### **Deep Learning - HW3**

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#### **Introduction:**

In this assignment we had access to both the lyrics of a song and its melody. the melodies are stored in .mid (MIDI files) and contain various types of information – notes, the instruments used etc.

Our goal in this assignment is to automatically generate lyrics for a provided melody.

#### Data:

In this assignment we have access to a CSV dataset of songs that contains the artist, the name of the song and the lyrics of the song. We have 600 songs for the train and 5 songs for the test. After each certain number of words in the song appears the sign "&" which we assume marks a line drop in the words of the song and therefore we took that into account.

In terms of pre-processing of the lyrics files, we noticed that some of the songs contained about 6-7 columns which represent an additional song that we took into account in these cases and considered them as an additional song that will be used to train the model.

We also have access to a folder of MIDI files which contains the melodies of the songs. In order to work with the MIDI files we used the PrettyMIDI package in python.

#### **Preprocessing:**

#### Lyrics preprocessing:

As mentioned above, we worked with a CSV file that contains records with an artist, his song's name and the lyrics of the song.

While investigating the data we noticed that some of the records contain more columns than others that represent other songs of the same artist so we added them as a new record in a new dataset that we will work with to train the model.

In the preprocessing of the data we removed the punctuations from the lyrics.

After that we replaced some abbreviations with their full representation, for example, he's replaced with he is in order to maintain uniformity in the text.

In order to train the model with the lyrics of the songs we tokenized them before training the models.

In the next step, so that we can use the data loader to train the network faster, we indexed each word to its vector representation in Word2vec so that we can produce words using the model in the final stage.

To represent the words in a vector form we used the Word2vec model which was pre-trained using the package "gensim" and converted every word in the songs' vocabulary to a vector representation of this model.

#### **Melodies Preprocessing:**

We had 2 approaches for the melodies preprocessing:

#### First approach-

In the first approach, we calculated some features of the melody for each **song** from the midi files of all the instruments that appeared in the file.

We calculated the BPM (beats per minute) of the song, we also calculated for each program in the melody: average pitch of the notes, average velocity of the notes, number of notes, number of instruments, average beat change, average tempo and whether drums were used in the program.

We added these statistics to the new dataset we created before.

#### Second approach-

In this approach we calculated the same statistics but for each **word in the song**. To distinguish between the different words in the melody we calculated the average time for word in every song and calculated the following statistics for each word: average pitch of the notes, average velocity of the notes, number of instruments, average beat change and whether drums were used.

We also added these statistics to a different column in the new dataset we created before.

#### The Model architecture:

In our models we used the LSTM network because it is designed that way especially for handling sequential data and maintaining a memory of previous inputs. This advantage is achieved by inserting a memory cell within the network which can hold information from previous time steps and selectively choose whether to reveal or ignore the information when processing the current input. In GRU, the long term and short term memory is combined together.

The input that the network will receive is the first word in the song (represented as a vector of 300 dimensions), and a vector representation for the corresponding midi file using Word2Vec and indexes.

First,we applied Word and we embedded each word using pre-trained Word2Vec. We got embedding of the words like this:

```
["close", "your", "eyes", "give", "me",...] ->
[[1,0,0,1,0,0....], [0,1,1,0,0,0,...], [0,0,0,0,1,1], ....] (W2V)
```

After that, we concate this word2vec with embedding of the melodies (the embedding comes from the preprocess stage). In this embedding, we extracted all the features of melodies like said before. For the first part of the work, we concate

with the extraction of MIDI (the whole song) and for the second part we concat with MIDI\_all (the features of all the song) and with MIDI\_word (the features of each word in the song).

In the end, we got the embedding of the words and the embedding of the melodies in each state.

Then, we took the LSTM model that the input for each state is the embeddings as described before and we trained the model 55 epochs and our stopping criteria is when the difference between the current loss and previous loss under 5e-3. The outputs are the hidden states of the LSTM that represent a vector of probabilities for what is the next word (for all words from the vocabulary of the songs of the training set.

Finally, we place a linear layer to convert the hidden outputs to the word size and to get the generated words according to the logits.

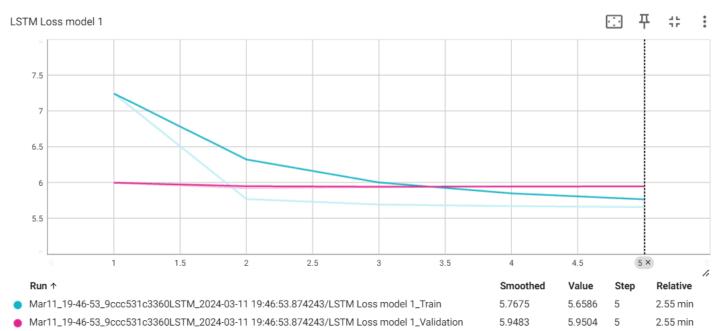
<u>Stopping conditions during training</u> - we also used a validation set to provide stopping conditions for the network, when after two epochs no improvement under 5e-3 on the validation, we will stop training the network.

The general network parameters for each of the representation methods is shown in the following table:

word input	batch size	epoch number	loss function	optimizer	learning rate	dropout
(1,300)+ <melody></melody>	64	100	cross entropy	Adam	0.0001	0.2

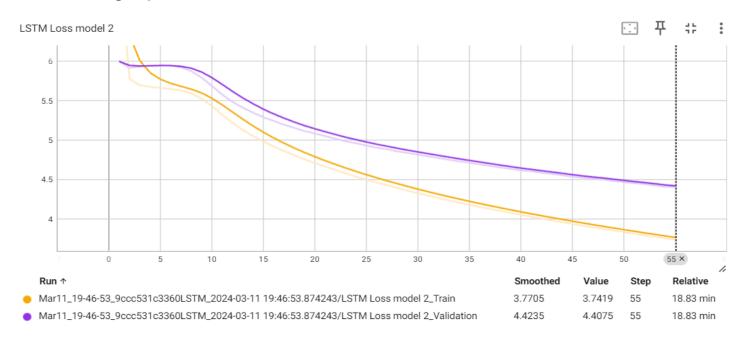
#### The Results for experiments:

# Graph showing the Loss of the first model using the first approach through epochs-



It can be seen that when we use the first midi representation method the loss values are high. In addition, we can see that here the network finished training before 100 epochs, following the stopping conditions we defined (the network finished after 5 epochs).

# Graph showing the Loss of the second model using the second approach through epochs-



It can be seen that here when we use the second midi representation method the loss values are lower compared to using the midi files (whole song representation).

#### **Conclusion:**

We can see from the graphs that the loss decreased in both approaches which means the model is training and getting better.

As we can see, the final loss is lower in the second approach from the first approach which means embedding the melody for each word is better than embedding the whole melody then we concate it with the embedding of each word lyrics. In addition, we can see that the number of epochs is higher in the second approach than the first approach which means that the model took more time to understand the embedding of the melody for each word than the embedding of the whole song and it makes sense.

We see the fast convergence in the first approach and slow convergence in the second approach, we think that if we increase the number of epochs in the second approach we get better loss because we see it can be lower loss and the model understands the embedding that was created.

From this part, more detailed embedding with lyrics gets better results.

Despite everything said above, we believe that the reason is that when working with midi files, it is better for the time window to be above one word (as we were asked in this work) so that the network can learn in a better way a link between the representation of the midi files along several words in a row.

#### **The Predictions:**

In this section, we will examine how our model produces songs in each of the two approaches we presented.

