Sprint 2

Product Backlog

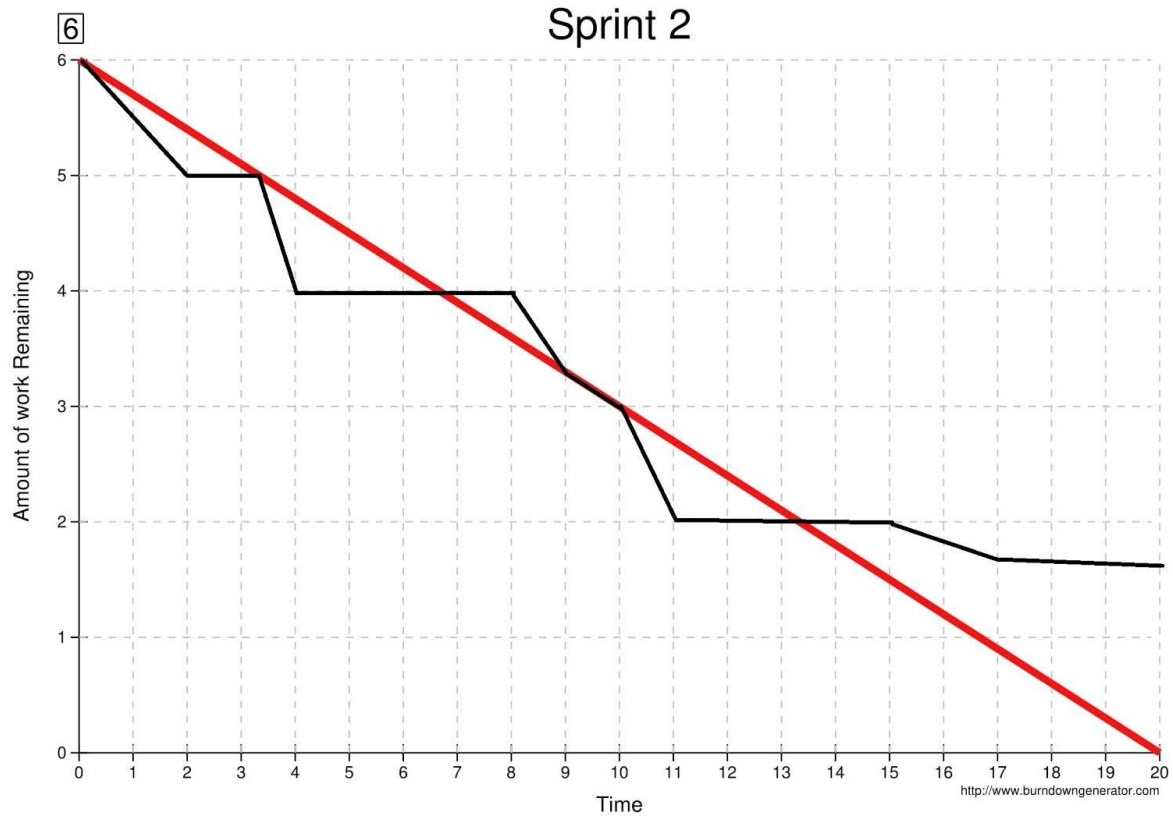| Story	Priority	Effort (1-10)	Validation
As a user, I want to be able to find a song by giving our application lyrics **verbally**.	1	5	Assistant returns the correct song
As a user, I want to be able to find a song by giving our application lyrics through **text**.	1	5	Assistant returns the correct song
As a user, I want to be able to respond to the application and have it play a sample of the song.	2	6	Assistant plays the song that it finds
As a user, I want the application to return a way of finding the song (apple music, google music, spotify).	3	6	Assistant provides working links to different media
As a user, I want the application to be precise in that it can predict the song with the correct lyrics that I am looking for each time it is run.	2	7	Assistant provides the same song for the same search as long as the user confirms it is correct.
As a user, I want the application to respond smoothly throughout the duration of the user conversation.	2	6	Assistant interprets user requests correctly, can adjust conversation effectively based on user responses
As a user, I want the application to ask if the correct song was played and if not, I want the application to smoothly attempt to try again.	3	6	Assistant takes in additional information to narrow down false results, responds back to user

As a user, I want to be able to give input to the application and have it learn from mistakes and get rewarded for successful finds (ML).	3	9	Assistant is able to use ML to predict the best and most likely song from a list of songs.
As a user, I want to be able to use the application in multiple languages.	4	9	Assistant is able to understand and communicate in multiple languages.
As a user, I want to use the application (user interface).	1	3	User is able to interact with the assistant by talking and typing.
As a user, I want to be able to find a song using just the lyrics from a song (genius API).	1	3	Application is able to find the requested song using genius API.
As a user, share the song with social media.	4	7	Working links to post on social media appear.
Set up the firebase and google actions environment and get them to work with external API calls	1	7	Our code in the cloud can do external API calls [outside google]

Sprint 2 Backlog

Story	Priority	Effort(1-10)	Validation
As a user, I want to use a Neural Network (NN) to find the artist of a song based on the songs full lyrics.	1	5	NN returns artist
As a user, I want to correctly predict the artist of a song based on our NN training	1	6	NN returns the correct song
As a user, I want to use lyric sentiment values to narrow down the search for our lyrics.	2	5	Application finds song in a subset determined by sentiment values
As a user, I want our application to retrieve sentiment data of lyrics using Google's Natural Language (NL) API	2	5	Code can execute google NL API
As a user, I want the firebase and google actions environment to work with python code we written.	2	4	Our google actions code can return results found with python code
As a user, once the song is returned, I want the application to play a sample of the song.	3	6	Application is able to link the returned song to a link or mp3 and play it for the user.

