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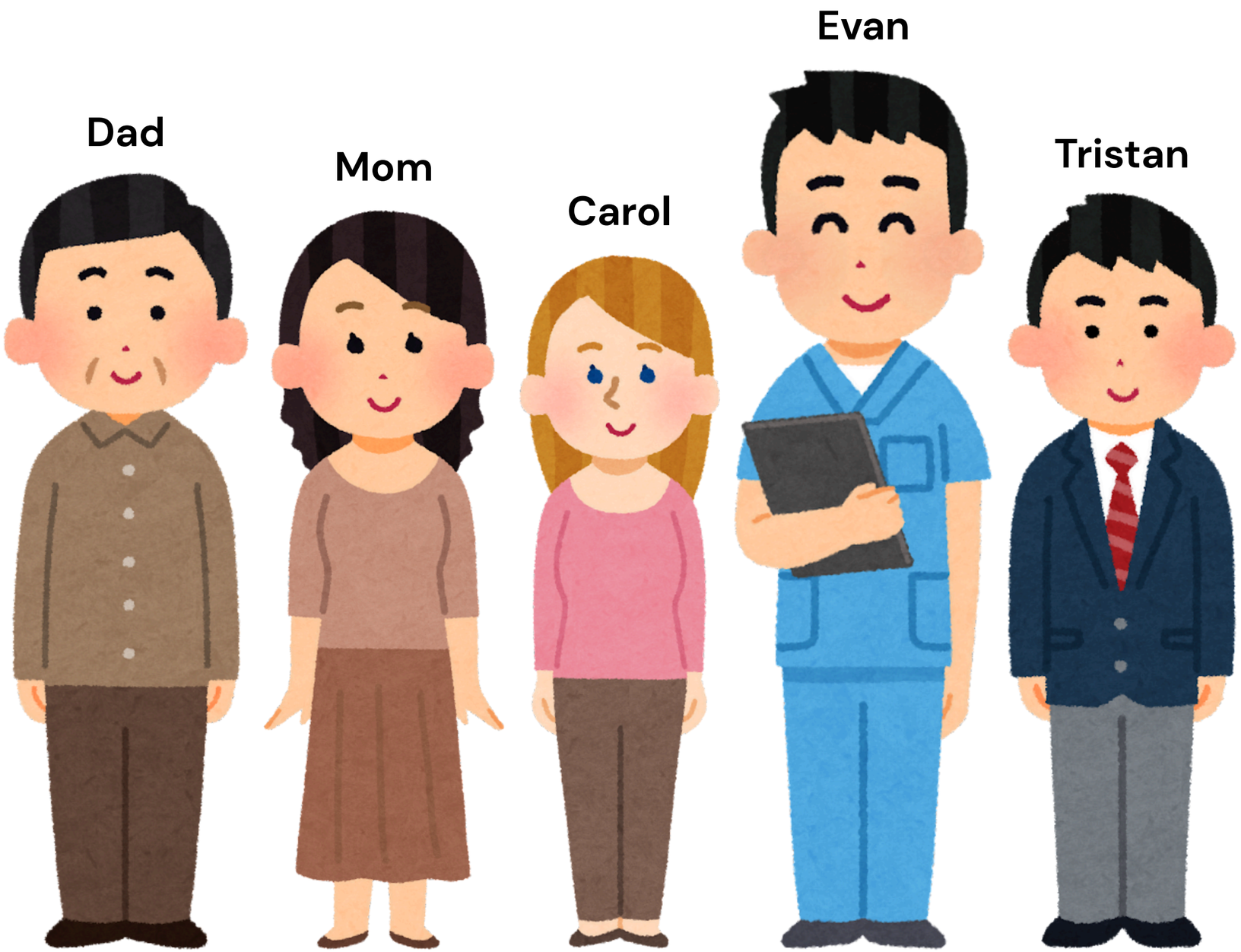
Which Kid My Parents Love The Most?


Dad
Mom
Carol
Evan
Tristan

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chat frequencies

How is data science relevant?

sentiment analysis

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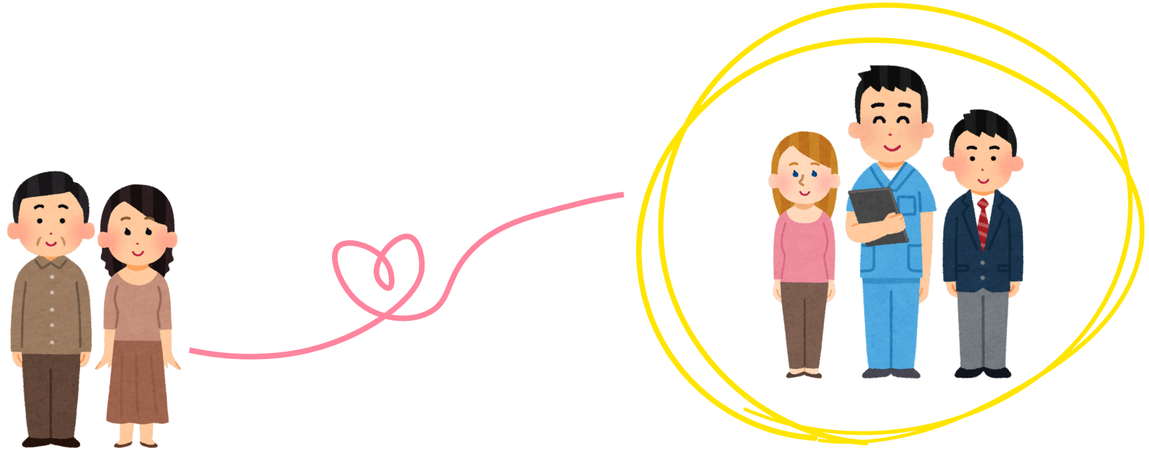
To prove if they love us EQUALLY