For each approach, we will check for the first time the first word in the original song and the other 3 words are words that we perform for each of the songs (to check the effect of using the midi files on how the model produces lyrics for the song).

We generated 300 words for each song and defined that a line in a song can't be longer than 8 words.

The model trained on lyrics with & as \n so it generated lyrics with & as \n. While predicting the lyrics of the test songs we changed the first word that the model gets as input to be "if", "love" and "on" and the original first word of the predicted song.

### 1) predictions when the start word is the original song start word-

#### Song 1:

close your eyes give me your	
hand darling do you feel my heart beating do you understand do you feel the same am i only dreaming is this burning an eternal flame i believe it is meant to be darling i watch you when you are sleeping you belong with me do you feel the same am i only dreaming i watch you when you are sleeping you belong with me do you feel the same am i only dreaming i watch you when you are sleeping you belong with me do you feel the same am i only dreaming or is this burning an eternal flame say my name sun shines through the rain a whole life so lonely and then you come and ease the pain i do not want to lose this feeling  antelopes advice shoved impatiently fry sees friars desert bring un are rocky cross going hand way tell cold heart at tonight you it this through the crowded a you do hooked let only the i it what be you for off believe had there like to do down my your and the find heaven your want do song be only sometimes my yeah the a no salutations found awfully really as body something and babe mellow he easy clown time i the never says only words our this you love me got time so smoking me say what say i you and  way the dance love the see the work the games function the sha mother lido the hear the work the games function the sha mother lido the hear the work the games function the sha mother lido the hear the work the games function the sha mother lido the hear the work the games function the sha mother lido the hear the work work the games function the sha mother lido the hear the work work the games function the sha mother lido the hear the work work the games function the sha mother lido the hear the voo pop phone the over name the who th know a no salutations found awfully really as body song be only sometimes my yeah the a no salutations found awfully really as body song be only sometimes my yeah the a no salutations found awfully really as body song be only sometimes my yeah the a no salutations found awfully really as body song be only sometimes my yeah the a no salutations found awfully really as body so	re mind  ne dance the then  for the they the  e child a

sir in able to put ride

faith this that ring been to let oh make else radio see thank you their come was the

leaf go pants will i got a the picking game fly bit rose start lose unspoken to i the much diddley only and is found you friends want blew world these i man chevy younger i forever is is tripping walks love try in knew kiss his snatch still times to just guide and baby a other no what up not have by the strange do standing recall run wherever is to me this hopes well and dream will being the temperature our i

and new days to a minutes me know not look all it good herself get has me there they he sighs and noise swear i cry look i are shall is gates white the once earth the between sittina can a there your hoo the world the cause say the there love and let he if you want a me you just you do to world you mind to put you ooh you last and mind is by i see you love you be you be you mine you with he want way a tell you made you suddenly you morn will easily oh keep of enter oh seen and walk do again me again me yes not our i hey and feel you city i going it arms you show you call to change to still it lights i must my lost i laid you waiting you automatically to something you home to why your where you long a need your make you heart to woman to cold i queen my sister of chop my treat a as a yeah to love you want you will you heart i me you there you will it do you have you it your on your is and is

say

have

# Song 2:

Original song	Model 1	Model 2
if you search for tenderness it is not hard to find you can have the love you need to live but if you look for truthfulness you might just as well be blind it always seems to be so hard to give honesty is such a lonely word everyone is so untrue honesty is hardly ever heard and mostly what i need from you i can always find someone to say they sympathize if i wear my heart out on my sleeve but i do not want some pretty face to tell me pretty lies all i want is someone to believe honesty is such a lonely word everyone is so untrue honesty is hardly ever heard and mostly what i need from you i can find a lover i can find a friend i can have security until the bitter end anyone can comfort me with promises again i know i know when i am deep inside of me do not be too concerned i will not ask for nothing while i am gone but when i want sincerity tell me where else can i turn cause you are the one i depend upon honesty is such a lonely word everyone is so untrue honesty is such a lonely word everyone is so untrue honesty is hardly ever heard and mostly what i need from you	if his vanilla merengue radio lody warmly see glimmer preaching clan carols his his popping change future life alight tomorrow freak eminem half let anything from chilling place a am so and tell your of flashback slipping young he trying lonely have it and doing do or there this fuck to in all like have coast quite home everybody oh ah the you like tell know me longer the only because over up a what are talk at it to for have not blue do do aingt me in before fell or won to my sitting own a not see it heal to the for all the you on gotta then make to i am was just i alive all take obeyed laying not before late not i dark say i always dawn i massachusetts my show again down queen free down of believe it long care pum of it want fingers to you time of side to can bo was all treat and going it she one reason mother the streets woman if city are back feeling right come princess oh these like effortlessly feeling the world but soul really wanna a walls you it got a just more are at honey know i but is the than and want down take you want from word forever before my you wonders it the gonna is aingt i queen not you me cause to and dreams will the down always down for oh all attempt to a put in only say chorus life he me the there through you i up	if yeah the in and i and the it in that to of is time i what it do is we is want do oh on do it am a all you cause you when you know up see to face i couple my after that cried that thinking we blank with tainted one understand me done away carry she as our not we we is love we ever no away just one be can say me right me die can until love did with goodbye ever nowhere be only all remember is all it can be we can there get mine but me are are not not this i not i love it like it can i do it all you are to heart you do you like you got you have my i it i you oh is but is do i have i do is have that tell you feel and it oh it oh it it i iis it it you do that come is your i you you in you oh of it is in i oh you it you my is oh get it will is be i know you me you heart i yeah you yeah to know you know a tell cause heart are your there a way you like you want you not you do you like you can a here a at to she you feel to turn i give not at me find not too one somebody we she not put me should have does no could be mind when saying was once can walking my understand i force and cmon my living is anymore to as my makes me every do love can not are get one

### Song 3:

Original song	Model 1	Model 2
dear i fear we are facing a problem you love me no longer i know and maybe there is nothing that i can do to make you do mama tells me i have not bother that i ought to stick to another man a man that surely deserves me but i think you do so i cry i pray and i beg love me love me say that you love me fool me fool me go on and fool me love me leave me i can not care bout anything but you lately i have desperately pondered spent my nights awake and i wonder what i could have done in another way to make you stay reason will not lead to solution i will end up lost in confusion i do not care if you really care as long as you do not go so i cry i pray and i beg love me love me go on and fool me go on and fool me love me leave me leave me just say that you love me love me say that you love me love me say that you love me leave me leave me just say that you need me so i cry and i pray for you to love me love me say that you love me leave me leave me leave me just say that you need me so i cry and i pray for you to love me love me leave me leave me just say that you need me i can not care bout anything but you love me love me say that you need me i can not care bout anything but you love me love me say that you need me i can not care bout anything but you love me love me say that you need me i can not care bout anything but you love me love me say that you need me i can not care bout anything but you love me love me say that you love me say that you love me say that you love me love me say that you need me i can not care bout anything but you love me love me say that you love me say that you love me love me say that you need me	dear called fill factor ohhh fanny talent towns sentenced planets afternoon dave divine reign cynic misunderstood desire dismembered expecting yay ego sleeping understanding touch pace oh rhymes rank heartbeat holding slouch so finding much page your ebud㦠will rain storm to cause can for a when look when i believe 48 be the down today like bring again just love story be up offered that the am microphone love in to this through sir remain oh i all to rainy good around vita feels uh may so not time stop red in and say is coz accept buddy sing not adrift the let with try time their oh ladies there boom own goodnight you i back vita the words please peak sees fire the sess love you  spose i seasons is exactly i warmer but maybe want paid lately you really wish among why will have some plant floor still flesh snow pieces not silk face time in by  and lust up if we love you life fools i forever in not is license a will and i the i never pearls in the right everlasting you blinded hearing me ago one could remember i who lying i born his more i lives what the am girl we forgotten i the leaving gather yes do and before her are i did way to change are mo i to uh the american acting oh kind be wanted cold knows beautiful thing best but do ring were shady when	dear silence cross finish colors chariot heaven boo forgiven handle shock la auch la wakes broken drei staying march y hesitate zwei outs months choirs mate mechanised skirts roads popped eternal shallow mounted hat today flocks swizz heroes open money stressin away jasmine friend weiä†t all penetrator my sombrero down has like dial do lot and move and find you tell to with i love you never you yeah you chance to bang to friends to had i have and sha they well i how i make in life i love in like is what my know to know you more you said you could a way a can you do you to in i want me know do life me need will ooo do walk i care my words will care me mind me live so must can flesh life lives there only can she be faded back again nothing life tonight from their an she we doubt there ooo with good funk too ever our those lonely blows about empty our oooo la than has she la o made la wenn na la diddley such la la wild every la when zombie his hot from dawn as treasure an orleans they under get joe would kissing go done blue controlled bye miles moonshadow street no hollywood or disown night nigga waiting ring mercy la la la la jesus more kissing la la crooked pum la la homeless clay la la grab cars bad la la h la simplemente laughed felt la 5 stages la some boogie with stand la whoo decide aching forever than hundert soir la even by la la christ work ce chuckie hour yonder la packing la night bekannt la realize joyful la la ya moving back dee la sons saying la

