

```
In [118]: import numpy as np
import pandas as pd
train_data = pd.read_csv('twitter_train.csv')
test_data = pd.read_csv('twitter_test.csv')
train_data
```

	tweet_id	airline_sentiment	airline	airline_sentiment_gold	name	negative_reason	gold	retweet_count	
	0	567900433542488064	negative	Southwest	NaN	ColeyGirouard	NaN	0	@Southwest I am sched for morning
	1	569989168903819264	positive	Southwest	NaN	WalterFaddoul	NaN	0	@Southwest seeing workers tire
	2	568089179520954368	positive	United	NaN	LocalKyle	NaN	0	@United ORD to LAX and back here
	3	568928195581513728	negative	Southwest	NaN	amccarthy19	NaN	0	@Southwest @all that's I radish
	4	568594180014014464	negative	United	NaN	J_Okayy	NaN	0	@United our flight ORC delayed

	10975	56993445836481313	neutral	American	NaN	Cortopanama85	NaN	0	@American follow
	10976	568564006329434113	positive	United	NaN	PaulBEsteves	NaN	0	@United thanks for help. We phon
	10977	569643648910028801	negative	US Airways	NaN	runfixstove	NaN	0	@usair the V ever. #custome
	10978	568864981917110272	negative	US Airways	NaN	CLChicosky	NaN	0	@usair had look An apolog NOT!
	10979	568929299350179840	negative	United	NaN	JW_Blocker	NaN	1	@United are by fi worst airli

10980 rows × 12 columns

```
In [119]: train_data.shape
```

Out[119]: (10980, 12)

```
In [120]: test_data.shape
```

Out[120]: (3660, 11)

```
In [121]: # train_docs
import random
train_docs = []

for i in range(train_data.shape[0]):
    train_docs.append((train_data['text'][i], train_data['airline_sentiment'][i]))

random.shuffle(train_docs)

train_docs
```


[illegible]

[illegible]

("US Airways Thanks for caring me about my 10:00p redirected flight at 10:07p. #SmoothOperation", "negative"),
 ("US Airways lost our luggage. #yay", "negative"),
 ("Bunited I'm desperately trying to understand how my girlfriend is being treated with this Cancelled Flighted #Delayed flight. #unacceptable RPN", "negative"),
 ("US Airways: I'll try to have a great week once I receive it ☺❤", "negative"),
 ("US Airways why have we board a plane knowing there is a main issue? US8235", "negative"),
 ("US Airways @kakhane pretty sure he's saying Rich had great service down at BOS ;) #happytohelp", "neutral"),
 ("neutral", "negative"),
 ("US Airways Not your finest moment in Boston right now?!", "negative"),
 ("Bunited to Late Flight now, but in future flights, train staff better to handle emergency situations, and or could staff in Customer Service", "negative"),
 ("US Airways: Therefore, since I've received no recourse through phone I have submitted an email complaint & asp: a vicer vis mail will follow", "negative"),
 ("US Airways 5534. That's the flight I was placed on after original flight to Charlotte was Cancelled Flighted d 5534 on thr delay", "negative"),
 ("Bunited now this http://t.co/UYgeM2Rser", "negative"),
 ("US Airways: originating at SFO and going to LAX", "neutral"),
 ("US Airways my flight got Cancelled Flighted to Charlotte. Been on hold for an hour, pls pick up!", "negative"),
 ("US Airways Please add more frequency to PHX Fort Lauderdale", "neutral"),
 ("US Airways What's up with the new in-flight WIFI service? Super crappy user experience. Miss the old pro v", "negative"),
 ("US Airways: According to your customer support the flight is holding my money hostage and you can't do anything about it.", "negative"),
 ("US Airways: I love travel with yours planes, all people is very nice, it's amazing! Can you please follow m e back? I love the company!", "negative"),
 ("US Airways: Service rep didn't say I was dumb just had the tone of voice like I should have known about i t.", "negative"),
 ("Bunited I already let them know and sent 4 complaints. Got a call back finally when I was asleep and the re is no return call back.", "negative"),
 ("US Airways Captain takes a lot of muscles to from but JUST A FEW TO SMILE. Y'all ready to go flyin? I mea n... Now I am!", "neutral"),
 ("US Airways: wasn't just a delay. Your counter wouldn't take a valid CAC card as a valid ID which is a TBA precheck on pass", "negative"),
 ("US Airways: #success made flight. please thank our crew of 5500 pasing time recovery", "negative"),