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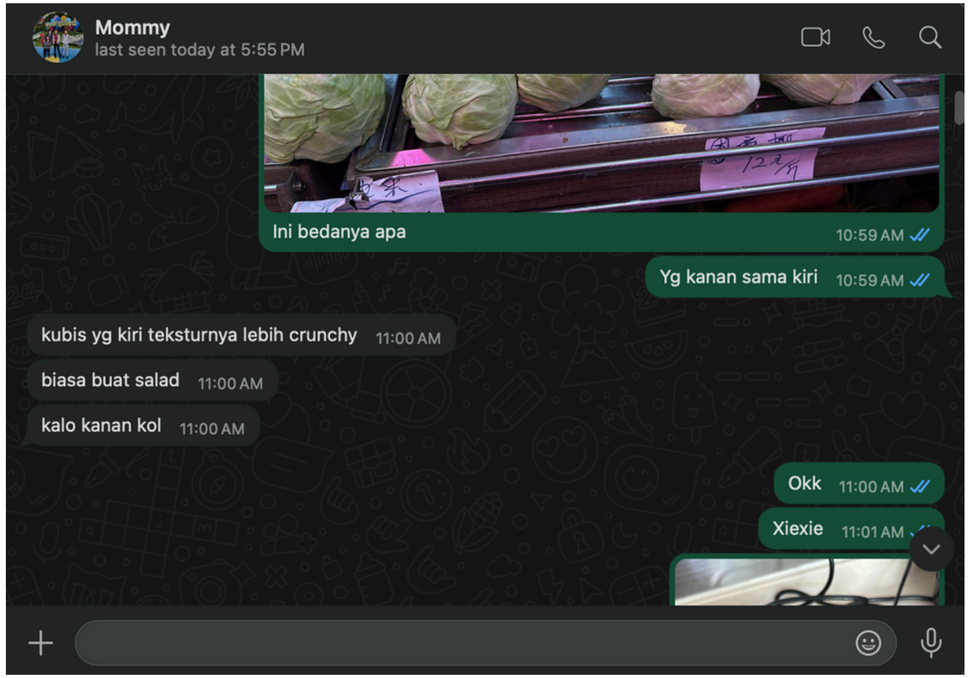
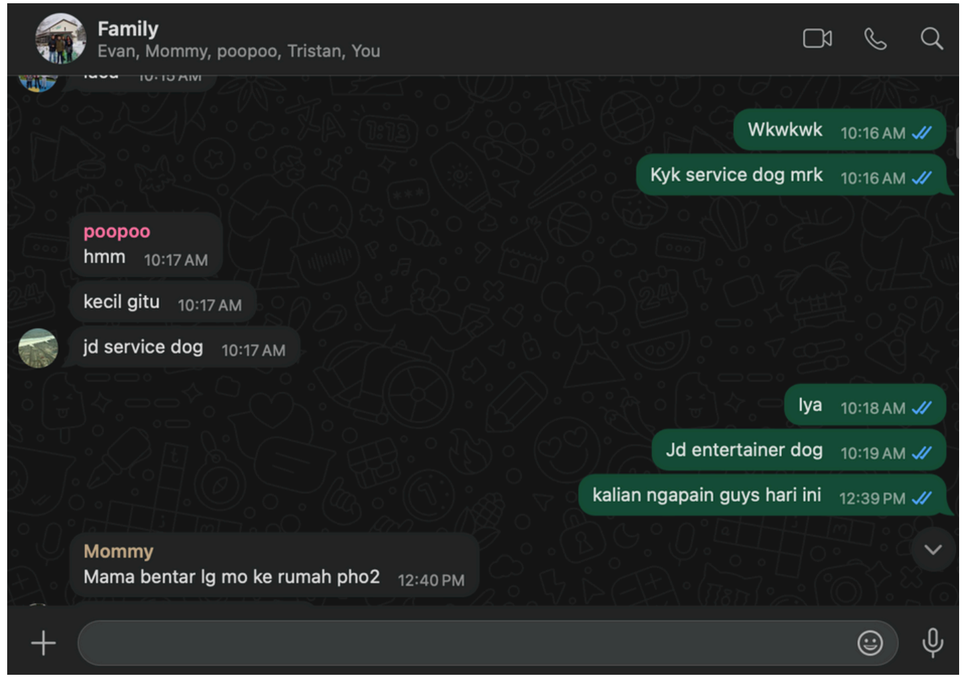
Where the data came from?