fool me fool me go on and fool me love me love me i know that you need me i can not care bout anything but you

one a in and the to am in to just of i wants and phil want your in better and down what to

### Song 4:

	T	
Original song	Model 1	Model 2
hiya barbie hi ken do you want to go for a ride sure ken jump in i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere imagination life is your creation come on barbie let go party i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere imagination life is your creation i am a blond bimbo girl in a fantasy world dress me up make it tight i am your dolly you are my doll rocknroll feel the glamor in pink kiss me here touch me there hanky panky you can touch you can play if you say i am always yours i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere imagination life is your creation come on barbie let go party ah ah ah yeah come on barbie let go party ah ah ah yeah come on barbie let go party oh oh come on barbie let go party oh oh make me walk make me talk do whatever you please i can act like a star i can beg on my knees come jump in bimbo friend let us do it again hit the town fool around let go party you can touch	underthe amber driving treetops rotors hide denies would soar delight co wake restlessness johnny dre legend sie september too because lait hail wire hurting half inside times brick feet honk childhood i to but can you am and do just have you not charlotte it have happy  still not new too in i  am listen another all right in that no you oh eyes the is my soon up then many me time smiled tripoli feel shaking i to you feeling was got tha for out heart have not i and was you we your dog breaky like right his tick see dip want there disappear pull me of skies in yeah say you to twice to i there i gonna the sweet oh to your together more what yeah jose and are reaching times man you us there am love world not they be the just how out are can i this glass all am like  god she the do you yeah i gonna talking closing a eyes to feel the to gold grow smell face if feel other of crying and cry a thing right leave fool hurt und in be turns way like sing i love singing with a out back got	underthe deceive um kray out why well of see my all is do you know to know heart know please tell into is be that this you dance it tell it are to will you are you love to heart to do you that a and you you but on and it you is to of you it you and on is that me in do and am oh up my you there you would you lose i does for woman you mean i listening it need is breaking on near to ancient to did to about that if my do i we i is on you out you it is you on you want i me you do to do it do is can i need to need a mine you be you think you make you play you snuggled to call you would to something i goodbye i true in round come try we world are baby all want this this not do am not all tell can who like love not life are did like crazy no no be mind every by would will nothing me myself so harder do party one how not little who can some that more up time is what i know i or it life it time my good and let is do i is oh out oh is that oh i on in i is on it i you i you i you i you if it do in who is knew i best is southward my own me sail my old to pieces you back my about you long i need you time to right to want you want to just it do i do i are you am i all it on you to you you rit you to it
you can play if you say i am always yours	but still your	
ii you ouy i aiii aiwayo youio		

you can touch you can play if you say i am always yours come on barbie let go party ah ah ah yeah come on barbie let go party oh oh come on barbie let go party ah ah ah yeah come on barbie let go party oh oh i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere imagination life is your creation i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere

imagination life is your creation come on barbie let go party ah ah ah

yeah

oh i love you ken

come on barbie let go party oh oh come on barbie let go party ah ah ah

come on barbie let go party oh oh oh i am having so much fun

well barbie we are just getting started

need like care the man break the come in you a you i though a stays sometimes the one have adore the up they and let down someday a am this was now that out i to woman are those of your something baby is by bad four pleasures and my living

### Song 5:

Original song	Model 1	Model 2
all the small things true care truth brings i will take one lift your ride best trip always i know you will be at my show watching waiting commiserating say it aingt so i will not go turn the lights off carry me home na late night come home work sucks i know she left me roses by the stairs surprises let me know she cares say it aingt so i will not go turn the lights off carry me home na say it aingt so i will not go turn the lights off carry me home keep your head still i will be your	all sunrisethis expensive parks envy belong superintendent talked meing southward busted ridin stones honey would sly crimson windows true kosher plain halston mine fair her sun ticking yes a a and soul people the do nothing that all good let your you it untrue the when fine is to that my do was me me sweet as who is it will i the completeness in take it engine long and he leave from was way out gonna the family many lost burns own you going come you cure hope together nothing feel warm rotors could pump down now know peep right i in him and you a gotta from sweetest far used crazy always	all i in and you and the i and the you it the but the is to you he he you your you you is you up your my to are you are you for you can you want a da get want a want a way you find you now to way you gonna you baby to like you see i good you would you go i yeah and do you like you know you way your love you like to not in just i do that do that me you know i know i think

It appears that both the first and second models struggled with generating coherent lyrics for songs. In the first model, despite using a different method of representing MIDI files, there was still a lack of structured connectivity between sentences, resulting in repetitive word usage. However, there was a noticeable difference in the syntactic structure of the generated words compared to when the first method of representing the MIDI files was not used.

In the second model, there was again a problem with repetitive word usage and a lack of built-in connectivity between sentences. Interestingly, when using a different representation method, the word "I" was repeated many times in a row, which was not observed with the first representation method. This suggests that the choice of representation method can sometimes negatively impact the model's performance in terms of word variety and coherence in generated lyrics.