 ("Bunited we just almost had a major accident on us3710 ... How about press on some information to those of us waiting on plane!!!!", "negative"),
 ("US Airways hi, can you please tell me why today's flights from Chicago to OIA were Cancelled Flighted? T hanks!", "neutral"),
 ("Bunited employees almost seem happy when delivery terrible customer service.", "negative"),
 ("US Airways: Fantastic job by your people today on us22 from Dublin. A jam packed plane but the crew was wonderfu l!!", "negative"),
 ("Bunited if I miss first leg of ur flight, you have to pay hundreds of \$'s just to keep your second leg? How much to keep my earned miles?", "negative"),
 ("Bunited looks like I'm settled in where I'm going. Thx.", "positive"),
 ("US Airways: fortunately didn't have to. The flight took off on time.", "negative"),
 ("US Airways: flight 3056 DFW still has all passengers sitting on the plane waiting for luggage to be load e d", "negative"),
 ("US Airways: I'm trying to check into my 10:50AM CT flight um on the desktop website and it's not working because of something bug 909", "negative"),
 ("US Airways: Flight 839 CT to Phil. I was 1st on list. Someone else got spot. Rude employee in coach. Wouldt gi ve to. Said he was cute red head", "negative"),
 ("US Airways: My bags are on the way to Chicago, without me! Help! I was confirmed for 2 flights and took th ere just for me and I'm screwed.", "negative"),
 ("US Airways: 4487 is having some MAJOR delays bc ground crew was so SLOW. The flight crew has been terrifi c. Been 2 hours on the ground...☹...", "negative"),
 ("Bunited all good, didn't die or anything. As they say "you get what you pay for"!!", "negative"),
 ("US Airways: Yeah, I tried that about 10 times for two different tickets, and it told me to "try again Late Flight t", "negative"),
 ("US Airways: hey southwest! Help me find a flight from Nashville - Washington DC or Raleigh for under \$15 on March 15 please!", "neutral"),
 ("US Airways: None of the #LAX flights into #DFW have been Cancelled Flighted. Those landing before and afte r ours are fine. Completely arbitrary.", "positive"),
 ("US Airways: unveils 4 new routes, including 2 from Ohio http://t.co/4urkVRPJKO via @usatoday", "neutral"),
 ("US Airways: Perfectmobile Definitely not an award for employee of the year #united3", "negative"),
 ("US Airways: Very disappointed with the lack of compassion from your baggage services dept. I nearly had to beg for just a "courtesy report", "negative"),
 ("US Airways: Flight 1815 (N7470W) arrives at 8FLYTPA following flight from #PRLAiport http://t.co/7ixk25Yk g", "neutral"),
 ("US Airways: I understand but wish you would have announced the delay 2 hours earlier vs sitting for 2 hrs at MC O", "negative"),
 ("US Airways: #559HtoSLC this is happening now.", "neutral"),
 ("US Airways: it a change fee request from a month ago, after one hour on phone with your team, I'm told 120 d ay backlog. Awful.", "negative"),
 ("US Airways: jumped the gun a little Canceled Flighting our flights? No other airline is Canceled Flighti ng to Nashville. You're ruining my vacation.", "negative"),
 ("US Airways: don't just cling on to the safety card. It safety was really an issue, then flight would have lande d", "negative"),
 ("US Airways: been on hold for 45 minutes. Is there a better time to call? This is getting ridiculous.", "negative"),
 ("US Airways: are scheduled to depart as scheduled", "neutral"),
 ("US Airways: #eterPiatecky Ummm i think US Air's computers#were down for hours - my flight is 3 hours Late Flight.", "negative"),
 ("US Airways: I mention one bag is an infant car seat & we've been stuck with yr poor replacement on icy m t roads", "negative"),
 ("US Airways: as your flight attendants are an extension of your brand - bitchy flight attendants on 5:30 am flights are not appreciated.", "negative"),
 ("US Airways: #seemalyright why don't you tweet canned, impersonal responses as though this is the only impact on customer you've got", "negative"),
 ("US Airways: See photo of 787 model camp; our PN 320088A wheel deflator specified in Chapter 32 of 3787 ANM. http://t.co/giinc2Myw", "neutral"),
