

Q1 LCF Presentation

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Our Task:

- Identify the major donor events by grouping the donor event
- Identify the extreme donors by analyzing the donor file



Identifying Donor Events



Donor Events so far

- To identify the major donor events
- Text Cleaning:

Combine the columns of 'Appeal Description' and 'Campaign Description', and fill NAs with descriptions from the 'Fund Description'

Key Indicator	Constituent ID	Gift Date	Gift Amount	Appeal Split Amount	Gift Type	Category	Campaign ID	Campaign Description	Fund ID	Fund Description	Appeal ID	Appeal Description
Individual	1099414	7/1/1998	\$30.00	\$30.00	Recurring Gift	Individual Giving	IG \$1-\$499 FY21	Individual Giving \$1-\$499 FY21	DM-New	Direct Mail	Circle of Love FY21	Circle of Love FY21
Individual	1106398	7/1/1998	\$30.00	\$30.00	Recurring Gift	Individual Giving			DM	Direct Mail - Old		
Individual	1037134	7/1/1998	\$50.00	\$50.00	Recurring Gift	Individual Giving	4001 INDGIV	Individual Giving - 4001	700 FUND	General Contribution	Circle of Love FY23	Circle of Love FY23
Individual	1040080	7/1/1998	\$50.00	\$50.00	Recurring Gift	Individual Giving	4001 INDGIV	Individual Giving - 4001	700 FUND	General Contribution	Circle of Love FY24	Circle of Love FY24
Individual	1046392	7/1/1998	\$50.00	\$50.00	Recurring Gift	Individual Giving	Pledge 05-06	Pledge 05-06	DM	Direct Mail - Old	P5GFRA	P5GFRA
Individual	1101265	7/1/1998	\$50.00	\$50.00	Recurring Gift	Individual Giving	ANNUALGVGFY15	ANNUALGVGFY15	DM-New	Direct Mail	CIRCLEFY15	FY15 Circle of Love
Individual	1104002	7/1/1998	\$200.00	\$200.00	Cash	Individual Giving			DM	Direct Mail - Old	98JR	98 March Renewal
Individual	1043888	7/1/1998	\$10.00	\$10.00	Cash	Individual Giving			DM	Direct Mail - Old	98LR	98 May Renewal
Individual	1094326	7/1/1998	\$10.00	\$10.00	Cash	Individual Giving			DM	Direct Mail - Old	98LR	98 May Renewal
Individual	1106432	7/1/1998	\$10.00	\$10.00	Cash	Individual Giving			DM	Direct Mail - Old	98LR	98 May Renewal
Individual	1098861	7/1/1998	\$12.00	\$12.00	Cash	Individual Giving			DM	Direct Mail - Old	98JR	98 March Renewal
Individual	1056438	7/1/1998	\$15.00	\$15.00	Recurring Gift	Individual Giving			DM	Direct Mail - Old		

Group Events

- Use the Document-term matrix
- Ngram = 2~4 (events can have more than one word)
- Find top 250 combination of words in terms of occurrences

```
max_combination_count = combination_counts.max_combination_count  
print(combination_counts.sort_values(ascending=False)[:50])
```

direct mail	211317
direct mail old	181073
mail old	181073
general operating	43037
operating budget	43035
general operating budget	43035
annual giving	41202
circle of love	26582
of love	26582
circle of	26582

Insights:

- See some patterns;
- 'Direct mail': due to a lot of NAs, way of distribution during the early period

Group Events

- Use eyeball to catch the event and refer to original .csv file
- Manual list of **23** events:
events_list = ['general operating budget', 'direct mail', 'circle of love', 'annual giving', 'newsletter', 'pledge', 'annual dinner', 'little city invitational', 'santa stickers', 'smiles campaign', 'holiday mailing', 'holiday cards', 'teaser', 'renewal', 'golf', 'teddy bear', 'verne carson letter', 'face labels', 'calendar', 'donor campaign', 'university of illinois work place giving', 'book sale', 'parent']
- Covered almost **80%** of data (including the 'direct mail')

Group Events

- Generate category (and subcategories if applicable) for each observation
 - "Tagging"
- Example:
'Newsletter' has a four-season series: 'spring', 'summer', 'fall', 'winter'

```
In [13]: gifttest['matching_event'].value_counts()
```

```
Out[13]: matching_event      519793 rows :
[direct mail]      190880
[]                  108417
[renewal]           45207
[general operating budget] 22241
[annual giving]     16872
[newsletter]        13511
[circle of love, annual giving] 11421
[general operating budget, newsletter] 10890
```

matching_event	newsletter_sub
fall	9415
winter	6194
spring	5137
summer	4918

Way of Donation & Loyalty

- **Direct Mail:** from the 'Fund Description'

Almost 80% of the data are from the way of 'Direct Mail' which may due to the lack of record for events/appeals in the early decades.