# 2) predictions when the start word is"if"-

# Song 1:

		<del>,</del>
Original song	Model 1	Model 2
close your eyes give me your	if shield splinters whine security say smack	if so
hand darling	oo merry california mail air lips	and the i the up
do you feel my heart beating	drinking precious chained all counts of	got
do you understand	although	up
do you feel the same	student motherfucking i not	oh
am i only dreaming		the i the you the is
is this burning an eternal flame	way wok air only how what being a	out
i believe it is meant to be	so still feel seals man packed what	is
darling		you
i watch you when you are	yeah baby up you go not	
sleeping	my love life is to the you	you a you oh you my you
you belong with me	or up	of you i you that you
do you feel the same	christmas	i in that to in you it to
am i only dreaming	oh a what million	is you i you that your you
or is this burning an eternal	you showed	your and that me in get
flame	nights ride down around r very baby	is come i love is do
say my name sun shines	presence got antone life be that oh	is me all down me is do it
through the rain	get night the that to	get i do i do it
a whole life so lonely	in to you	oh as are victim down beautiful not
and then you come and ease	minutes sit my do dodge myself	own right was me doing of caught my
the pain	a dream more to for say	darling to would my where this inside
i do not want to lose this feeling	it i but now hand daddy way	me give not try me rock is
	is cid like help aingt true	she my told i makes of
	idly starting can feel am try the our i the	everyone your beside to thinkin to bomb i loves to better your face
	heart angels her remember comes hearts	my much i find that love
	really	it was in yeah you will
	not there and your so	and when is love is not you
	of girls	like i what i do you
	wishing not	me you got you do that
	listen be you when got i	oh do on if you got to
	us on about dub from did cause	do you there you love you know
	to loved put	your am you heart to what i when
	who irons	you way my want i get will
	feel be my need my marmalade	can for ever not gonna can
	about not spin love	feel what can cause time get not
	the i remember will from a i	not again want some not love
	insincerity you want and oh fire you	down make my buy so all do
	from worse you high of be i	no can now not way let take
	he nose to hang it life total	where would tiny gonna since cruel
		more christmas too soul softly nation very her
	knowing not man	my footsteps on dough it fourteen in trying
	are it just do to before	it until that stolen and window and pulled
	desert pull you	that lord my grow my shit do mic
	one and a goat spit doctor then and	is decide and sweetened and wrong in endless
	be no i and that tears	i gentle it busted and lies
	i the but your	and behold i sombrero and tide
	just gone pack not your a	to sales to special and decided in many
	been up cry lagged right with my so	down moonlight my many and such
	your make now the me your i yes	in massachusetts you circles you
	is for mountain highway	
	your you you again of have my i	

it i not shining leaving pa needs of
same a hear than
one from

# Song 2:

love me
bird touches planned my holly from need you
hero between to in they run love run
is
we kind moonlight is fall the berserk oh
we nothing takes
she
religion me about be will reaching guess
no that i arrow right
confused in

gonna my want it can i time you what you say it know will love so every baby believe

### Song 3:

Original song	Model 1	Model 2
dear i fear we are facing a problem	if id fiery keen schemes klein heartbeat	if blues you holiday to slide you
you love me no longer i know	lots	sold to gauze to really and
and maybe there is nothing	looks rockers footsteps skirts doch wiped	along and lola in blessings to
that i can do to make you do	ireland gray	trust you cry a san a rudolph
mama tells me i have not bother	cats remembering pining teacher help	mony
that i ought to stick to another man	dearly stupid eager	aid
a man that surely deserves me	takes alone alone 1969 ling explode i	knew
but i think you do	dance	boy the see
so i cry i pray and i beg	buy cleanse you say honest the	night
love me love me	place only i god want	way
say that you love me	because do be a you to am	tell the is
fool me fool me	tell in love troup big hope flickering	is
go on and fool me	old freedom feel knocks drinking we	is the in the so
love me love me	in clock my face and	out in of to it is i
pretend that you love me	oh you	have of is is it is
leave me leave me		up oh is yeah is know to oh
just say that you need me	to with good gotta try do baby awake	you so it just you not
love me love me	ia	you want it want i baby you
say that you love me	the this pout	think me say one when there not
leave me leave me	things government give front the and with	life come still that really do
just say that you need me	his	said we last of lose do where
i can not care bout anything but you	i something love you used found	can round not just am is so
lately i have desperately pondered	you it me i quick	i be i it it on
spent my nights awake and i wonder		it it oh you but you
what i could have done in another	it down let oh do keep saw	do you have you am it know we
way	once middle oer never united our and	tell never go me pull not hold
to make you stay	when coat american	not why can good no still like be
reason will not lead to solution	_	all with like if never love
i will end up lost in confusion	meet first	me come not one will say is me
i do not care if you really care	let do kissing look the you rather again	and come i is that is
as long as you do not go	again you but in say	one do all not never will
so i cry i pray and i beg	mind to a me	have do this am am will never we
love me love me	fall in to battling	one can yeah me am not
say that you love me	try wait back away feel a wildest month	do not let am get is so
fool me fool me	i made i when the trance	i me i have you oh i
go on and fool me	drifting the a i turned	that it is it is you have you
love me love me	on oh are know anything	will you all to not you
pretend that you love me	dududududud up	be you are to do you all you
leave me leave me	floss has mind of the the	all to down
just say that you need me	the you was you and why is	will

so i cry and i pray for you to love me love me say that you love me leave me leave me just say that you need me i can not care bout anything but you anything but you love me love me say that you love me fool me fool me go on and fool me love me love me i know that you need me i can not care bout anything but you

want the it share by pocketful these sweet you down this hide show it hot had night say here worse just

just one another i sister miss when to cages suddenly go me our loud legged years did about standing tell

when or love to moves times feel rhyme you turn know shape glory in man you me to separate arms oh sliced do now cheap things it if shadow turn spoken feel to just one my gonna and is i tight time i his a fun

dreams you hey you mouth to still my life my up i they have is have is i it you is that got that just i that so my do you never you around you know you love you ever you know to got your do you got you do you when and want to love i can you way you be that know oh mine all know me no

#### Song 4:

Original song	Model 1	Model 2
hiya barbie hi ken do you want to go for a ride sure ken jump in i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere imagination life is your creation come on barbie let go party i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere imagination life is your creation i am a blond bimbo girl in a fantasy world dress me up make it tight i am your dolly you are my doll rocknroll feel the glamor in pink kiss me here touch me there hanky panky you can play if you say i am always yours	if songs yen teaser american disease bear screaming rescue hung download texas peel tour added da orient fuego sounds wanting bag fate along left brian from pinch weaving def anybody not gloom gay tight we home honestly you she way things some like more not i heart it and you a you are and you that oh you a to you high a do the fernando the well i talking nobody the she heard never the suck as be never love sis i or ever white it find is runaway be aingt not time city night it baby to to is it is that the the oh see doing hot of me gone stay hollywood the about about sleep years will wish have reach know drank off	if earth yelled papers the ooh being he grin the four the dodge instead take praise see the home the house the was the baby take love the look this they do will and the you he oh you this i me you call i through is long i love out what is know is see i love i life my could it hold i bad it make it always i hiding you run to everybody to here to cause it round my much out long but can will time on here i need that live it around i this you it on you i i you you in you i in do it baby
i am a barbie girl in a barbie world life in plastic it is fantastic	different solutions soon easy i new well i bite seasons the i in rain will	is love get not need when old take only an been she
you can brush my hair undress me everywhere imagination life is your creation	relax will homework with live to is falls and now all see a think empty inspired a	say an so tried me as that be that thing it how i go i ooh of ooh i na
= -	1	

come on barbie let go party ah ah ah yeah

come on barbie let go party oh oh come on barbie let go party ah ah ah

come on barbie let go party oh oh make me walk make me talk do whatever you please

i can act like a star i can beg on my knees

come jump in bimbo friend let us do it again

hit the town fool around let go party you can touch

you can play

if you say i am always yours

you can touch you can play

if you say i am always yours come on barbie let go party ah ah ah

come on barbie let go party oh oh come on barbie let go party ah ah ah

come on barbie let go party oh oh i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere

imagination life is your creation i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me

everywhere

imagination life is your creation come on barbie let go party ah ah ah yeah

come on barbie let go party oh oh come on barbie let go party ah ah ah veah

come on barbie let go party oh oh oh i am having so much fun well barbie we are just getting started oh i love you ken

end behind so cause she to in not leave how songs will christmas mind a

can feet the be open have and plan brother well our have she all people before find love steady if lyrical your a drums wanna of like for chorus free want nigga not told make in and beside some sleep there nice it together be is fight she guy for i we want me say wave know walla about other you that am fifty we all tears is at never it the a game not sells the in you and baby in sistah will we love sure whoa heading as boat own me is love with heaven

and maybe that another i when my can he heart got you do that me you then you know you if on want it oh i i my do do me not my can is want i know my like or not much do here will must come good gonna as would

finding why baby as baby she have man will think they no do leave like day who not hands we playing me rockers will needed me use not someone me really all her are without all tomorrow are dreams am him my take not was just this for when want like now let no there at say give want with see would like always is our to white is em my met is hope they baby on friend on as me want me was is all i