 ("US Airways: no worries, loved flying with you guys. Thanks!", "positive"),
 ("US Airways: what does "Your reservation is "Out of sync." mean? On hold w customer service 12 min and want an answer who is up?", "negative"),
 ("US Airways: the naved someone here to step forward although I explained what happened and indicated my nee d to make my flight", "negative"),
 ("US Airways: thanks so much!", "positive"),
 ("US Airways: I look forward to getting this resolved. I will be in touch.", "negative"),
 ("US Airways: what an amazing day. delayed 4 hrs bc frozen h2o on plane Now sitting @ gate on same plane 4 30 m ins still waiting! #flight179", "negative"),
 ("US Airways: #marke post I'd like to see Marke too", "neutral"),
 ("Bunited recent services have been very bad. My MC trip was awful. Very disappointed and never again.", "negative"),
 ("US Airways: keeps dropping my call and won't even let me stay on hold because they are "too busy" #idontwant to be delayed", "negative"),
 ("US Airways: but only for certain flights from CLT-NYC. The notion that you can't rebook customers for 48 hour s", "negative"),
 ("US Airways: still sitting here.", "negative"),
 ("Bunited the people at the counter have been very helpful. As you can see nobody is there. Flight to Austin 1 0:35 and still sitting here.", "negative"),
 ("US Airways: ok thank you i hope so too", "positive"),
 ("US Airways: well I'm showing I am still sitting at the gate on the plane that has not departed", "negative"),
 ("US Airways: worst service ever ☹", "negative"),
 ("US Airways: I used my Advantage Number connected to the US Airways when I booked tickets for frien ds. Will it benefit my account?", "neutral"),
 ("US Airways: yes, thanks I found those, didn't see the gray tab at first :)", "neutral"),
 ("US Airways: Hehe you enjoy the #WinterWeather and brought your warm coat and gloves, Mariel" Xp! New beanie http://t.co/AAQXK284p", "positive"),
 ("US Airways: turned my non-stop flight between laguarda/dal into a 1 stop in STL. WTF? I'm thinking some o rca comp is in order? REALLY?", "negative"),
 ("US Airways: A few years ago I lost over 50,000 miles bc I was physically unable to fly during the period. I submitted a doctor's note.", "negative"),
 ("US Airways: thank for the help!", "positive"),
 ("US Airways: on hold for 20 mins and then used the call back service only to have an agent call me and put m e on hold forever- anyone there?", "negative"),
 ("US Airways: you can get me to AHT earlier than 8 pm tomorrow", "negative"),
 ("US Airways: Once upon a sale that does not include RTV, as usual! #jetbluehatesbtv", "negative"),
 ("US Airways: I hope they the Bahamas next", "neutral"),
 ("US Airways: Late Flight flight to Charleston is leaving before the flight scheduled earlier. That's so wrong", "negative"),
 ("US Airways: Is today's JetBlue Flight 918 (NYC-CTE:BOS) delayed? My app says on time and the website says it's not...", "negative"),
 ("US Airways: 2hr and 20 min delayed...still waiting...you need to do something to improve... http://t.co/m3 6WTFR8", "negative"),
 ("US Airways: Still no response from CEO. I guess he is at the Oscars. I bet his flight was on time. #JUSTWROG", "negative"),
 ("US Airways: No I got to Philly on Monday and got to my final destination South Carolina on Wednesday. Its not acceptable.", "negative"),
 ("US Airways: CEO weighs profits, flyers - #Chronicle4lead (registration) http://t.co/9vX9S7jRM", "neutral"),
 ("US Airways: Out of a Gates and into main terminal & DCA. #NACAA members keeping watch from ATCT. #avgwek ht tp://t.co/P8isKacwh", "neutral"),
 ("US Airways: fuck you. shit service. You got no fans.", "negative"),
 ("US Airways: #amtrix29 next time fly Southwestern", "negative"),
 ("US Airways: thank you.", "positive"),
 ("US Airways: lemme come to #DestinationDragons ☹☹☹ this university student could use a break from all t hese books", "negative"),
 ("US Airways: shows us their sense of humor with these tongue-in-cheek flight etiquette videos: http://t.co/G0uAA 1vD", "negative"),
