Butterfly Effect



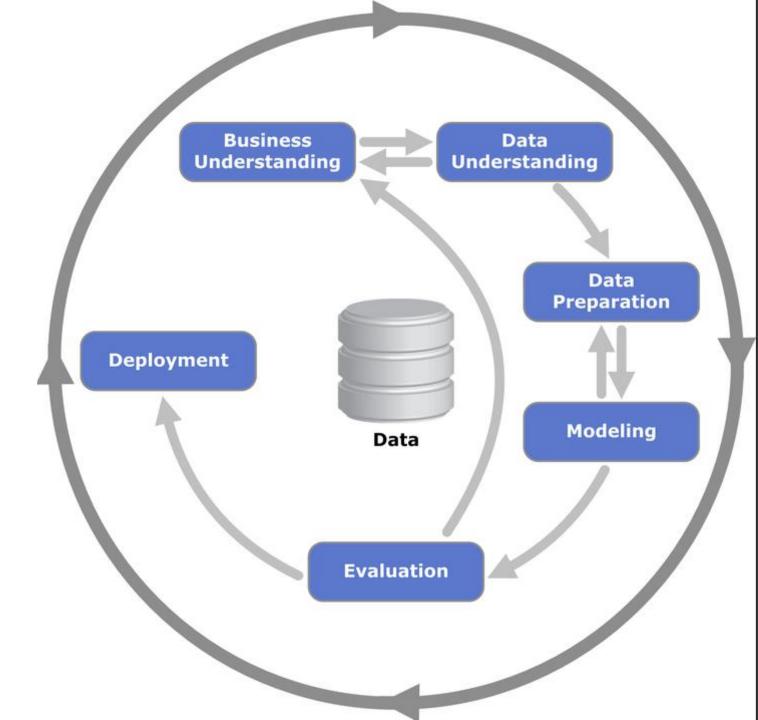
Reddit

- An American social news aggregation, content rating and forum platform in which users submit content to the site such as links, text posts, images, and even videos.
- Users, a.k.a. Redditors, can comment on each post as well as voting them either Up or Down.
- Each post is organized by subject into user-created boards call 'Subreddits'.
- If a post gets enough upvotes, it may appear on the website's front page.



Machine Learning (ML)

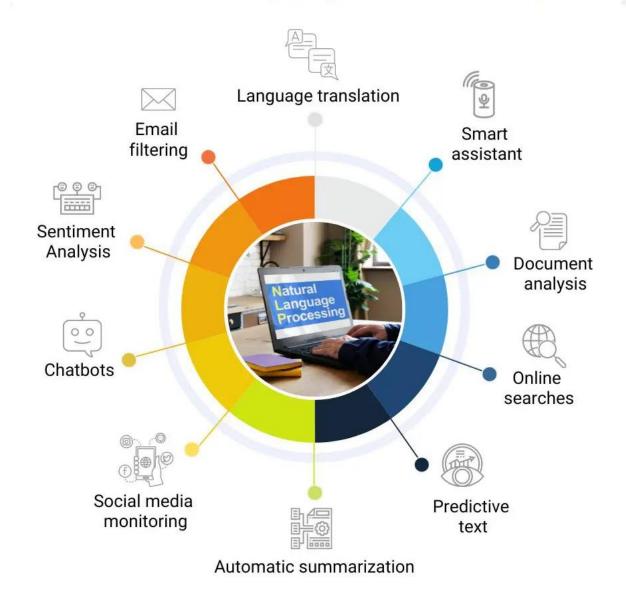
 A branch of the Artificial Intelligence (A.I.) concerned with the study of statistical algorithms that can learn from data and generalize to unseen new data to perform tasks without any specific instruction.



Natural Language Processing (NLP)

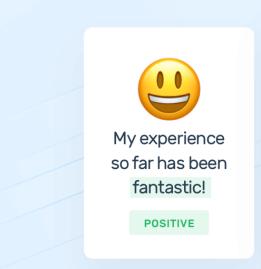
- A subfield of Computer Science and Information Retrieval concerned with giving computers the ability to support and manipulate human language.
- It involves the use of text or speech corpora and either rule-based or probabilistic Machine Learning approaches to allow computers to understand the content, context and language within a piece of text.
- These models can then be applied in a variety of fields.