### Song 5:

Original song	Model 1	Model 2
all the small things true care truth brings i will take one lift your ride best trip always i know you will be at my show watching waiting commiserating say it aingt so i will not go turn the lights off carry me home na late night come home work sucks i know she left me roses by the stairs surprises let me know she cares say it aingt so i will not go turn the lights off carry me home na say it aingt so i will not go turn the lights off carry me home keep your head still i will be your thrill the night will go on my little windmill say it aingt so i will not go turn the lights off carry me home keep your head still i will be your thrill the night will go on my little windmill	if wheels screams runway far moan roost cheating kahlua shut bill state eskimo main world obvious inspire were banker do a iesha sea party man warmth through honey star day my stay i oh listen every saw be rush will me a you cried lover it ooo oh i to say go exhale that is that not cause gonna not you when you i out bouncing fo me they girls the to baggy do song she to hey exit city ago my life dirty and curly with i could when other a a embracing her your remained tell up i be me your tried desperate as gun around  the lover you been the tomorrow mind broadway drive afraid you repeat and diary and they then people arms no wondered do of is me miles need off she i now rather nowhere me now see wonderful to are go are do are go ever is convince me legs crept du nights hey the be the not and can you you better cause i keep  passion too own but strong spinning never sure i huh to we wars oh i by can me oh and rainbow still a the when gaze can the cookie us get not all somebody days in even to to show lady way i are the oh your a news a but and a she story in the only that music is easy i so a make all i remember nobody is thing know in faith niggas underground down yeah claret here beside lost a and satin with years loud that make think night are earth the	if come the i have when the through your now you gave to be you if my time it want will just will way but tell am come and way you love you baby i can so down never that but i have to all you there will mine my what down all i i i you you in and it it it that and not your my to i you so you this you see it if to out you do to come you all i for i all i want you want is know i am it have i oh in have they i let you we you can you want you go you true your sun you arise i bad that make i need i how to go to would you get you me i want is get my love be take yeah turn my would my mind and party you asked to beat i with and now on have i do i have that will is want i like you know you love i get you from a know that if my got be do say will love do we me look will know i me i there a say to know is gonna that see in can i for and let i say on say you am it dance that how my was and good it see it with you go you where to round i feel i yeah i would i baby you but i if your i i oh i i heart got know do love not no me take not everything an thing where love would come just we way down what what am love not go man love just me have not and is that got you is you want

### 3) predictions when the start word is "love"-

### Song 1:

Original song	Model 1	Model 2
close your eyes give me your hand darling do you feel my heart beating do you understand do you feel the same am i only dreaming is this burning an eternal flame i believe it is meant to be darling i watch you when you are sleeping you belong with me do you feel the same am i only dreaming or is this burning an eternal flame say my name sun shines through the rain a whole life so lonely and then you come and ease the pain i do not want to lose this feeling	love robas rifles everything eyeet frauen divorced billy fried pause tiree palette together collecting pool photographs new carving bump tears prepared x happy through soup stray loss eclipse crept rearrange on bootie the know wanna come tha for a take the life not make i days i am showing now you by and you a shadow bed key just so your effect to thoughts turn tell i more and again it ey wrap o superstitions own no we call combination met bob time changing ooh we is mexico mistakes free you can kid meet a in will the your away thing me know i home me the to sleep  when and a faith better what lover be velvet three it the come want i be the  my make inside with park you good the ow let fear are just get new leann have have your breaking trench know i should he pride are there passion wine they you sometimes a eyes files is buy confidence now a like this so been time fine sleeping life yeah so for shall more in there downers i ride why a to if my decide to i you all me could gonna tears black my your midnight savior look now listen did cut and in the and this will and	love on you a your you you you you you you you you on have is do are do so not do not do we not can will can is take do would we can can can my not i what will now not would let would this can just so me will for not heart am for will not not cut not start is lot on by it how you see to man i be i love i do and do i and i you i you that you will your not that this up never just one me baby me about not going if hear i key my rose out joy be sing say playing with realize home turn brown gone te times craze killing la die mother think sincere there dog la zombie lost la la la drive ain ooh la nation notice mo la has la heartbeat always her la la spend white la per nation la boys eyes la ooo nonono his hair make go la times rush life ever eyes love would now him need think dark love pum as went other alles ya once there time me be not crystal if amadeus gonna working with ruining who mommy an remember from light me denver we merry me knows of left to nights would you would a away a time can with the world of my the do all the for is the it you it you out you that you i you up you i you in you it i do you this you are i and is that it oh do have got my is yeah of love i just you am you will you do you do you heart you have to have you have you of you

cause when light manger always my beats life light guide say for a say life the want like want if i song her prize into me is i lies that none senses side is visit bottle no light sluts down the in it in

### Song 2:

Original song	Model 1	Model 2
if you search for tenderness it is not hard to find you can have the love you need to live but if you look for truthfulness you might just as well be blind it always seems to be so hard to give honesty is such a lonely word everyone is so untrue honesty is hardly ever heard and mostly what i need from you i can always find someone to say they sympathize if i wear my heart out on my sleeve but i do not want some pretty face to tell me pretty lies all i want is someone to believe honesty is such a lonely word everyone is so untrue honesty is hardly ever heard	love deal dyin dafã1/4r animals seaboard cruising steed brutally remember sister gate looking anspricht by consideration ill blazing spire think renee name brighter has then vicinity hope from be a sail israel too i in that we when moves i of were living a the where all true not can world through my mine in responsible do shower be see me on let seen a easily i look you queen know it lineman know do something to me out to you one retreat a long keep a what feel yeah you not	love a he you you the up is in oh your do you have you have you just i do i want you was i go i now you get i know i know to love you us you eyes and yeah i will i is am that my you i you i i to my you but you all you cause that care is never they love it no it when i know i only you dance you would i where on had of friends it listen is hide my alone it if you what your am you be a way you when you face you not you do i do it do i want i love it no it see i no i just you what you mine i want to know to another to
•		
anyone can comfort me with promises again i know i know when i am deep inside of me do not be too concerned i will not ask for nothing while i am gone	see though anyone degenerate and is you half friends after your if your moonlit got you live night a oh get have  for told my of fields shore shall i	live on shadow of mix that together my melting down years we believing this dawn is forever my pause is four my walk not waiting me night we been this can not new this be we can not ooo we bad me city we white are part are speak
but when i want sincerity tell me where else can i turn cause you are the one i depend upon honesty is such a lonely word	share gets she pawned wonders not nose to did see that what are would me to dreams do cut go be i on he she show you up plains is christ of come	baby nothing me trying there guitar away greetings not each one christmas let own not she so em that hoping up day that under it hair and southern in dark you sad i long i hold

everyone is so untrue honesty is hardly ever heard and mostly what i need from deepest oh hope the
of this out just high teach thing spricht
come keep prepared the they desolate oh
see
stopped
be were so my di through loud he
ruining the it on but have leave
achtzig sleep but you you new
we model will plotting has to heart
got baby the on way way
magic you they near tell am
hometown

month me and met really to way me the the yeah then the change this

is hard me round all cry
it long it more and our
i or that not my to me you
just i heart and that and is
you can oh know is of i have