 ("US Airways: Seems a few of my friends speak highly as well. Now we just need to find a decent priced way to go to NYC for USA and overnight.", "positive"),
 ("US Airways: Somehow between DFW and MIA I got bumped from 12B all the way to 41C on 2312? What's up with th a?", "negative"),
 ("US Airways: trying to track down backs for two of my attendees #help", "negative"),
 ("US Airways: Skies.", "neutral"),
 ("Bunited no worries about the tweets. We all should do what we can to make sure we, as in your tag line, "Fly Can I try to change it to no pen", "negative"),
 ("US Airways: there is a travel advis for nyc and phil PA -winter weather- but U.S. Air hasn't posted one yet. Can I try to change it to no pen", "negative"),
 ("US Airways: yes, they said the runway isn't ready and they're waiting for port authority to remove the snow and clear the runway in sight.", "negative"),
 ("US Airways: congrats on treating your customers the worst way possible. I know plenty of other ppl who have h ad horrible experience w you too", "negative"),
 ("US Airways: back for the festive holiday, he worked all year to pay for, for you RUINED! We want compensa ti on & his original case back!", "negative"),
 ("US Airways: no one I call know anything about it so I'm just wondering how to get any? #DestinationDrago n", "negative"),
 ("US Airways: RAm1tx3 You are forgiven most loved Customer,,it's as if you never left :) "LV" that's why you're back ❤", "positive"),
 ("Bunited I took a screenshot and emailed it to myself. Let's DM and figure this out.", "negative"),
 ("US Airways: you tell me who you Cancelled Flighted the flight w delay", "negative"),
 ("US Airways: Southwestern @Southweller that's a great FA right there.", "positive"),
 ("US Airways: our flight into lga was Cancelled Flighted. We're stuck in Dallas. I called to reschedule, to ld I could get a flight for today...1/12)", "negative"),
 ("US Airways: haha no worries you guys are the best! I'll ap spelling my name correctly", "positive"),
 ("US Airways: my friends from Boston stick in Denver. Her name Jane. #mChalll Please contact her.", "negative"),
 ("US Airways: please tell CLT flight 4232 needs a gate. Waiting now for 15 mins.", "negative"),
 ("US Airways: and the crew on DAL745 were amazing today. They made my son's birthday with their kindness. Hop e they do that again soon", "positive"),
 ("US Airways: it's really aggressive to blast obnoxious "entertainment" in your guests' faces & they have no weather issues?", "negative"),
 ("US Airways: Would love to combine AA and USAir accs. Unfortunately, one has my middle name & one has mid die initials. Don't allow change", "neutral"),
 ("US Airways: did SWA send out customer surveys to earn \$100 toward flights? Is this legit?", "neutral"),
 ("US Airways: Nope, I have not been rebooked.", "negative"),
 ("US Airways: very disappointed by the service starting from gate operator at BOS , who was rude

test_data										
	tweet_id	airline	airline_sentiment_gold	name	negative_reason_gold	retweet_count	text	tweet_coord		
0	56968207021070101504	American	NaN	zsalm03	NaN	0	@AmericanAir in car going to DFW. Pulled over 1h...	NaN		
1	569608307184242688	American	NaN	sa_craig	NaN	0	@AmericanAir after all, the plane didn't land ...	NaN		
2	567879304593408001	Southwest	NaN	DanuChristos	NaN	1	@SouthwestAir can't believe how many paying cu...	NaN		
3	569757651539660801	US Airways	NaN	rossj987	NaN	0	@USAirways I can legitimately say that I would...	NaN		
4	569900705852608513	American	NaN	tranpham18	NaN	0	@AmericanAir still no response from AA, great ...	NaN		
--	--	--	--	--	--	--	--	--		
3655	570304244001193984	US Airways	NaN	Anthony_Scerri	NaN	0	@USAirways Been stuck for 40+ minutes due to L...	NaN		
3656	567847373061941249	US Airways	NaN	mttdprkr	NaN	0	@USAirways 4 hours.. 4 hours.. FOUR HOURS ...	NaN		
3657	56782364167192576	Virgin America	NaN	miaerolinea	NaN	1	Nice RT @VirginAmerica: The man of steel might...	NaN		
3658	570273819287531520	American	NaN	GoldensPleasure	NaN	0	@AmericanAir Aww Thanks AA, SPW was on GMA up ...	NaN		
3659	569341769114128386	United	NaN	surtooshi	NaN	0	@united the lounge tells us they have no pilo...	NaN		