1 One-to-one chat between **a parent** and **a child**



2 Family group chat



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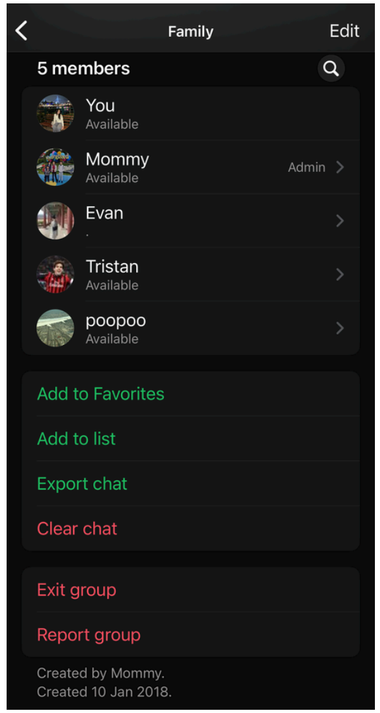


```
import re
from datetime import datetime
```

```
from transformers import AutoTokenizer, AutoModelForSequenceClassification
import torch
import pandas as pd
```

w11wo/**indonesian-roberta-base-sentiment-classifier** like 35

Text Classification | Transformers | PyTorch | TensorFlow | Safetensors | indonlu | Indonesian | doi:10.57967/hf/2997 | roberta | indonesian-roberta-base-sentiment-classifier | arxiv:1907.11692

License: mit

```
library(tidyverse)
library(lubridate)
library(tidytext)
library(stringr)
```

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1 One-to-one chat between **a parent** and **a child**

	date	time	datetime	sender	receiver	message	sentiment	confidence
23	4/7/2017	7:52:07PM	2017-07-04 19:52:07	Carol	Mom	Dari tristan	neutral	0.6597483
24	4/7/2017	7:52:46PM	2017-07-04 19:52:46	Carol	Mom	Ok	positive	0.7505800
25	4/7/2017	8:08:55PM	2017-07-04 20:08:55	Mom	Carol	Mama bli dunkin donut mau gak	neutral	0.9702892
26	4/7/2017	8:51:06PM	2017-07-04 20:51:06	Carol	Mom	Boleh	positive	0.9889516
27	4/7/2017	8:51:22PM	2017-07-04 20:51:22	Mom	Carol	Mama lg otw home	neutral	0.9985890
28	4/7/2017	8:51:23PM	2017-07-04 20:51:23	Carol	Mom	Evan mau KOI	neutral	0.9877983
29	4/7/2017	8:51:39PM	2017-07-04 20:51:39	Mom	Carol	Dapur diberesin khan	negative	0.6215031
30	4/7/2017	8:51:42PM	2017-07-04 20:51:42	Carol	Mom	Iya	positive	0.6199375

1 sender, 1 receiver

Family group chat 2

	date	time	datetime	sender	message	mentioned	sentiment	confidence
13	10/1/2018	9:27:51AM	2018-01-10 09:27:51	Dad	tapi harga nya mahal		negative	0.9895146
14	10/1/2018	9:30:06AM	2018-01-10 09:30:06	Mom	Emang lebih mahal dr golden		negative	0.5821504
15	10/1/2018	2:22:23PM	2018-01-10 14:22:23	Carol	Mendingan golden		negative	0.9397889
16	10/1/2018	2:22:50PM	2018-01-10 14:22:50	Carol	Golden aja		neutral	0.9231848
17	10/1/2018	2:22:55PM	2018-01-10 14:22:55	Carol	Lebih lucu		positive	0.9977602
18	10/1/2018	2:23:02PM	2018-01-10 14:23:02	Carol	Corgi aneh		negative	0.9979531
19	10/1/2018	2:59:47PM	2018-01-10 14:59:47	Dad	bagus kok corgi		positive	0.9986864
20	10/1/2018	4:31:20PM	2018-01-10 16:31:20	Carol	Aku maunya golden lebih lucu		positive	0.9916250

