Online Classroom Survey Data

September 13, 2020

1 Online Classrooms Survey

Baby Zoomers

- A survey depicting which online classrooms are used
- School name, education level, online classroom recorded

[2]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
%matplotlib inline

data = pd.read_csv('ClassroomSurvey.csv')
```

1.0.1 Example of CSV file being used to analyze data

[3]:
```
school_names = data["SchoolType"]
online_room = data["ClassroomType"]
edu_lvl = data["EduLvl"]
data.head()
```

[3]:

	SchoolType	ClassroomType	EduLvl
0	SDSU	Zoom	College / Uni
1	Syracuse	Zoom	College / Uni
2	Inver Hills	Zoom	HS
3	JHU	Zoom	College / Uni
4	Manhasset	Zoom	HS

1.1 Raw data of schools sampled

[4]:
```
print('List of all schools sampled:')
print(school_names.to_numpy())
```

```
List of all schools sampled:
['SDSU' 'Syracuse' 'Inver Hills' 'JHU' 'Manhasset' 'UC Berkley'
 'Cornell University' 'Fordham University' 'Bentley University'
 'Marist College' 'Muhlenberg College' 'RPI' 'Princeton University'
```

```
 'Port Washington' 'Lake (OH)' 'College Prep (CA)' 'Great Neck North'
 'Binghamton U' 'Stout' 'Moundsview' 'Bryn Mawr College' 'Unlisted'
 'Poquoson' 'Geneva' 'Davidson College' 'Providence College'
 'Villanova University' 'University of Colorado' 'Adelphi University'
 'Naval Academy' 'Gonzago' 'Campolindo' 'Bellevue' 'Jesuit (OR)'
 'Montana State' 'Unlisted' 'Cal Poly' 'Dartmouth College'
 'Duke University' 'Washington University' 'Wake Forest' 'Penn State'
 'University of Pennsylvania' 'University of Pennsylvania' 'Texas A&M'
 'NYIT' 'George Washington University' 'University of Virginia'
 'University of Delaware' 'SUNY Cortland' 'Adelphi University'
 'SUNY New Paltz' 'Loyola Maryland' 'Northwestern' 'Lakeview' 'USC'
 'University of Toronto' 'Tulane University' 'Georgetown University'
 'Nassau Community College' 'Jefferson' 'Osseo' 'CU Boulder'
 'Quinnipiac University' 'Harvard University' 'University of Pittsburgh']
```

1.2 Education level / schooling data

[7]:
```
num_schools = str(len(school_names) - 1) # uPenn uses 2 virtual meeting platforms
num_HS, i = 0, 0

while i in edu_lvl:
    if edu_lvl[i] == 'HS':
        num_HS += 1; i += 1
    else: i += 1

num_highSchools = str((num_HS))
num_college = str(len(school_names) - (num_HS) - 1)

print('\nData collected from students at ' + num_schools + ' distinct schools.')
print('Out of these, we collected ' + num_highSchools + ' high schools and ' +␣
 ↪num_college + ' colleges / universities.')
```

```
Data collected from students at 65 distinct schools.
Out of these, we collected 19 high schools and 46 colleges / universities.
```

1.3 Raw data of virtual meeting software being used

[76]:
```
print(online_room.to_numpy())
```

```
['Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom'
 'Zoom' 'Webex' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom'
 'Microsoft Teams' 'Collaborate Ultra' 'Zoom' 'Google Meetings' 'Zoom'
 'Microsoft Teams' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Google Meetings'
 'Zoom' 'Zoom' 'Microsoft Teams' 'Zoom' 'Microsoft Teams'
 'Collaborate Ultra' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom'
 'BlueJeans' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Webex' 'Moodle'
```

```
 'Collaborate Ultra' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom'
 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom' 'Zoom']
```

1.4 Virtual meeting software data

[78]:
```
n_zoom, n_teams, n_webex, n_collab, n_google, n_bj, n_moodle, j = 0, 0, 0, 0, 0,␣
 ↪0, 0, 0
labels = ['Zoom','Microsoft Teams','Webex','Collaborate Ultra','Google␣
 ↪Meetings', 'BlueJeans','Moodle']

while j in online_room:    # counting number of each
    if online_room[j] == 'Zoom':
        n_zoom += 1; j += 1
    elif online_room[j] == 'Microsoft Teams':
        n_teams += 1; j += 1
    elif online_room[j] == 'Webex':
        n_webex += 1; j += 1
    elif online_room[j] == 'Collaborate Ultra':
        n_collab += 1; j += 1
    elif online_room[j] == 'Google Meetings':
        n_google += 1; j += 1
    elif online_room[j] == 'BlueJeans':
        n_bj += 1; j += 1
    elif online_room[j] == 'Moodle':
        n_moodle += 1; j += 1

num_meet = np.asarray([n_zoom, n_teams, n_webex, n_collab, n_google + n_bj +␣
 ↪n_moodle]) # combined 3 because they had 1 each
percent_zoom = (n_zoom / len(online_room)) * 100
percent_other = 100 - percent_zoom

print('{:.1f}% of schools use Zoom.'.format(percent_zoom))
print('{:.1f}% of schools use other virtual meeting software.\n'.
 ↪format(percent_other))
```