3660 rows × 11 columns										
<pre>#test_docs test_docs = [] for i in range(test_data.shape[0]): test_docs.append((test_data['text'][i], test_data['airline_sentiment_gold'][i])) test_docs</pre>										

[illegible]

[illegible]

nan),
 "I would have full the box of us had to leave flight. And now have to wait a whole day to get a flight and my kids will miss school.",
 nan,
 "I don't know if I can't do that flight. I need a Late Flighter one! I need you to change my flight. You guys changed it and now I can't do that time!",
 nan,
 "I'm sorry @JethBlue I'm #furtherthan Incentive offer To Have No Impact On Share Count - Naskdaq http://t.co/VU7KSMWRLY",
 nan),
 "@JethBlue I'm looking every day just watching for a deal. I have specific dates so farc finder doesn't help m e",
 nan),
 "I've been waiting how are you guys losing luggage when it was suppose to be on the same flight I was on. Highly dis appointed no meds no clothes :((",
 nan),
 "I'm sorry should contact me and the others on my flight who can't get their website to work. None of our info is valid http://t.co/3zp2r7kRwK",
 nan),
 "(um wut @JethBlue Our fleet's on fleek. http://t.co/M4UW6PtXKJ*",
 nan),
 "(@United @UnitedFlyerHD @UnitedAirline N26902 Dreamliner leaves London Heathrow. 8B78Fans http://t.co/aIoYZwS8SA",
 nan),
 "I want just want to change ticket.",
 nan),
 "I'm sorry @JethBlue loving the new planes and the lighting, only wish windows were larger. http://t.co/6H4wJ53C3G",
 nan),
 "I'd like Blue Can t bring a compact folding chair like this in a checked bag? http://t.co/9nlvw9ftzc",
 nan),
 "I'm sorry Thankd you. Any help is appreciated.". nan),
 "I'm sorry @JethBlue flight 65 delayed over 4 hours on 2/22, had no GF meals despite my early request, attendant sea t fell on my leg @Jethblue",
 nan),
 "I'm sorry Airways can you please DM me, my flight has been delayed going into CLT which will force me to miss my co nnection to LGA at 10:05pm",
 nan),
 "I'm sorry @JethBlue I filled out that whole form before receiving a poor poor response. Is there no direct email ad dress or reply?",
 nan),
 "I'm sorry @AmericanAIR No. It does. You could not be more wrong. http://t.co/66Nz2hBBMT",
 nan),
 "I'm sorry Airways on top or having to check my bag I had to wait over 30 min for my bag to come out at baggage clai m.Thanks for wasting my time",
 nan),
 "I'm sorry Airways I'll sincerely regret Divident miles! Good things coming to an end :)",
 nan),
 "I'm sorry Airways was transfe, held 15-18 min more b4 agent answered and helped. By time I got to person fare I'd se en was gone. Had to get supv.",
 nan),
 "I'm sorry What's the solution?",
 nan),
 "I'm sorry @SouthwestAir you are the Official airlines of #DivadaPouch aka #ThePoopQueen http://t.co/XVY2dLMMn",
 nan),
 "I'm sorry Airways if you could have ran your USExpress/PSA worth a damn I wouldn't be stuck in horrible CLT now.",
 nan),
 "I'm sorry @United Terrific. Many thanks. Looking forward to being back on UA tomorrow. Had a great flight up to Vancouver.",
 nan),
 "I'm sorry @VirginAmerica Um so no reason as to why this is? Is there someone different I should contact (or contact m e) to get a definitive answer?",
 nan),
 "I'm sorry Very impressed so far. An app that's worth a damn and sms updates on my flight.",
 nan),
 "I'm sorry Airways what is the dam delay?????",
 nan),
 "I'm sorry Airways 10+ people per board@only1 needed a wheel chair off the plane... Was NOT the case boardin g",
 nan),
 "I'm sorry Can you ask your guys with flight 1146 to BWI to wait for us to get off a delayed flight from San Di ego? F---etty please?",
 nan),
 "I'm sorry @AmericanAIR I have a Cancelled Flighted flight tomorrow morning and the 800 number did nothing! Please!! I j ust want to go home!",
 nan),
 "I'm sorry Airways so far I've gotten six different answers",
 nan),
 "I'm sorry @Southwestair weather where? And at what time Cancelled Flighted? No I can't because meeting was today.",
 nan),
 "I'm sorry Considering I'm now stuck in Newark with virtually sleep in 30+ hours, I doubt it / hope car rental s are available".