1 sender, 0 to many mentions

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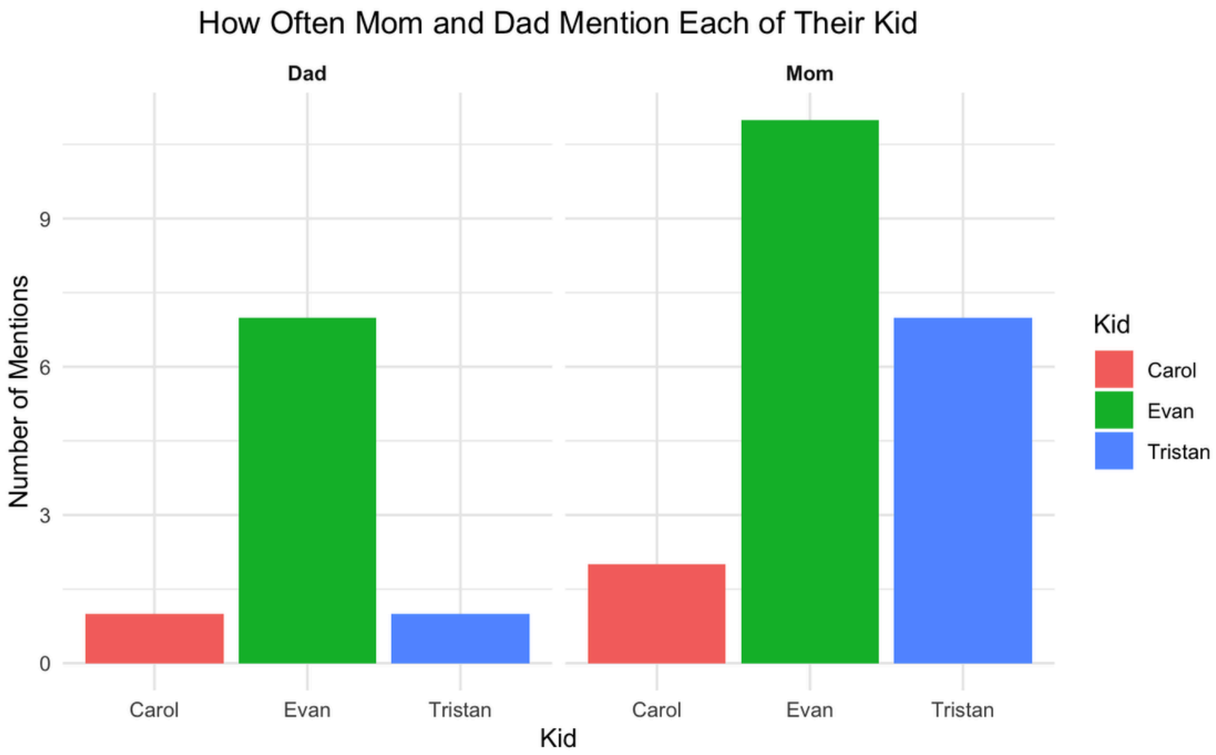
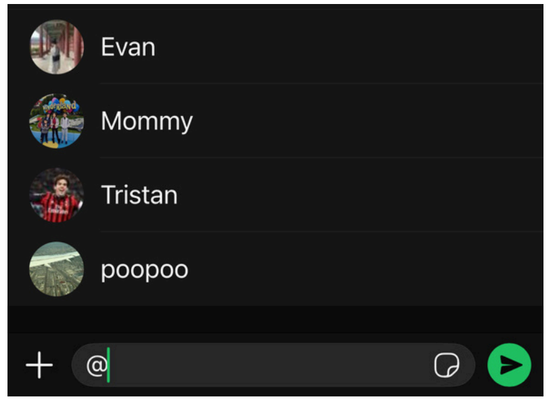
How often are we mentioned by our parents in the family group chat?



"@" feature



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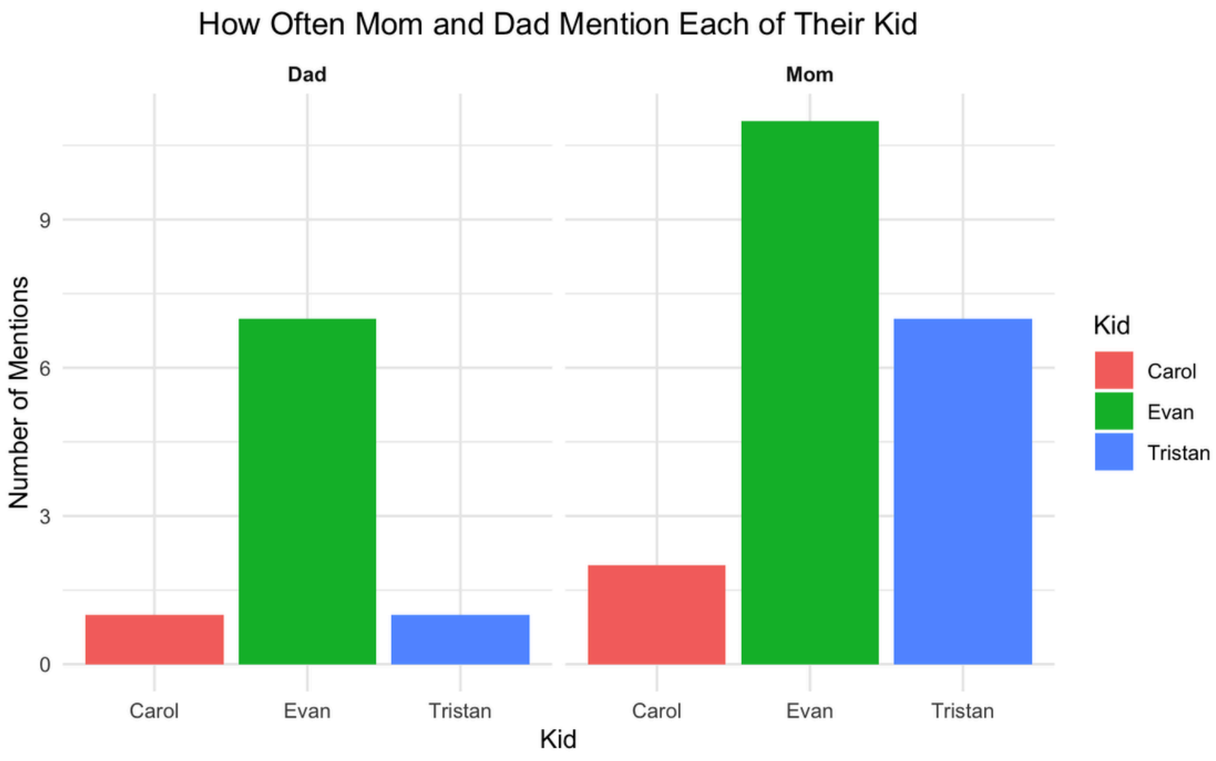
How often are we mentioned by our parents in the family group chat?