%Donation out of Total: **10.99%**

```
Direct Mail
1      417896
0      180177
Name: count, dtype: int64
```

- **Renewal:**

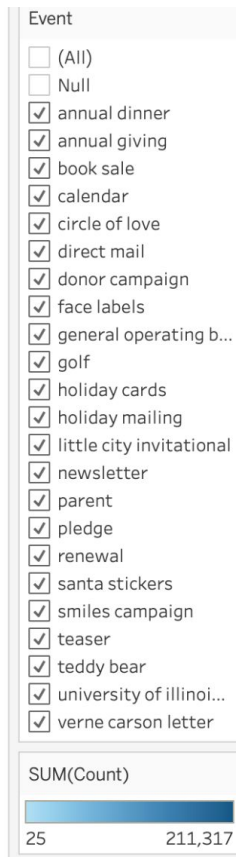
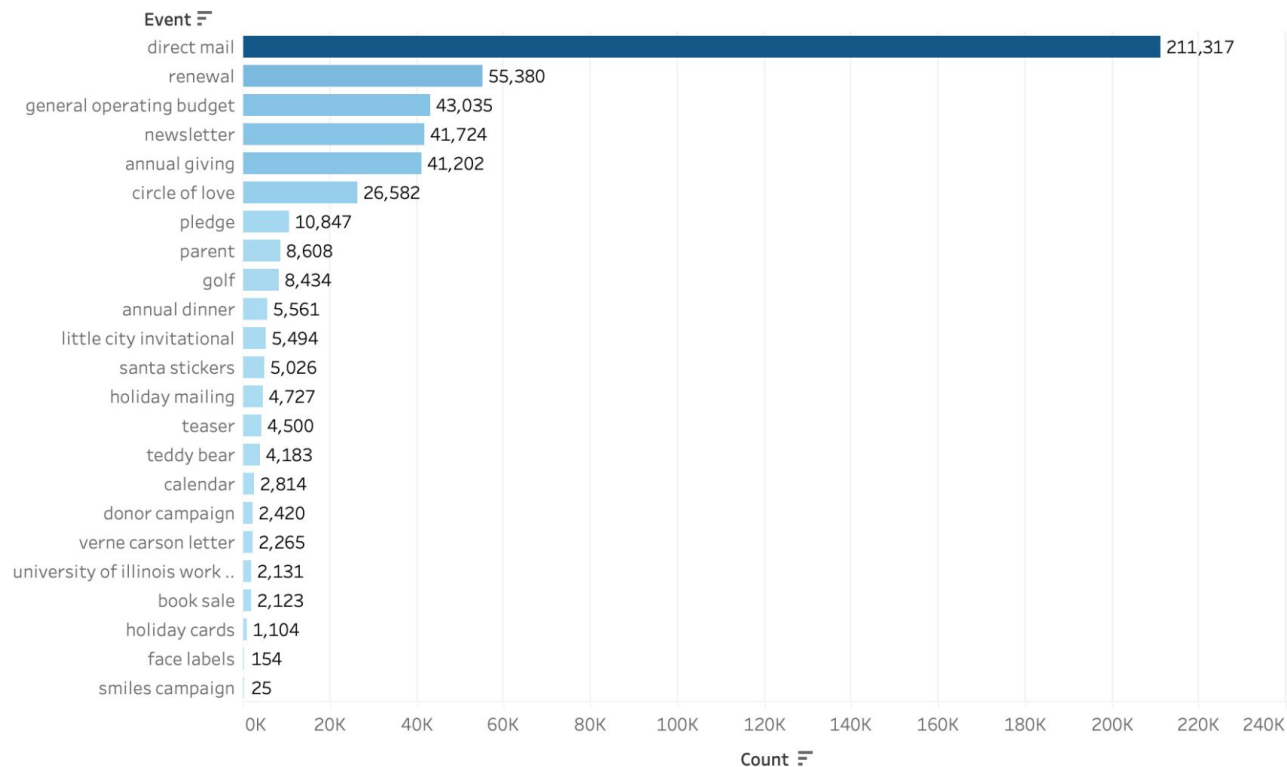
About 10% of the donation are from the 'Renewal'.