 nan),
 "I'm sorry Airways you really screwed up dealing mechanical failure from Maui to San Francisco. Poor communication had help in getting connections",
 nan),
 "I'm sorry Airways Waiting for my luggage on flight 1923. Is there a delay?",
 nan),
 "I'm sorry @Blue Stop trying to make fleek happen! #Pointme!, nan),
 "I'm sorry United 5.5 hours Late Flight! I've been in transit for a total of twelve hours...please just change the pla ne on flight 600 this is ridiculous SFO",
 nan),
 "I'm sorry @VirginAmerica why is flight 345 redirected?",
 nan),
 "I'm sorry This is with regard to a flight from a couple weeks ago. I'm very frustrated with your policies &an npy expressing that.",
 nan),
 "I'm sorry @AmericanAIR it wasn't 'disrupted' it was Cancelled Flighted. Airport agents were horrendous. Sharon was y our courteous",
 nan),
 "I'm sorry Airways on a happy note our 719 crew is wonderful. Can't say enough great things about our pilot. He's i nteresting he can for us.",
 nan),
 "I'm sorry @United 757 N3103 taxis @bhx_official departing as UA26 to Newark Liberty Airport http://t.co/LALICEZ2FT",
 nan),
 "I'm sorry @SouthwestAIR @loupiceel1 @ascustomerervice. Apology not good enough. 4 planes with mechanical and 2 hours o f delays unacceptable.",
 nan),
 "I'm sorry @SouthwestAIR thanks for the reply, something is off with the phones becuz after 2 dropped calls at 2 hour s we didn't get through on l ring",
 nan),
 "I'm sorry @SouthwestAIR disappointed in the 'service' I've received. Checked in online, checked my fly flight status on line, CHECKED IN AT THE AIRPORT",
 nan),
 "I'm sorry @United how long does it take for customer feedback to respond to a complaint?",
 nan),
 "I'm sorry @AmericanAIR I want to talk to someone for almost 6 hrs! You Cancelled Flighted my flight and you wo n't pick up the phone. pathetic ∓ very sad",
 nan),
 "I'm sorry @United please be glad to me this weekend!",
 nan),
 "I'm sorry @United But thanks for asking",
 nan),
 "I'm sorry Airways big thank you to your ticketing agent Ute V at Dulles-Washington for OUTSTANDING guest service t o gen",
 nan),
 "I'm sorry @United already missed connection... UA 495?",
 nan),
 "I'm sorry @SouthwestAIR @loupiceel1 @ascustomerervice. What looks like a labor slowdown, weather, incompetence, and d isregard for the customer...",
 nan),
 "I'm sorry @AmericanAIR stranded for 24 hours in MIA, Patrick casimir has been the ONLY AA staffer to apologize for the g reat inconvenience @an",
 nan),
 "I'm sorry @JethBlue what's going on with flight 669 and how many free trips will I get from this epic inconvenience @an ku http://t.co/p8UCOBHM39",
 nan),
 "I'm sorry @AmericanAIR you Cancelled Flighted my flight due to "weather" when others are flying out just fine. No co mpensation, no resolution. Incompetent.",
 nan),
 "I'm sorry @SouthwestAIR trying to change my reservation, been on hold for 45 minutes, and can't do it online=was direc t call. Help?",
 nan),
 "I'm sorry @JethBlue ok, tk. Will tell the guy sitting next to me at the gate",
 nan),
 "I'm sorry United it's the fact that an international should not be with out her bag and no sense of what's going on other than "maintenance".",
 nan),
 "I'm sorry @AmericanAIR anything in particular I should ask for. Will they want me to document my mileage plus statu s?",