The number seems off...

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Aliases →

Carol	Evan	Tristan
“ce”	“van”	“tris”
“cece”	“evan”	“tristan”
“...”	“...”	“...”
“...”	“...”	“...”

1063	5/7/2019	7:51:55PM	2019-07-05 19:51:55	Mom	Ce, itu si sam diapain ?		negative	0.9983127

1847	6/4/2020	11:19:18AM	2020-04-06 11:19:18	Mom	Evan, lg sekolah gak ?		negative	0.5539638

1959	22/4/2020	1:42:24PM	2020-04-22 13:42:24	Dad	trus minum vit c Tris		neutral	0.9970322

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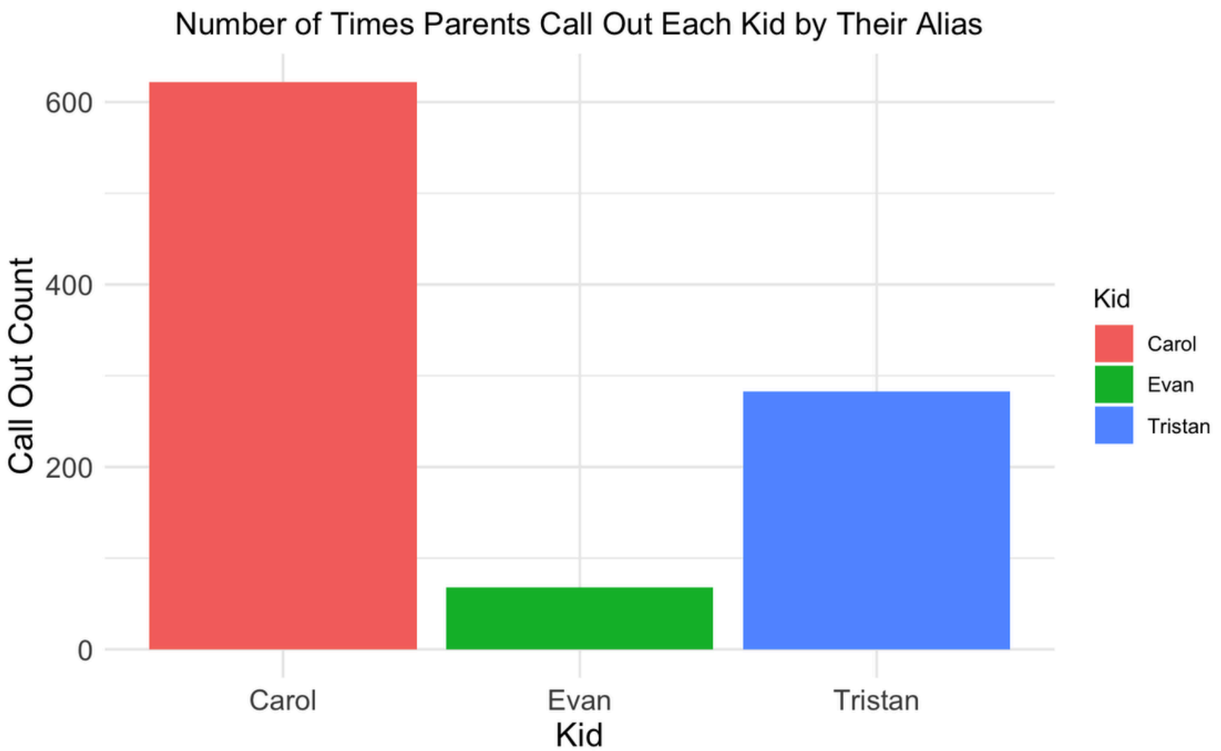
How often are we being called out by our parents in the family group chat?



called out by parents

=

attention from parents

Ledbetter, A. M., & Hogan, W. (2020). Digital Communication and Family Relationships. Journal of Family Communication, 20(3), 234-250.