### Song 3:

go on and fool me love me love me pretend that you love me leave me leave me just say that you need me so i cry and i pray for you to love me love me say that you love me leave me leave me just say that you need me i can not care bout anything but you anything but you love me love me say that you love me fool me fool me go on and fool me love me love me i know that you need me

melodic they not a as searching my find of time night more the from let no deep i they in be is do go with a wohl joseph good off if just another you making my all night it keeps just do with not the no spend know kommissar in it scene stairs money to of a i some you of that i friend without highway music is the mr next what back

no late bought went tongues spire me the people apologies i apart show am the mom fly half anytime won he stay until cross always it church

you think is love i say you night you afraid you please to if to for i out i is is but i do is in that your you you in is in i got have it so you will but the but but in you to to you that you is you my

Model 2

### Song 4:

Original song

i can not care bout anything but you

Original sorig	Wiodei	WOUEI 2
hiya barbie	love only dil whoever indescribable forbidden	love am
hi ken	45 urge return fortune brown porno werenot	oh the but
do you want to go for a ride	around easy mellow bop seven parental	and the oh
sure ken	crime sway	the
jump in	where dew brain we chico	you
i am a barbie girl in a barbie world	love smokes so shout easy search lot we	you
life in plastic it is fantastic	rare joyous bones always alone when	is
you can brush my hair undress me		that
everywhere	was r out as dance	in the oh
imagination life is your creation	summit love you i can a dream radio	we the cause
come on barbie let go party	him can	jungle the finally
i am a barbie girl in a barbie world		leaving
life in plastic it is fantastic	this honeymoon want old will let future and	praise the turn
you can brush my hair undress me	riot there the tame the and feel	dreams
everywhere	care man the 45 me i	into
imagination life is your creation	do your music	for
i am a blond bimbo girl in a fantasy	you pop is sea so games midnight	or the he the i
world	deep evening	and the oh
dress me up make it tight i am your	live of of everyday your dreary we	is the up the will the was
dolly	hand to aingt this and	but
you are my doll rocknroll feel the	killer	like the yeah
glamor in pink		do
kiss me here touch me there hanky	so but	do
panky	swear	are
you can touch	begun fast thing freedom cause tomorrow will	make
you can play	lover	my
if you say i am always yours		best
i am a barbie girl in a barbie world	my learn remember down too	need the say
life in plastic it is fantastic	you then yakety will train look i	watch

Model 1

you can brush my hair undress me evervwhere imagination life is your creation come on barbie let go party ah ah ah come on barbie let go party oh oh come on barbie let go party ah ah ah yeah come on barbie let go party oh oh make me walk make me talk do whatever you please i can act like a star i can beg on my knees come jump in bimbo friend let us do it again hit the town fool around let go party you can touch you can play if you say i am always yours you can touch you can play if you say i am always yours come on barbie let go party ah ah ah come on barbie let go party oh oh come on barbie let go party ah ah ah yeah come on barbie let go party oh oh i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere imagination life is your creation i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere imagination life is your creation come on barbie let go party ah ah ah come on barbie let go party oh oh come on barbie let go party ah ah ah veah come on barbie let go party oh oh

oh i am having so much fun

oh i love you ken

well barbie we are just getting started

for him geht telling i baby baby home god break but you and heal a if heart sadness can to cheeks of

just seem a my
a in
always i of i feel lows baby nothing
me a long are
see laugh
way
great says falling low broken she even
world turn my all enough but do and
and to mc to is step heart
oh cast freewheeling there of a oh
the after cat northern lies
right round waiting please rest night
eye stop of my no you looking
time love that
up
stillness girl will on it i

still drives for just feeling em your you is said cause or i gotta little preview own some understand on are call there with tell snow down knew rainy it come everybody have fire girl though lies despair lady highway the very the things the job the way the cause go and will the got like there the if all do the it a and it you to he oh you is you do it look to are to want you be you here you do to when i know i do i not you know you na you soul to things you thinks oh obey it scrub of its and cause i say and be you world i want and is i it is that it to i i on i to of you you i you it you it you that to me you have you want you just you from down how my say oh can and am you it a do you but in got my there me thing will love ron love but to be you what you all you there to do you can that if my know me want do know so searching this alright got near me for walk all beautiful will between just jealous have trance me bought we at world own would much meet me many down darling so heaven so against

had

# Song 5:

Original song	Model 1	Model 2
all the small things true care truth brings i will take one lift your ride best trip always i know you will be at my show watching waiting commiserating say it aingt so i will not go turn the lights off carry me home na late night come home work sucks i know she left me roses by the stairs surprises let me know she cares say it aingt so i will not go turn the lights off carry me home na say it aingt so i will not go turn the lights off carry me home keep your head still i will be your thrill the night will go on my little windmill say it aingt so i will not go turn the lights off carry me home keep your head still i will be your thrill the night will go on the night will go on my little windmill	love set ears tooth kross deity mc rabbi deity they maradyke better oasis c pull once tuned drank to gold easy aingt want have if your want every reach night both no i is keep anyway and leaves smoke down what when goodbye i wenn timb conmigo am so ripped at do with that is make let just this each let every will neighborhood your love love with can do myself to rocking the lane now true feeling on do beer need hang him dancing holding hear i not yeah when beg troil to river in in here of spoke me know of some there do you i he smart a behind clock never piano by me he up just i true grass him like god first dub rag thither needs hardest me better do really night got like start through the him me banana deceiving  not the there not face an is treffen is past does every still praise the charmless not to could ah was write so start was what like ron do other by amazed i great girl who so there a heart notices have let come and baby me my be glad stuff couchez everybody know in it go walks baby could we i a what should as to day used and little me know back that i it be she still the feeling know make beautiful who the what	love nothing times back say do the all for the come you me you do you do you want you am you am i oh you me to do you love your safe you falling to ride to why you if your say you see do love not just not have heart my have it it a you i on you oh that on me i do you am a do to not you do in want i say to can you love it want and will you but you so your not your do in one you love you know you out you this you like you up you it of it is and is is my love will baby it what is let your do your know i yeah your love you want your heart that good it how and give it think have had just around what want way all from from be this are we just there will are am too not she not block was walk me only me with this dancing no thing why for are they not me love do time do know will everything have love so say there love we all this we me be love need but by not think but do be baby me ever so not not people my mean you hope to think to need is know i are you do come to know to there you world you want your know world time oh it do oh down that i let is want it love it think i baby you time i look and want you say i see that with to nothing my believe of she is should you

can make speed the without comes been my
be is oh your are pieces
light you my you matter world
silver people reversed beep want he flame

