()
```



Area Chart

In [6]:
```
unemp_df.plot.area(x="Year",y="Value")
plt.ylabel("Unemployment Rate")
plt.xlabel("Years")
plt.title("Unemployment Rate - Area Chart",size=15)
plt.savefig("Python_Area_chart.png")
plt.show()
plt.close()
```



Stacked Area Chart

In [7]:
```
#Pivoting expenditure df
df_exp_pivot=pd.pivot_table(df_exp,values='expenditure',index=['year'],columns='category').reset_index()
index=df_exp_pivot['year']
df_exp_pivot.head()
```

Out[7]:

category	year	Alcoholic Beverages	Apparel	Cash Contributions	Education	Entertainment	Food	Healthcare	Housing	Miscellaneous	Personal Care	In
0	1984	275	1319	706	303	1055	3290	1049	6674	451	289	
1	1985	306	1420	805	321	1170	3477	1108	7087	529	303	
2	1986	271	1346	746	314	1149	3448	1135	7292	522	303	
3	1987	289	1446	741	337	1193	3664	1135	7569	562	330	
4	1988	269	1489	693	342	1329	3748	1298	8079	578	334	

In [8]:
```
data_columns = list(df_exp_pivot.columns)
data_columns.remove('year')
data_columns
```

Out[8]:
```
['Alcoholic Beverages',
 'Apparel',
 'Cash Contributions',
 'Education',
 'Entertainment',
 'Food',
 'Healthcare',
 'Housing',
 'Miscellaneous',
 'Personal Care',
 'Personal Insurance',
 'Reading',
 'Tobacco Products',
 'Transportation']
```

In [9]:
```
data_temp = df_exp_pivot[data_columns].copy()
rec = data_temp.to_records(index=False)
data = list(rec)

temp_df = pd.DataFrame(data_temp, columns=data_columns)

col = list(data_temp.columns.values)
```

In [10]:
```
pos=(0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24)
axs=temp_df.plot.area(stacked=True,xticks=pos,rot=90)
axs.set_xticklabels(index)
plt.ylabel("Expenditures",size=8)
plt.xlabel("Year",size=8)
plt.title("Expenditures per Year - Stacked Area Chart",size=15)
axs.legend(bbox_to_anchor=(1.1,1.05),prop={"size":7})
plt.savefig("Python_Stacked_Area.png")
plt.show()
plt.close()
```

In [ ]:
```
```