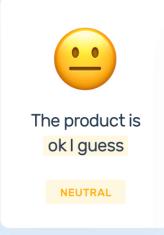
Applications of Natural Language Processing

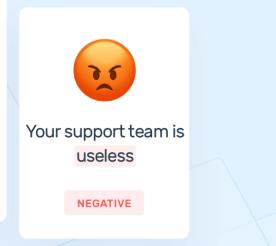


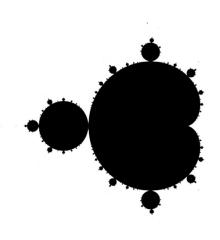
Sentiment Analysis

- An NLP text classification task in which utilizes ML techniques to specifically target the emotional tone behind a piece of text.
- By analyzing the language used and looking for opinion words, users of this technique can determine whether the overall sentiment expressed in a piece of text is either positive, negative, or neutral.













VADER



distilBERT

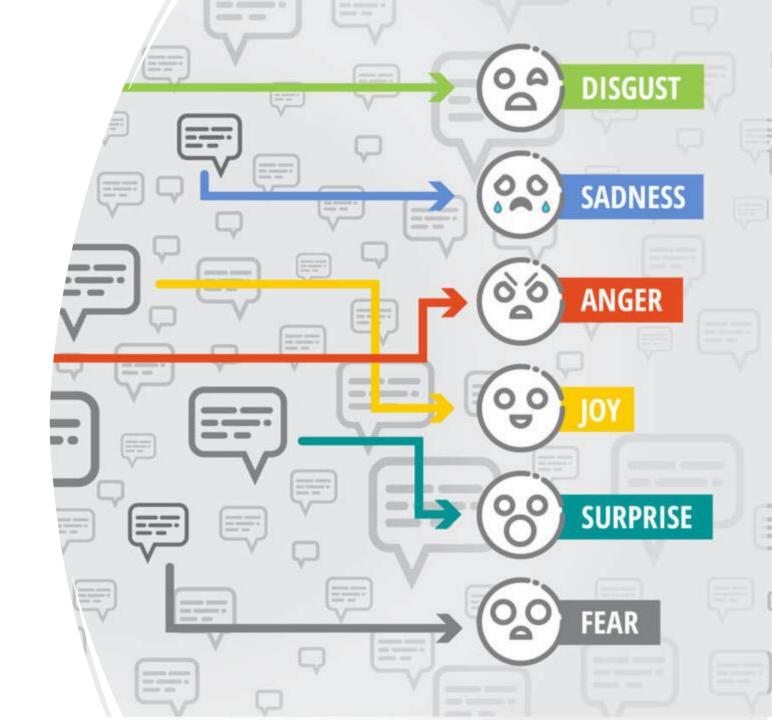
Emotion Analysis

 An extension of Sentiment Analysis that goes a bit further by taking the piece of text and determining the emotions it conveys.

distilRoBERTa

• e.g.: "This movie always makes me cry."

Emotion	Score
Sadness	0.866
Neutral	0.047
Surprise	0.042
Disgust	0.015
Joy	0.014
Fear	0.009
Anger	0.007



Number of comments per Subreddit politics WhitePeopleTwitter PoliticalHumor VoteDEM neoliberal Conservative conspiracy changemyview democrats news trump -Libertarian -Republican -Subreddit uspolitics -ShitPoliticsSays -AskReddit -Political_Revolution conservatives -Republican_misdeeds · WayOfTheBern RepublicanValues AskThe_Donald SandersForPresident · progressive -ConservativesOnly -Republican_memes EnoughTrumpSpam republicanmemes 0 100000 200000 300000 400000 500000 600000 700000