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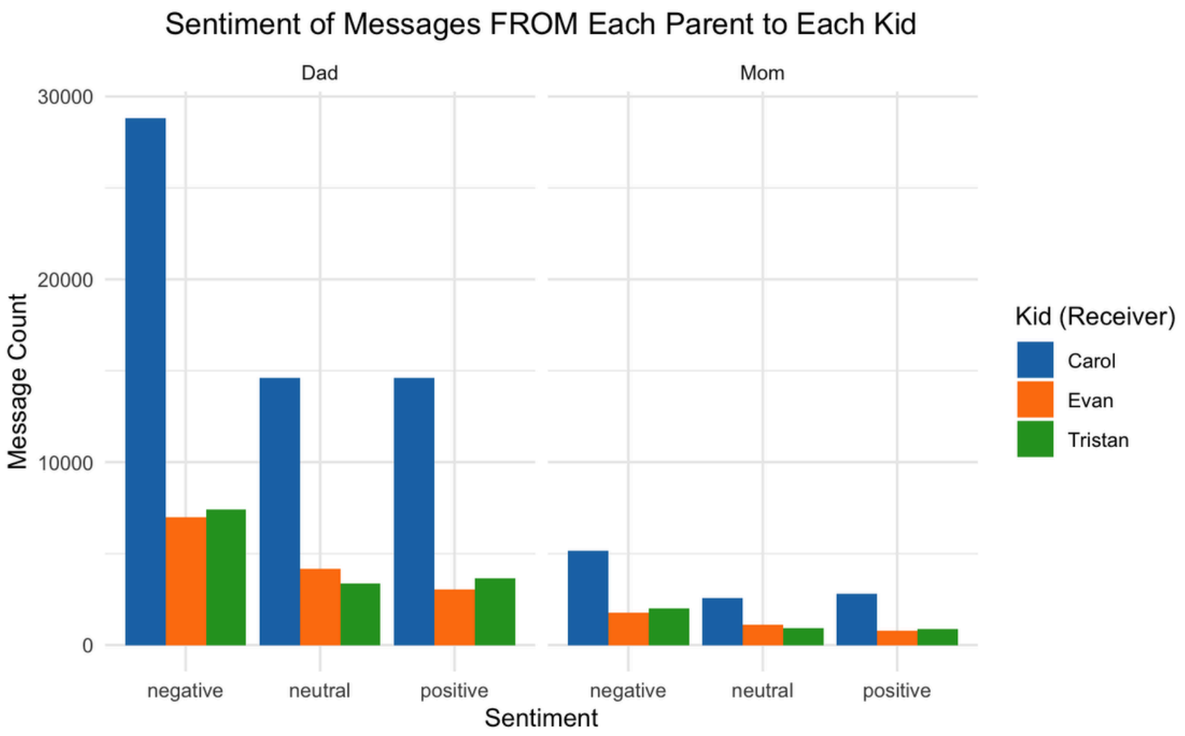
Analyzing the sentiment in messages from parents to us

positive messages

=

warmth
&
affirmation



Gottman, J. M. (1994). What Predicts Divorce? The Relationship Between Marital Interaction and Marital Outcomes. Lawrence Erlbaum.
Baym, N. K. (2010). Personal Connections in the Digital Age. Polity.

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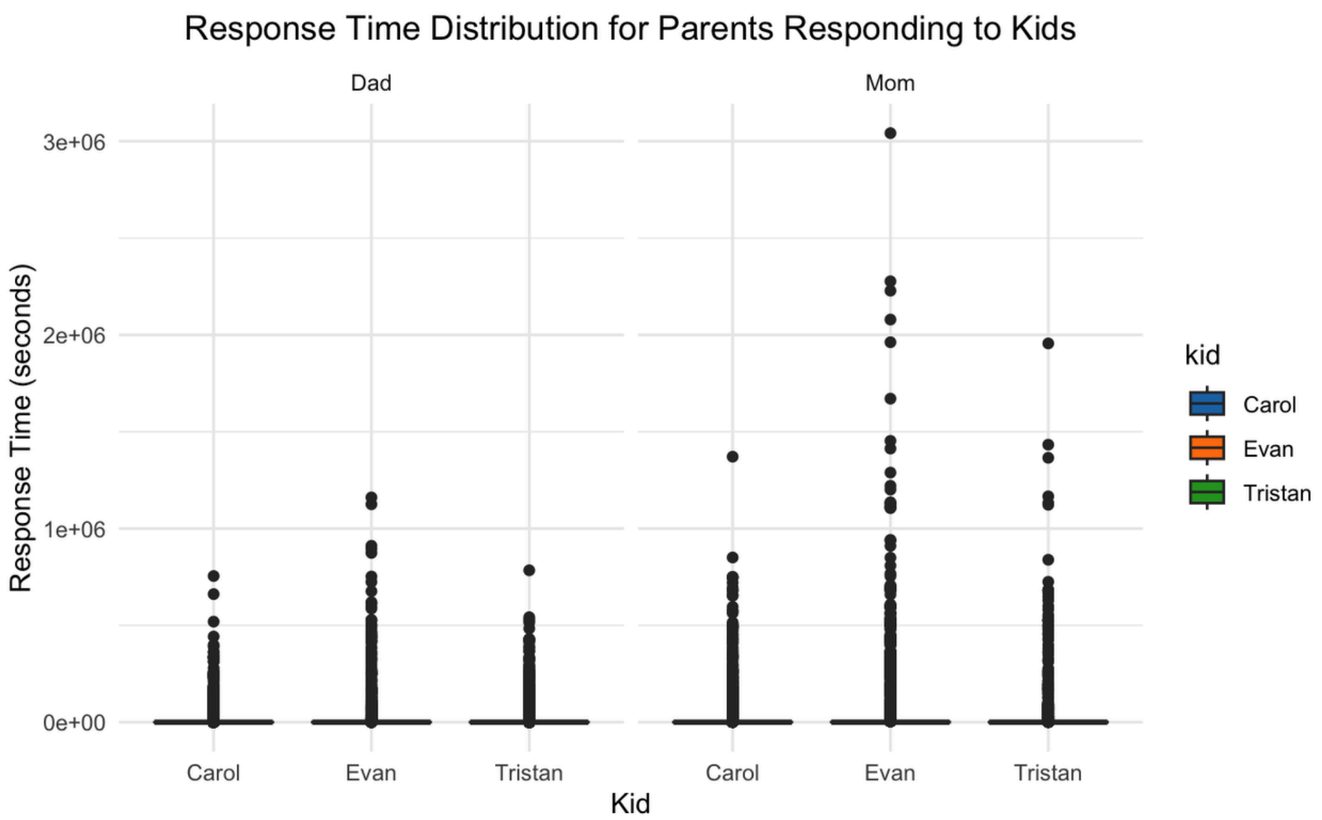
How quick do our parents respond to our chat?