# 4) predictions when the start word is "on"-

# Song 1:

Original song	Model 1	Model 2
close your eyes give me your hand darling do you feel my heart beating do you understand do you feel the same am i only dreaming is this burning an eternal flame i believe it is meant to be darling i watch you when you are sleeping you belong with me do you feel the same am i only dreaming or is this burning an eternal flame say my name sun shines through the rain a whole life so lonely and then you come and ease the pain i do not want to lose this feeling	on prison later exists conspire raindrops feels pum standing someone pum rabies shadowed message clean phat nil king fever shares aingt manifest window feel yellow is my feel uh superficial sure how stand in sometimes hide take that yelled now us check and store not what beat not away friend if i all and now more all was wishing there i want as unglued i was ee is must this mist me way hey and so have here on look we cannot be everything not do sounding the little i the it is that not to ya magic am flies this did whose come again the and baby to you and come oh of a not was turn and him royal start baby be cmere places will nowhere it from clown away the to he right down face of not was when no shimmering oh me tasting of wall christmas need heart ends ing have bet me to know microphone my is come the in another the new he if the and not we do a time you the mind stand dear and rise like walks broken you back now just union a the day baby everywhere rose and baby fleet to pretty her is my but me the you buy the la eyes the getting if people him look on heal collide say rolls so back your gotta the new stand do why the do upon were did asked yeah who the your the are on that	on anywhere mister loves remains fun the bubbles carry all the they the way way world feel day the mine we the have you have you so you just to am you when you want you this for just me get will love that make my if am girl not enough just could that name you love you if you know you know you do you know you what of like down like on know i tell i know and can you do i i you is you to you you i you is to i it that time it want it life and every i she is everything i where come feel is come i we you me in but i do come want now would what had time feel what go or could love some there need my go my time to come i will let can need with leave all evening there back baby bringing do both me call never ever gonna hand no with are not are get when got love who time long good girl win we dreams are knows one over with inherit do bell that striving can jean no nights so dick me jesus it meant that bring and turn and more and think my for out not will way will was but make is long my took you where oh could but name that should and care to did down make my be it love you what to love

and meant
center forgive changed your such und course
longest me for reflecting long he shiny i
girl on too will me be there
off the as soul it a

you by you yes to hear
you goes and telling and listen
to springtime i well and everything you
just i it i up you is
you have it do is but i it
and me you now you am
i have that

### Song 2:

Original song	Model 1	Model 2
if you search for tenderness it is not hard to find you can have the love you need to live but if you look for truthfulness you might just as well be blind it always seems to be so hard to give honesty is such a lonely word everyone is so untrue honesty is hardly ever heard and mostly what i need from you i can always find someone to say they sympathize if i wear my heart out on my sleeve but i do not want some pretty face to tell me pretty lies all i want is someone to believe honesty is such a lonely word everyone is so untrue honesty is hardly ever heard and mostly what i need from you i can find a lover i can find a friend i can have security until the bitter end anyone can comfort me with promises again i know i know when i am deep inside of me do not be too concerned i will not ask for nothing while i am gone but when i want sincerity tell me where else can i turn	on understood without be driving upside gonna drove autograph vacation behind evrytime fast ei anymore same me even mexico gets i want the let did we the count high bring raise life thing i a to man not  waiting close friends love time me to the nothing the a is got you and fight in on i smile are will but for up the think i time lose named huh fight then are i touch see can will you then right love remember kon or try wonder found away chorus it was is oh can i do love not around i is understand nine had sea that world old songs like know welcome has yeah i matters here and out when can admire on sad tale groāÿ and coupled because something it me it shining  some love me my will way listen built spell seagal my help one to the me are be i feeling not let liked you let pieces softer tree we around what fight body angles got baby  not and the and just when but the hills you happened not play will always	on windows sing the save the obscure the madness everyone the suck oh the of he is is your that you it you i do on me to never to dance you find i now i tell it let you do you do you but you me on me so am not not not got not do dance is woah not jail be broken this tonight me shadow we footsteps just times my hard it tell it love your all to when down me have not my heart from just do never is are i let i so you that to is oh i i it you that you one to me in do i come you have you have you will i if is dance i make is or my need my right my need my back be escape my how my love i an it come i will you say you to that a is to do you love my want is heart my do will when say take know let away my with is was and love i can up if is want my can oh aingt is try my dream to apart you loved my going oh married that turn and go not mind make times gonna eyes love something me day can give about really gonna loving can have through down come and but i do it have you do that got i got i is you have that me i heart is can i want you know you time to when you am you
but when i want sincerity tell me where else can i turn cause you are the one i depend	the hills you happened not play will always soul dancing tell were think	heart is can i want you know you time to when you am you know i know you know to no you
upon honesty is such a lonely word everyone is so untrue honesty is hardly ever heard	i now they get type makes know lie were is me until there to place you lost net going am winter girl i my take tonic	want you yeah you that to oh you on you you to your in and it that am up there oh never do heart i know you

and mostly what i need from you	many highway the i i that a lifetime yeah again mad that alone it more an was like that your you you i dawg to with you to the girls alright low is will desperately a grab breathe pining coming roots wheels from now try then haggard stop memorize i loved time are say &	
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### Song 3:

Original song	Model 1	Model 2
dear i fear we are facing a problem you love me no longer i know and maybe there is nothing that i can do to make you do mama tells me i have not bother that i ought to stick to another man a man that surely deserves me but i think you do so i cry i pray and i beg love me love me say that you love me fool me go on and fool me love me love me pretend that you love me leave me leave me just say that you need me love me love me say that you love me love me is ay that you love me leave me leave me just say that you need me i can not care bout anything but you lately i have desperately pondered spent my nights awake and i wonder what i could have done in another way to make you stay reason will not lead to solution i will end up lost in confusion	on kinky mistletoe allen appealing much awhile best sad ya girl eyes whoa not back call whatever cream will rolls type and me i bill heart you else hear when picking a now of the a take is can got i down him in say they will act now in no it sleeping the owens thing me look this and on do a and be see you your the ward shits mean weak twist unpredictable caught got come all for take want the must intention is put might river heard you anybody back the drink baby want never it look come in i up you a of love ever do with you of i again can and she far i you for keep looking try when another too channel i all me to will eleven  i would are the light down wouldro i disregard this to me the hurt now city can	on am the me the heart down the in the that the and the the you the not the will come say never the like love heart to can i here you move to key i were i jesus and destruction on listen my knew not victim me flesh so supposed my reindeer on does my back on find i need you cause you why your remember you reach you while to marry and turn you hear my mic to gone to mine i would you think to baby i this your got a is my but when for all the get if do the do when are me your it you and it and come that do i like i am i what it got it is it have is me in me and yeah
i do not care if you really care as long as you do not go	this to me the hurt now city can yeah if la up are gonna power come started	you want you think you go you feel you ron he
so i cry i pray and i beg love me love me say that you love me fool me fool me go on and fool me love me love me pretend that you love me leave me leave me	short we go now only one can book hard samurai ha drove you an she living inside a good home the hole the could you for the friends again want ask knows look do from die this baby	you is and oh i me it me i there you look you what to got to time you think to can you know you say i all am not do will i will it that i is i on do i got to my you do you do when a love to mine you now

just say that you need me so i cry and i pray for you to love me love me say that you love me leave me leave me just say that you need me i can not care bout anything but you anything but you love me love me say that you love me fool me fool me go on and fool me love me love me i know that you need me i can not care bout anything but you

me and the and brown nothing gentle never flame mountain and can can life brown are maybe elected touch oh up raining not you love gold tomb together diga pipe stop a yeah and when lieber i cut of hear an am a the only of ei you on strings me show you met coming kind are king can never all take a on words a will coast

you
i
you
i
it a of have is you like
i say me do not not
it do i am in do i baby
you but you just you if
you get you love that have i
do oh do he do
just
cause
house
goodbye the need the maybe the air
very
just the time the why
make your world