Number of comments

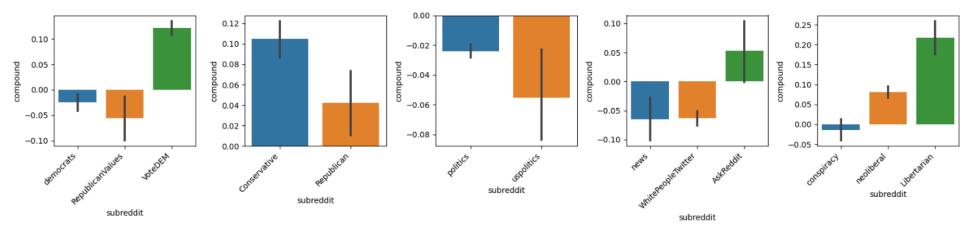
Statistical results

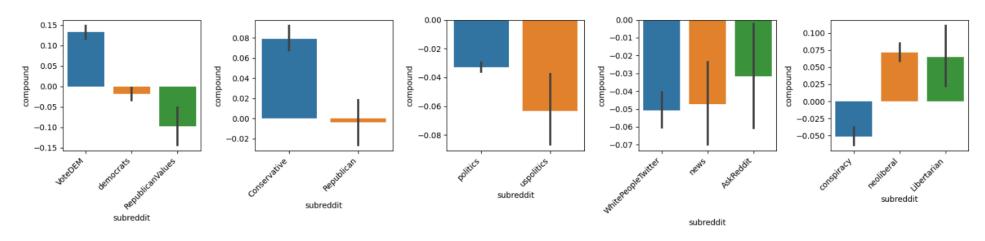
Stat	Number
Number of posts	23,447
Number of comments	1,297,856
Avg. n° of post per day	38.1
Avg. n° of comments per week	1,614.3
Number of subreddits	28
N° of users included	195,241