response time

=

attentiveness
&
priority

Ling, R. (2012). Taken for Grantedness: The Embedding of Mobile Communication in Everyday Life. MIT Press.

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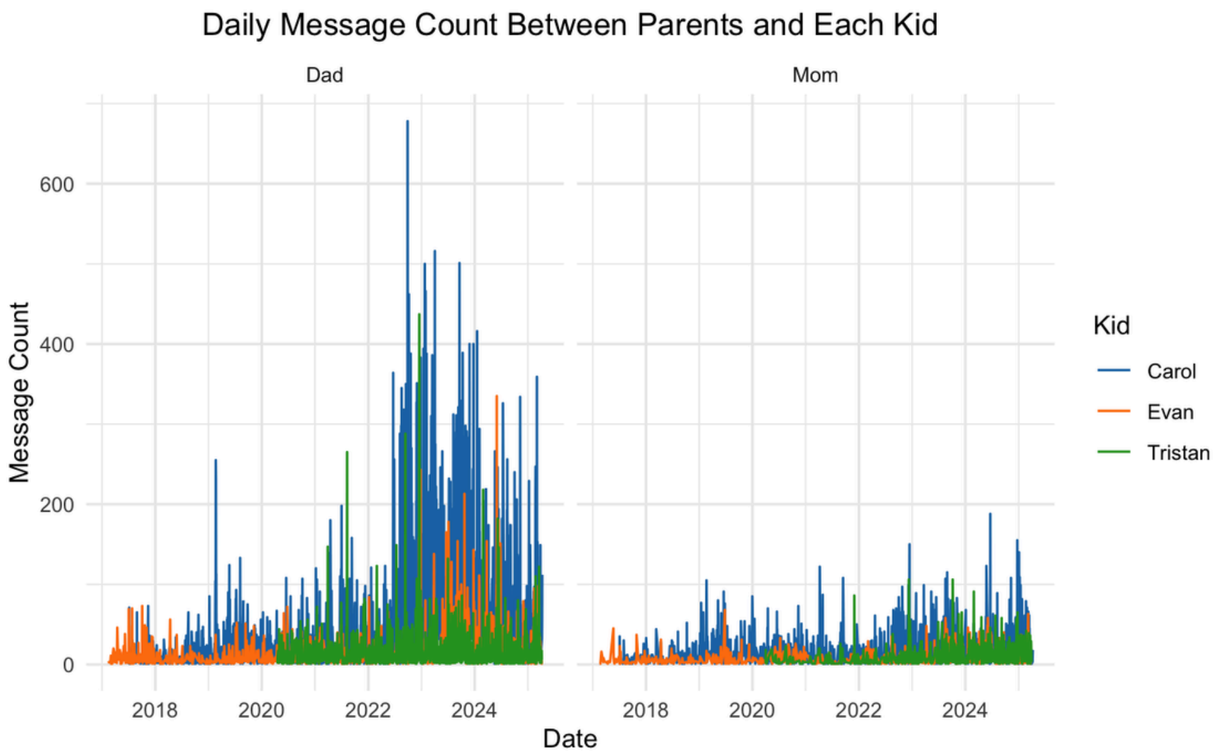
How often do we chat with our parents daily?