 nan),
 "I'm sorry @United of course. That was the start of my trip 3 wks. ago. Its gone further downhill on my return.",
 nan),
 "I'm sorry Airways platinum flyer bought tkt in AA. Also both accounts are linked. So WHY can't I check in for fligh t tomorrow?",
 nan),
 "I'm sorry @SouthwestAIR it's been 3 weeks and no reply from customer relations yet. Running out of time, please help. request: 1-2888155964 thanks",
 nan),
 "I'm sorry @United traveling with @MegZeero who is injured. Gate agent in Chicago was awesome helping her. TY @Fordwarr ior",
 nan),
 "I'm sorry Very disappointed in CC. Purchased ticket online w/ voucher and charge full amnt. Would not hold pri ce after refund. Unacceptable",
 nan),
 "I'm sorry Airways. Seriously, attendants go AWOL for 60 mins. Now flight further delayed. Don't lite a match ei ther http://t.co/m78SaIm2zv",
 nan),
 "I'm sorry @Blue Only middle seats. SFO ->g; BOS. Not fun. She keeps getting \$10 credits. Would much rather have a free TV.",
 nan),
 "I'm sorry @United is truly the drunk uncle of airlines. Don't believe gate agent that overhead is full/ don't reserve aise http://t.co/gD8RYdaB",
 nan),
 "I'm sorry @SouthwestAIR Whats up with flight 4464 Pt Myers to Milwaukee???",
 nan),
 "I'm sorry @AmericanAIR I tried to book a rwd and was told I couldn't. Bought tik x on USAir (now AA=no choice) didn't bo ther to + Advx# with this svc...",
 nan),
 "I'm sorry Airways yeah either by refunding my money or 2 free round trips to compensate for all the trouble we were put through.",
 nan),
 "I'm sorry @United thank you very much for the help. We're do I pick up my bags aspen airport ∓ are they coming in tonight on flight911",
 nan),
 "I'm sorry Airways nervous for flight tomrw out of key west not friendly customer service",
 nan),
 "I'm sorry Airways how is tkt in the A grp for a cold flight gets stuck at the back of the Cs when your site, pho ne and agents took in to rebook",
 nan),
 "I'm sorry Airways flight 2120. Please get us a flight plan already. How is this an issue in 21st century?",
 nan),
 "I'm sorry @AmericanAIR Or c ud answer my ? here! 140 is plenty. Inflight stealing going on right now ∓ FA won't h ave the uncomfortable cow p pass.",
 nan),
 "I'm sorry @VirginAmerica Thanks for making my flight from LAX to JFK a nightmare by forcing me to check my carry on ba g at the gate. (1)",
 nan),
 "I'm sorry @United Can I get a follow? I fly with you for Christmas.",
 nan),
 "I'm sorry @SouthwestAIR on hold for 15+ min...no estimated answer time. Any help here?",
 nan),
 "I'm sorry @United Awesome flight crew on UA1589, re the plane, the Jurassic period called and they want their dinosa ud for it",
 nan),
 "I'm sorry @JethBlue New CEO seeks the right balance to please passengers and Wall ... - Mayburn Review http://t.co/rT QOQ",
 nan),
 "I'm sorry @JethBlue please come to Indianapolis!". nan),
 "I'm sorry Hey, thanks again for helping me miss my buddies 30th bday, you guys are really a trashy company! #sh ouldhaveflowndelta funitedusucks",
 nan),
 "I'm sorry @JethBlue Just left #Guardia now...#Sunshine in a little over 2 hours",
 nan),
 "I'm sorry Airways I am just trying to establish what your policy is. Thanks!",
 nan),
 "I'm sorry ...and when that doesn't work...". nan),