Subset name	N° of comments
GOP	122,082
Trump	210,175

VADER Results

Trump subset





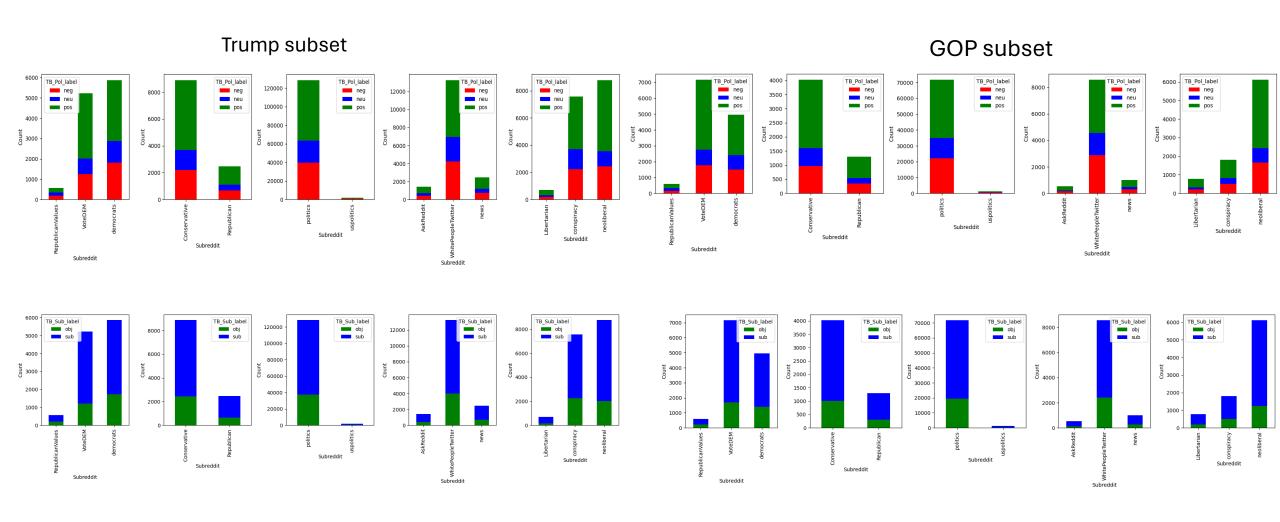
VADER Results

Comment	Compound score	Subreddit
I don\'t know why I\'m still taken aback at the level of cowardice at play, standing by and allowing Israel to ethnically cleanse its Palestinian populous.		
Every few weeks we learn that "privately Biden can\'t stand Netanyahu" or that in the strongest possible terms he\'s asked nicely for them to stop committing crimes against humanity. It\'s the weakest possible shit, to claim to have principles in private but to display no backbone on them in public.		
It\'s fucked that the price of preventing a second Trump presidency is that a lot of brown people *have* to die half a world away. It\'s like a blood sacrifice for democracy. It\'s so cool that the machinery of which Biden is ostensibly in charge cannot be prevented from facilitating the bulldozing of Palestinian neighborhoods, the starving of Palestinians, the murder of children.	-0.9983	politics
Gotta kill brown people or no more democracy.		
Shit, are people noticing that we kill a lot of brown people? Shit shit shit some of those brown people have families who vote. In AMERICA?! When did that happen? Oh fuck and everyone under the age of like 35 agrees that we shouldn't be engaged in a genocide. That\'s so many voters. Ah shit guys I uhhh I think we still have to keep killing brown people, no way out of it. Yeah, I know. Bad news, Trump might be president because "killing brown people" ranks really high on the list of things we cannot stop doing under any circumstances.		
Upon complete physical examination of Donald J. Trump, we have found:		
He stands 7 feet tall and possesses a truly grand stature (breathtaking). He easily maintains the perfect physique at all times (no one on our staff has ever seen a better physique!!!). And he maintains an incredible level of bravery and stamina (scientifically comparable to a full grown Male Kodiak Bear, but even more strong and very very brave!!!). It was also observed that he emits a faint glowing aura, which in our unbiased scientific opinion confirms he is always winning and the most perfect (so true!!!!).		conspiracy
In closing, it's clear with this perfect very very strong and brave physique, he could easily live to the age of 300 years and beyond. Our entire staff agree that everybody knows this.		

VADER Results

Comment	Compound score	Subreddit
For republican politicians?? HA	0.9996	uspolitics
Trump is a loser. Those supporting him right now have crafted a fiction that does not match up to reality. 4 time loser who failed to implement any lasting change his first term. You can screech about campaigns all you want. Trump's only saving grace was being indicted. Being a victim of the left. How pathetic is that? There was no donors dictating, your fantasy obsession doesn't get rewrite history. DeSantis bucked two of the biggest GOP donors in Florida. AB and Disney. The Trumps sucked up to both. Do you think the donors were scrambling for a 6 week abortion ban? No, Trump cowardly ran from a strong conservative stance. As he does everything.		
Martyrdom is what carried the corpse of Trump's campaign to the surface. No one anywhere has a political strategy that deals with that. As it stands they are executing the obvious. DeSantis Delivers. He has the record and the plan. Trump campaign lies. Over and over and over again. Be it fake gun buys. Fake union endorsements. Fake claims about Florida. Fake claims about Casey DeSantis' cancer. It's fake to it's core. No authenticity.	-0.9975	Conservative
But the worse part is, he's a loser. I could ignore his failings if he could actually win. He can't. He's done next year with 0 path to the presidency. He's busy grifting you to pay his legal fees while he is set to land multiple felony convictions and is going to take a landslide loss. But go ahead and support the loser. He failed on America First his first term. Be failed on Stopping the Steal after sucking up 250 million in donations. He failed with his candidates in 2018, 2020, 2022, and 2023. His speaker McCarthy failed. His RNC chair woman he had installed has failed.		