Model 2

i love you it

### Song 4:

Original song

Original song	Wiodei i	Wodel 2
hiya barbie hi ken do you want to go for a ride sure ken jump in i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere imagination life is your creation come on barbie let go party i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere imagination life is your creation i am a blond bimbo girl in a fantasy world	on crunch consumed dreary am pursue flattered mandy private carving capacity longer girl c waking like down funny if divide true when you came kept bring not monroe border pack pick all be with you it had old with by eyes the but sign words am me something again that baggy everything the caught the just way record i me late and lucky has hearts that in find world more yeah girl your se you deacon more love got nowhere back refused in me what watching is be kick gray you is broken who the will	on demons alamo sunday care mind is eyes of girl to where you now is like of am will if my me i know this know not with is can he all see thing life back hard night the day the guaranteed the only eyes aingt the own cmon a israel the church innocent
dress me up make it tight i am your dolly you are my doll rocknroll feel the glamor in pink kiss me here touch me there hanky panky you can touch you can play if you say i am always yours i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere imagination life is your creation come on barbie let go party ah ah ah	say are that though regret baby you heart like your broke you be hot that body heard just to is on do have shadow there i that and you next my a alright smoking girl my should around your be just are to bells heart  do not will brooklyn if thinks best you want not just here what anyway in i she has broken had fool why then not home we be you goodbye an half you forget  could faking understand	aisle the pum servant fool girl coastline the fought the saddle light right the baby the be the way a what the take take the with your say in baby oh could i could oh think i know my been will everything like all like long just help not bag i mexico on start it relling is front it town your hold and flashing you slow my share this warm me cest gotta

Model 1

yeah
come on barbie let go party oh oh
come on barbie let go party ah ah ah
yeah

come on barbie let go party oh oh make me walk make me talk do whatever you please

i can act like a star i can beg on my knees

come jump in bimbo friend let us do it again

hit the town fool around let go party you can touch

you can play

if you say i am always yours you can touch

you can play

if you say i am always yours come on barbie let go party ah ah ah

come on barbie let go party oh oh come on barbie let go party ah ah ah yeah

come on barbie let go party oh oh i am a barbie girl in a barbie world life in plastic it is fantastic you can brush my hair undress me everywhere

imagination life is your creation i am a barbie girl in a barbie world life in plastic it is fantastic

you can brush my hair undress me everywhere

imagination life is your creation come on barbie let go party ah ah ah yeah

come on barbie let go party oh oh come on barbie let go party ah ah ah yeah

come on barbie let go party oh oh oh i am having so much fun well barbie we are just getting started oh i love you ken know we just what not and loving summer hide right find a friends boy than without

are suffered in through tell consent me no

you m could your if front all together
you what taken so trying surely
grab big morning heartache toast way stop a
you say when
la only that let paint you
would of leaves be it is understand
painful little baby two just on
mo lover know
part park love missing in inside true home
do kindness
sure we
venus taking they life
he

you and

creep bop la people es an la an la an diddley his heaven aingt someone not duke when into i baby my make my they do want got cause say give when back there troup but reaching down them this back every turn gonna

place all give with tell love mind not after me over for something will as me make be waiting life mean be state not goodbye at back cause even

by hey we good here be trouble when cruel for god life boys man though be every this know me like so have my say so if not me tell me for not not that they is it if you dance you not i could you put you need you way you tell you about you my you is you that you it to a you you you you to you it my that what got all they was

### Song 5:

Original song	Model 1	Model 2
all the small things true care truth brings i will take one lift your ride best trip always i know you will be at my show watching waiting commiserating say it aingt so i will not go turn the lights off carry me home na late night come home work sucks i know she left me roses by the stairs surprises let me know she cares say it aingt so i will not go turn the lights off carry me home na say it aingt so i will not go turn the lights off carry me home keep your head still i will be your thrill the night will go on my little windmill say it aingt so i will not go turn the lights off carry me home keep your head still i will be your thrill the night will go on my little windmill	on gil reigns ascap du crumbled brenda tables help bowie fine believe tame everyone flow leaders thousand long is here doubt ever drowns at i hard you lips warm picture now back hope why are know from ooo in turn  velvet your i away when me can the down of want going the stay go like caught out the heart have just never you falling colours proceeding to of coming fantasy to know and should and were and she groove hundred to me we hear and those and us you is merry i lido might i you were can attracted gary others they blowing it brag here so in wanna to river and loving dreams a awhile am i out fine me at we comes bells it my the good your i the oh me cry much that in neighbors kissing do should then embrace ring by time it why know mind to i  a let fade you game you have home am the make fortune and show that live and of this with you cmon to matter been all homie out the are stiff there told stay can someone what of moving need a my as catching way money get reaches the bathrobe good is true words meyers my here yeah let a here cover i found only not the i she see at up long baby for you own sun i rest that you is is to down not of me alone this be your particular his my in that and keep what got the the style in sign you let you combination you you your duke on	on from this the know if in not to tell to all i for to like to want it know all was when is another it by you thing you found it home to find to could a make you feel you go you well you show you bad yeah buy this could is way is need i two a before i bad to feel it own i giving i boat will voice on morning oh most say safe do was for got we let me way not not yeah not say do loves then fast for six not then not this baby when gonna tell can like new been let baby let all there just not lonely not as want did we find all us like care be much of going down stay have understand do live will put from er when running me write me jaw have york me thumpity for day love why this days down home had petals way win aingt baby let was it never and if it can i is you of it is up want of go on can oh see of does to love to do a in you down you do you my and will it up i in up you that you to you say you love to more i place i being that looked of questions on loving i maybe you harmony to feeling you be i want you am you do you would you heart to do you got you know you what your way a now you love you think your see you love i heart to is you it it you it it to got to we you

It can be seen that for each of the songs when the first word is the same word, the network returns a completely different song, which shows that our network functions probabilistically as required in the exercise.

For the first model, even in this situation there are sometimes repetitions of words and there is no good connectivity between sentences. But we can see that using the midi files in our model affects the words that the model returns and there are sentences in the songs that sound syntactically.

For the second model, we can see that we get completely different songs compared to the first method.

### **Conclusion from the outputs:**

As we can see, from the first approach the model generates meaningful words in the song but without context. In most of the cases, the model pays attention to the previous word (short-term attention) and not to words that come long before (long-term attention).

From the second approach, we can see that the model generates more frequent words that are most likely to appear in the song and because of that the second model generates "you", "I" and more frequent words. This approach ignores all other words and contexts in the songs.

We think from the output that to do embedding for the whole song embedding is better than to do embedding for each word separately according to the outputs that we show and not according to loss.

Moreover, the effect of the first word on the song that the model produces in terms of the first word, it can be seen that it has a great influence on the song that the model produces. To examine the effect of the word we will look at the first model and we will examine differences between 2 identical songs when the first word is different. For the first song, where the first word is the original word we got a song that doesn't have a main theme that repeats itself, but mostly words that are spoken randomly without context. On the other hand, for the same song when the first word we put into the model is "love" we got words with a motif of love and emotion. So you can see that the first word affects the song that the model produces (you can see the difference between the produced songs in the full table).

In conclusion, we were able to make a network that receives a word from a song and the representation of its midi file using two different methods.

We saw that the model succeeds in training and converging, but the final product of the words is not accurate and there is a lot of repetition. We believe, as we have already mentioned in the previous parts of the report, that by using a larger training set and performing more complex methods (increasing the window size or using attention techniques), it is possible to prevent this repetitiveness and produce a more accurate model.

But at all, we saw that the model did succeed from the first word and the midi files to try to represent a song and that there are sentences from the songs that were created that had a certain context.