high-frequency

indicates

ongoing, **engaged** relationship



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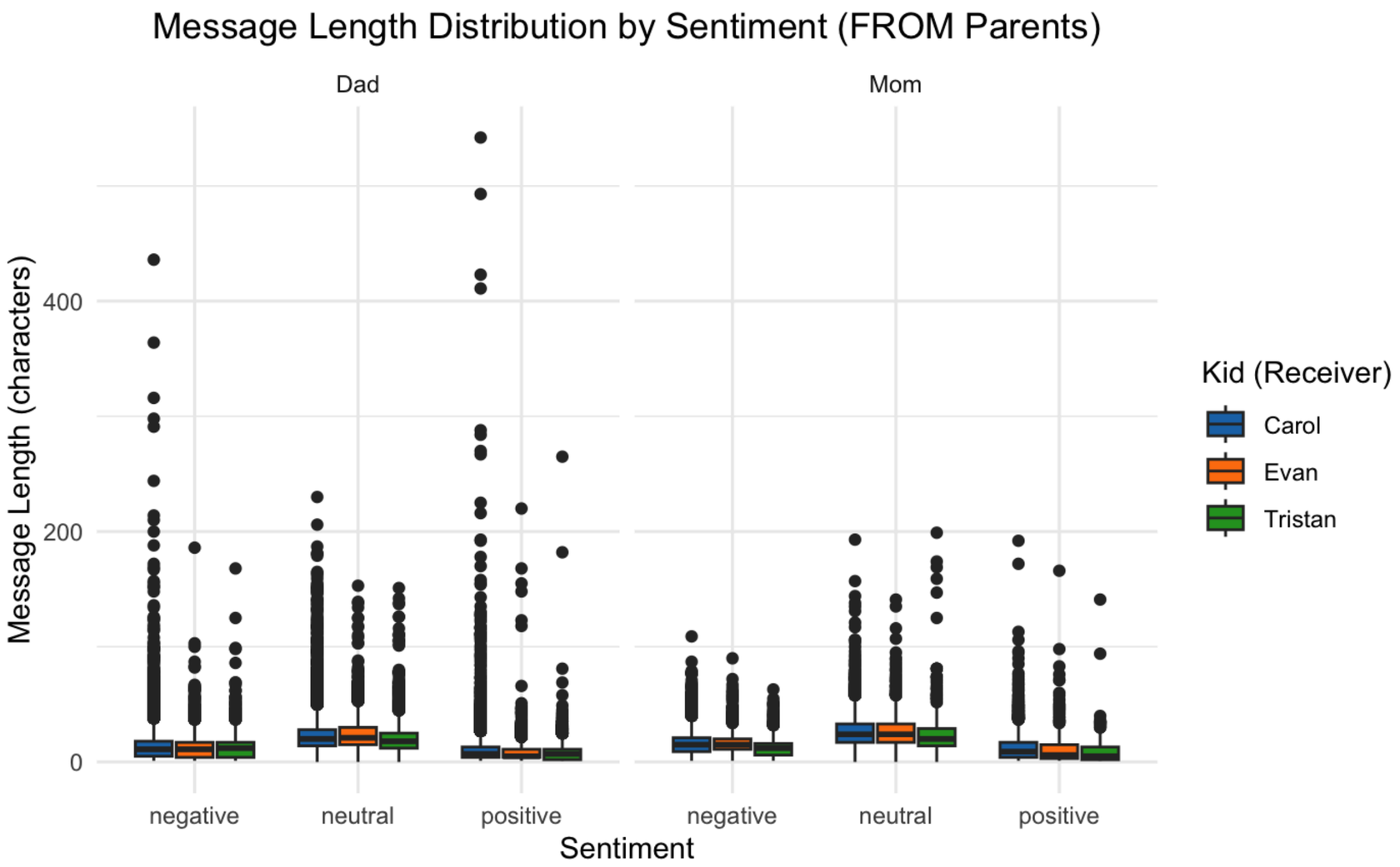
Analyzing message length distribution by sentiment

longer messages

=

taking more time to communicate & more attention



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Conclusion

1. Mentioned the most
2. Most positive sentiment
3. Promptness
4. Frequency
5. Message length distribution

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Difficulties

Lack of sentiment analysis tool

- Informal languages
- Abbreviations
- Context

4/7/2017	8:51:55PM	2017-07-04 20:51:55	Carol	Mom	Oo ok	negative	0.6035064
4/7/2017	8:52:13PM	2017-07-04 20:52:13	Carol	Mom	Ma evan mau coke	negative	0.9905002

3/9/2024	7:24:31AM	2024-09-03 07:24:31	Carol	Dad	Itu kyk credentials nya	negative	0.9992336
3/9/2024	7:24:39AM	2024-09-03 07:24:39	Carol	Dad	Soalnya itu gabisa di upload ke github	neutral	0.8717043
3/9/2024	7:24:41AM	2024-09-03 07:24:41	Dad	Carol	branch itu apa yah	negative	0.4750157

Different time format when exporting from iPhone and Android

```
10/27/17, 2:31 PM - Mama: Evan mama dah parkir di depan basement yah
10/27/17, 5:33 PM - Mama: Evan dah kelar blm lesnya
10/28/17, 12:05 PM - Mama: Tunggu di Yamaha dulu yah ini msh antri ambil raport
```

Android

```
[4/7/2017, 9:53:55 PM] poopoo: coba lepas casing nya dulu
[4/7/2017, 9:54:05 PM] poopoo: jgn pakai dulu
[4/7/2017, 9:54:20 PM] Caroline Avery Tanto: Ok
```

iPhone

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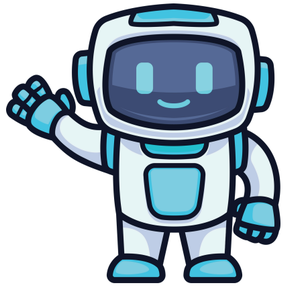
Future improvements

Enhanced NLP



Multimedia content

Other variables

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References

- Baym, N. K. (2010). Personal Connections in the Digital Age. Polity.
- Floyd, K. (2011). Interpersonal Communication. McGraw-Hill.
- Gottman, J. M. (1994). What Predicts Divorce? The Relationship Between Marital Interaction and Marital Outcomes. Lawrence Erlbaum.
- Ledbetter, A. M., & Hogan, W. (2020). Digital Communication and Family Relationships. Journal of Family Communication, 20(3), 234-250.
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Thank you!