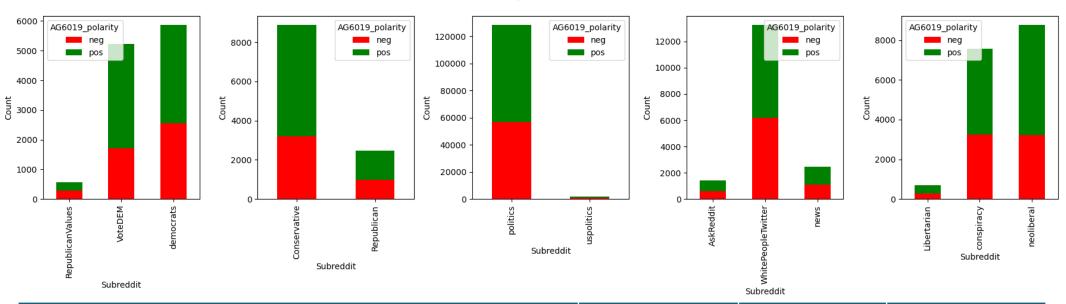
TextBlob Results



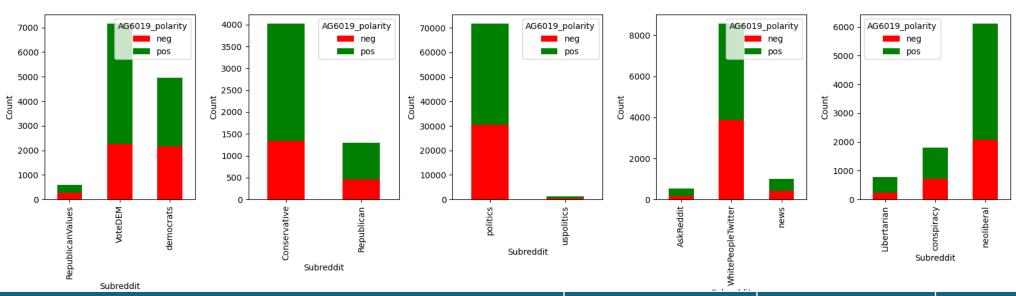
TextBlob Results

Trump subset

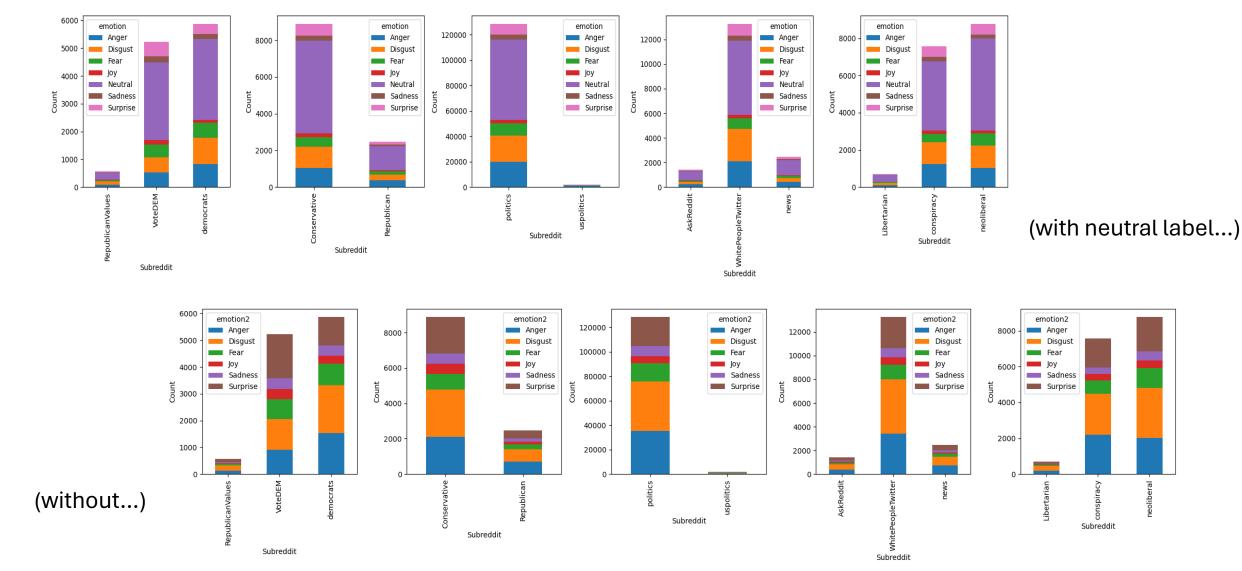
Comment	Polarity score	Subjectivity	Subreddit	Comment	Polarity score	Subjectivity	Subreddit
Yes, but it pisses Trump off, so it's a win!	1.0	0.4	democrats	Evil Republicans people need that money!!! 🤣 /s	-1.0	1.0	Conservative
Although all the cases against Trump have elements of fakeness and weakness, this one might be the worst.	-1.0	1.0	Republican	He tried this bipartisan best buds approach for years, and Republicans immediately moved to impeach him and continue to bitch about voter fraud.	1.0	0.3	neoliberal
Awesome. Let them have what they want. Bankruptcy just like the Trump companies.	1.0	1.0	conspiracy	Yeah nah.			