Burndown Chart

(Sprint 2)

Sprint 2

Red line: Ideal

Black line: Actual

UML Diagram: Lyricflow

Big Dataset

Receive Search Request In Natural Language

Train ML Model [TensorFlow]

Extract Relevant Information From the Query [Dialogflow]

Classifier

Send Response to User

User confirms result - No

User confirms result - Yes
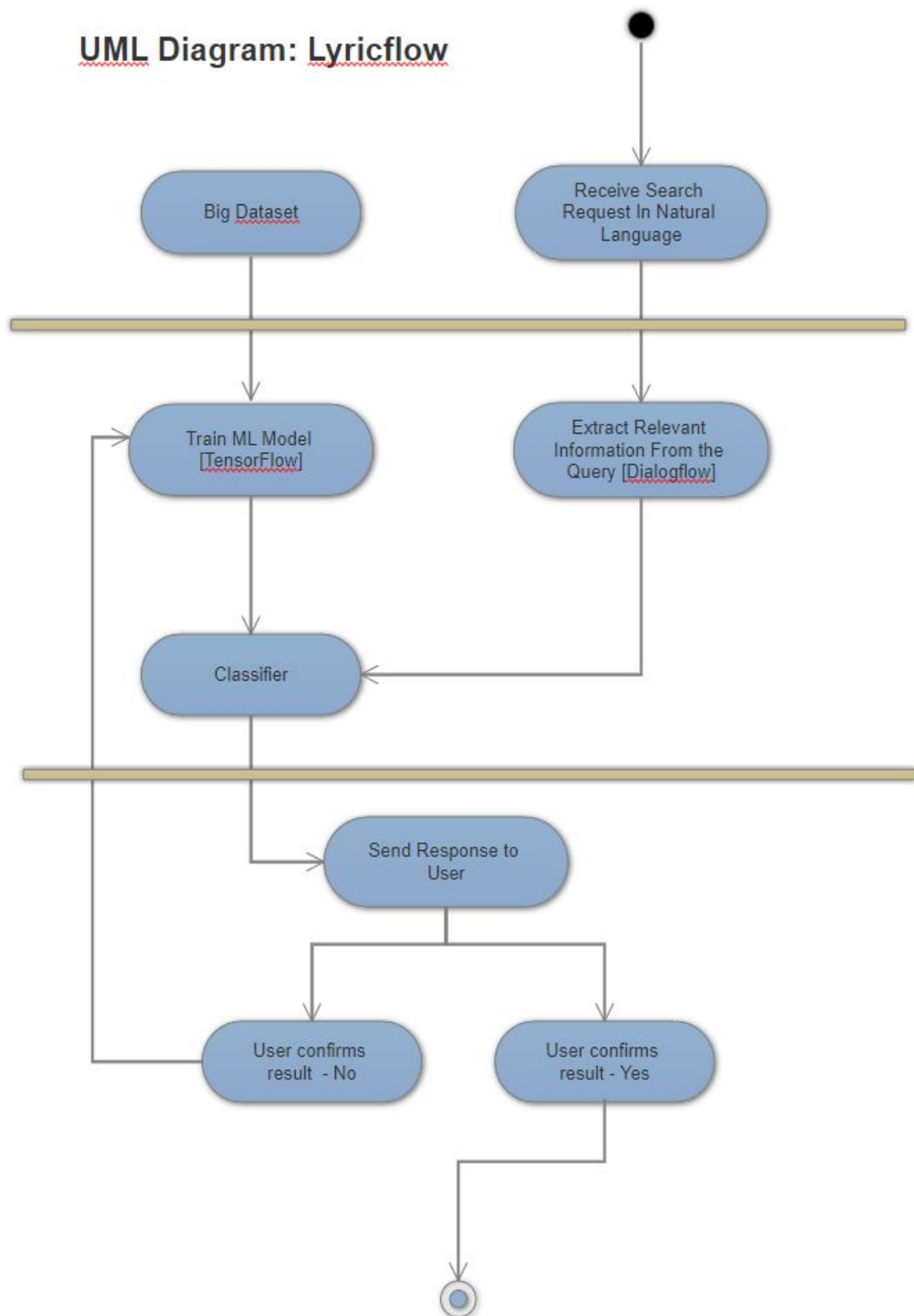
Sprint 2 tests/demos

Fig 1:

Training the model, 10 epochs

Fig 2:
Running a test with 100 random lyrics, with 92 correct predictions.