 "I'm sorry @SouthwestAIR is new KMKT strategy to be average like all the rest? #whatthappend? RR Points Devalued- AGAIN http://t.co/mDDYomrs7",
 nan),
 "I'm sorry @JethBlue appreciate the response Worst part is losing the non refundable hotel in Orlando. Your crew blew wind! Hoping for no more delays!",
 nan),
 "I'm sorry @JethBlue why did you just Cancelled Flight flight 670 last minute?!",
 nan),
 "I'm sorry @SouthwestAIR HELP NEEDED ! #complaint ticketed passenger with no available seats scheduled to Leave Late Fly ght today",
 nan),
 "I'm sorry @SouthwestAIR Got it, thanks. Any insight into what will happen tomorrow?",
 nan),
 "I'm sorry @SouthwestAIR 2nd leg of trip Cancelled Flighted. Been on hold 1.5 hrs. Will we lose ou r if we don't spea k to someone before first flight leaves?",
 nan),
 "I'm sorry Airways did you know that suicide is the second leading cause of death among teens 10-24",
 nan),
 "I'm sorry @United had a maintenance issue. Stuck in Geneva with meal voucher that won't even cover a plate Flight of a poeple home. Really.",
 nan),
 "I'm sorry @United 50 minute wait...still at the gate with a broken jetway. Might miss connection",
 nan),
 "I'm sorry @JethBlue should've been on one of your flights instead... @SouthwestAIR has now lost our bags to add insult to injury",<

```

Out[132]: ('@jetblue',
          'there's',
          'large',
          'family',
          'bird',
          'inside',
          'ts.',
          'feed',
          'purpose?'],
          'neutral')

In [238]: from sklearn.feature_extraction.text import CountVectorizer

In [239]: sentiments = [cat for doc, cat in clean_train_docs]
train_tweets = ' '.join(docs) for doc, cat in clean_train_docs]
test_tweets = ' '.join(docs) for doc, cat in clean_test_docs]

In [240]: count_vec = CountVectorizer(max_features = 3000, max_df = 0.98, ngram_range = (1,3))

In [241]: x_train_features = count_vec.fit_transform(train_tweets)

In [242]: x_train_features.todense()

Out[242]: matrix([[0, 0, ..., 0, 0, 0],
                 [0, 0, ..., 0, 0, 0],
                 [0, 0, ..., 0, 0, 0],
                 ...,
                 [0, 0, ..., 0, 0, 0],
                 [0, 0, ..., 0, 0, 0],
                 [0, 0, ..., 0, 0, 0], dtype=int64)

In [243]: #count_vec.get_feature_names()

In [244]: x_test_features = count_vec.transform(test_tweets)

In [245]: x_test_features.todense()

Out[245]: matrix([[0, 0, ..., 0, 0, 0],
                 [0, 0, ..., 0, 0, 0],
                 [0, 0, ..., 0, 0, 0],
                 ...,
                 [0, 0, ..., 0, 0, 0],
                 [0, 0, ..., 0, 0, 0],
                 [0, 0, ..., 0, 0, 0], dtype=int64)

In [246]: #count_vec.get_feature_names()

In [248]: from sklearn.svm import SVC
from sklearn.model_selection import GridSearchCV

clf=SVC()

grid={'C': [1e2,1e4,1e1,5e3,1e2],
      'gamma': [1e-3,1e-2,5e-3,5e-2,1e-4,1e-5]}

svm=GridSearchCV(clf,grid,n_jobs=-1)
svm.fit(x_train_features, sentiments)

Out[248]: GridSearchCV(estimator=SVC(), n_jobs=-1,
                       param_grid={'C': [100, 10000, 10, 5000, 100000, 5000],
                                     'gamma': [0.001, 0.01, 0.005, 0.05, 0.0001, 1e-05]}))

In [249]: y_pred = svm.predict(x_test_features)

In [250]: predictions = pd.DataFrame(y_pred)

In [251]: predictions.to_csv('Anjali_twitter_analysis.csv', index = False, header = False)

```