%Donation out of Total: **1.38%**

```
Renewal
0      542693
1      55380
Name: count, dtype: int64
```

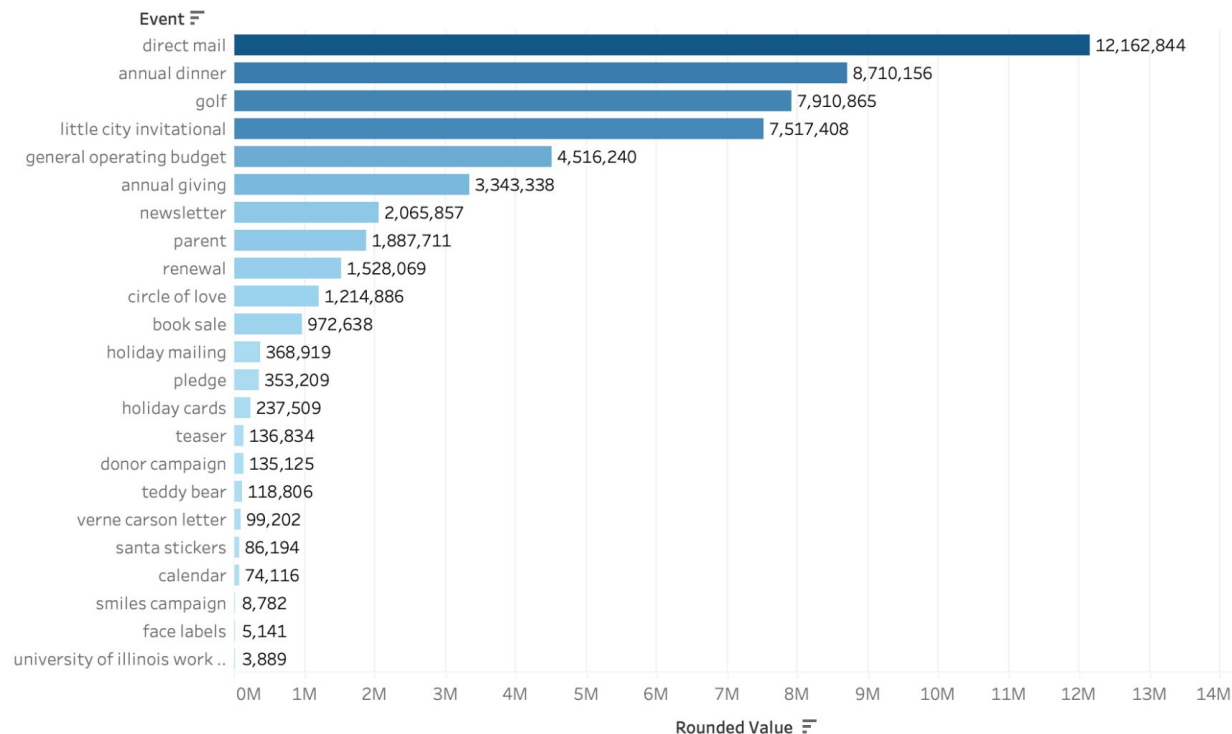

Count of Occurrence for each Event

EventCount



Sum of Donation for each Event

SumDict



Event

☐ (All)

☐ Null

☒ annual dinner

☒ annual giving

☒ book sale

☒ calendar

☒ circle of love

☒ direct mail

☒ donor campaign

☒ face labels

☒ general operating b...

☒ golf

☒ holiday cards

☒ holiday mailing

☒ little city invitational

☒ newsletter

☒ parent

☒ pledge

☒ renewal

☒ santa stickers

☒ smiles campaign

☒ teaser

☒ teddy bear

☒ university of illinoi...