```
80.3% of schools use Zoom.
19.7% of schools use other virtual meeting software.
```

1.5 Visualizing virtual meeting softwares

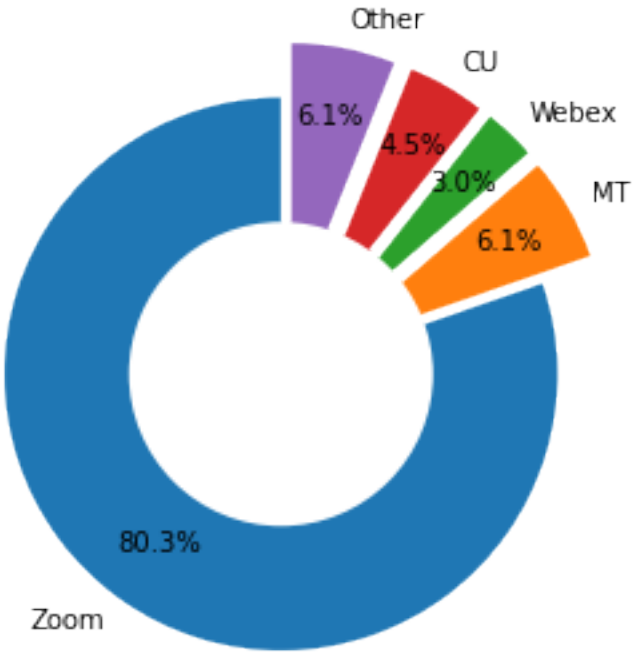
[86]:
```
explode = (0, .2, .2, .2, .2)

plt.pie(num_meet, labels=['Zoom','MT','Webex','CU','Other'], autopct='%1.1f%%',␣
 ↪startangle=90, pctdistance=.75, explode = explode, textprops={'fontsize': 10})

centre_circle = plt.Circle((0,0),.55,fc='white')
```

```
fig = plt.gcf()
fig.gca().add_artist(centre_circle)

plt.tight_layout()
plt.show()
```

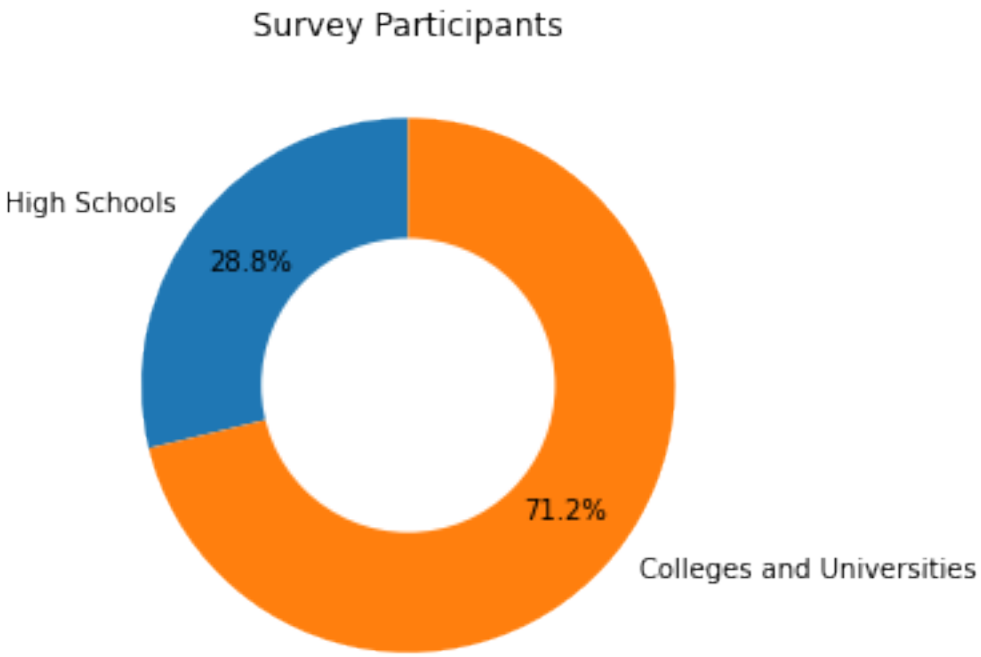


1.6 Visualizing Sample Set

[87]:
```
plt.pie([num_HS,num_college], labels=['High Schools','Colleges and␣
 ↪Universities'], autopct='%1.1f%%', startangle=90, pctdistance=.75,␣
 ↪textprops={'fontsize': 10})

centre_circle = plt.Circle((0,0),.55,fc='white')
fig = plt.gcf()
fig.gca().add_artist(centre_circle)

plt.title('Survey Participants')
plt.tight_layout()
plt.show()
```



1.7 Conclusion

This survey gave us insight into how prevalent Zoom is in classroom settings, as over 80% of schools sampled use it! Thus, we focused on this virtual meeting software as it is the most popular, hence our improvements will make the biggest impact.