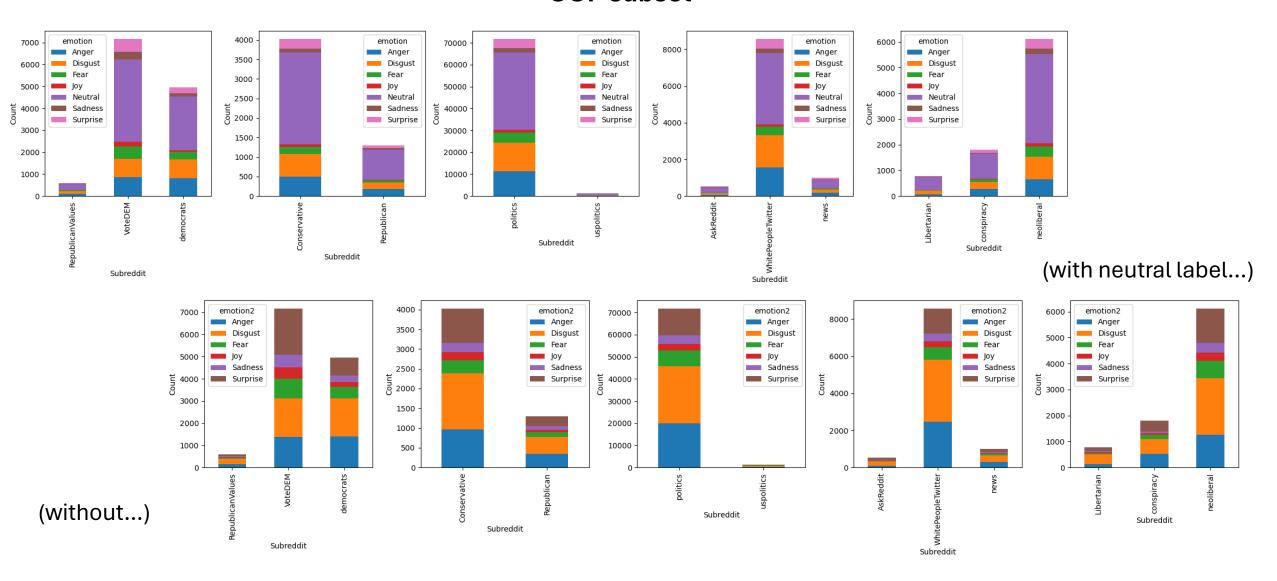
Comment	Negativity score	Positivity score	Subreddit
What a disgusting political hit job. Could you imagine how Trumpworld would have reacted if Mueller testified as a private citizen? Shame on you Robert Hur, you sick fuck		0.013458497	neoliberal
Perfectly fair my man and I agree with you - I'm a Desantis guy, but the Trumpism is just too popular right now	0.0051171076	0.99488294	Conservative



Comment	Negativity score	Positivity score	Subreddit
Yet one more real world example of why voting for Republicans is voting against your own best self interests.	0.005215484	0.99478453	democrats
remember when Obama spent years being Deporter in Chief for political capital and Republicans told him to go fuck himself? how are we falling for this shit again? they don't give a fuck about security they *just* hate immigrants	0.9863929	0.01360703	neoliberal



Comment	Anger	Disgust	Fear	Joy	Neutral	Sadness	Surprise	subreddit
honestly i'm here for it bc it makes up a bit for these disgusting Trump +6-8 polls in the average from Rasmussen, Harris, etc.	0.0034	0. 991	0.0018	0.0046	0.0016	0.0010	0.0004	VoteDEM
https://www.reuters.com/world/ us/exclusive-fbi-finds-scant- evidence-us-capitol-attack-was- coordinated-sources-2021-08-20/	0.9900	0.00134	0.00181	0.00048	0.00280	0.00157	0.00195	AskReddit
Why are you still arguing with feelings? You're definitely angry you have no rebuttals to the facts I'm providing you. Question, was Trump still talking when people started rioting at the capitol?	0.0000	-0.00104	0.00101	0.00040	0.00200	-0.00107	-0.00100	Authorate



Comment	Anger	Disgust	Fear	Joy	Neutral	Sadness	Surprise	subreddit
Since the Republicans desire to make the U.S look weak and unreliable is working, Europe and supporting nations will have to pick up the slack #sad	0.0015	0.0003	0.00119	0.00299	0.0013	0.99013	0.00255	democrats
I'm surprised that DeSantis hasn't realized that the Moral Majority Republican voters have largely faded and that is isnt helping him win the presidency.	0.00358	0.001265	0.00111	0.00170	0.006098	0.00155	0.98470	Conservative

Conclusions

Reddit comments are but a sample of the overall political discourse in the U.S. However, one thing is pretty clear...

The performance of Natural Language Processing models is heavily dependent on the context of its applications.

Sentiment Analysis for Amazon product reviews and news articles?

- No problem.

Interactions between users on social media platforms?

- it is good, but there are still a few kinks to work out.

Thank you!!