☒ verne carson letter

SUM(Rounded Value)

3,88912,162,844

Total amount of donation:

110648616.72

* Could have duplicate entries in different entries of events if the observation is being tagged with more than one event

* Remove Null



Identifying Extreme Donors




Donor Research:

- For every donor, lifetime donations
 - Looking at Individual over Organization right now
- Labeled all gifting as low, medium, and high categories
-
- How often do they donate?
- Zip Codes
 - What zip codes donate the highest
 - What zip codes donate the most frequently

Donor Findings

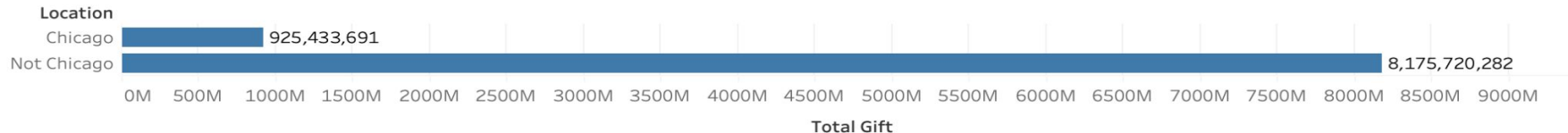
- 27% of donors gift only once
- About 3% of donors gift over 50 times



	Constituent ID	Total Gift Times
17228	1098133	1399
25337	1122318	501
176	1005581	461
840	1014186	421
1755	1024411	403
...
34070	1244863	1
34071	1244891	1
34072	1244892	1
34075	1244895	1
45089	9999997997	1

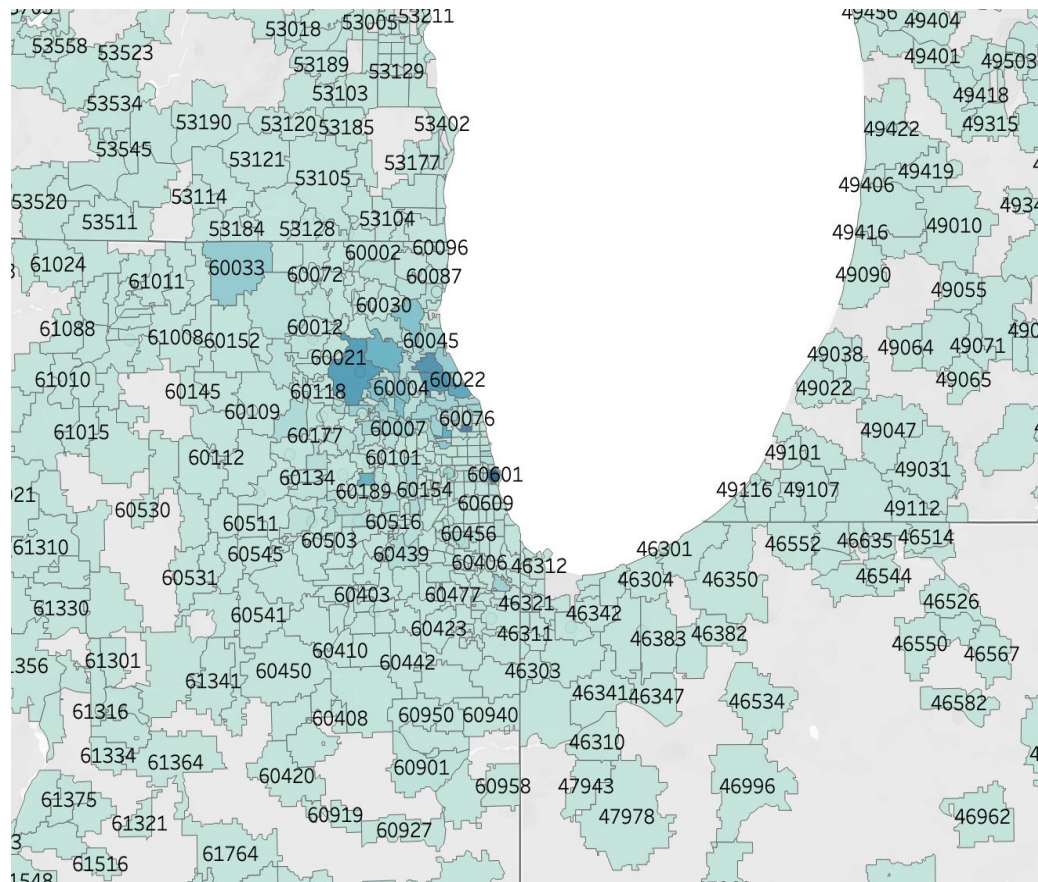
45089 rows x 3 columns

Gifting Behaviour



Zip Code Findings

- Cleaned zip codes by removing the last four extra digits



Donor behavior next steps

- Create three groups of zip codes
 - Chicago
 - Not Chicago
 - International



Thank you for your listening

