# Music Atlas (@music_atlas)

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## 1 Basic Info

**Team Members:**



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### 1.1 Code Repository:

https://github.com/shweta257/dataviscourse-pr-musicatlas

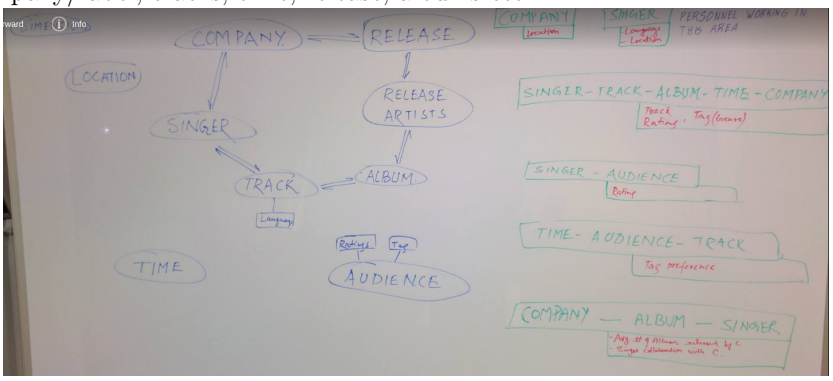
## 2 Background and Motivation

History shows music has always been a source of inspiration for the creative minds by the creative minds. Last couple of decades with the advent of information technology and social networking music has reached from one corner of the world to other. Exchange of such aesthetic medium has produced phenomenal creation. Recently some websites shows music related information, they are related to latest hit songs lacking any form of exploration feature. Our aim for this project is to build visualization for exploration and analysis of information related to music. Music enthusiasts want to explore songs of diverse taste. Our visualization will enable the end users (music enthusiast) to explore and learn facts about music of different geographical areas, cultures and genres. This will make an ultimate search experience for a music enthusiast. Currently this kind of information can only be accessed after an extensive google search. For example it is elusive to find any information about an artist or a genre based on locations. We would like to present MusicAtlas (@music_atlas) as a one-stop exploration and analysis tool for Music lovers.

# 3 Data

We are using the MusicBrainz open source database to answer interesting questions about the music world. We have collected the data by following the instructions provided by MusicBrainz for setting up the Postgres database of entire dataset.
**Database:** https://musicbrainz.org/doc/MusicBrainz_Database
**Server Repository:** https://bitbucket.org/lalinsky/mbslave

Some of the dimensions from MusicBrainz database we are using are artists, company/label, tracks, time, release, albums etc.




# 4 Project Objectives

The aim of this project is to provide user interface to educate, explore and analyze information related to music. The user should have the flexibility to explore the music, company(label/Recording Studio), artist or release data and see what the trend is with respect to location based on locations. We also want to show artist history, popularity etc. to see how the trend is changing by changing the parameter, the same could be observed for tracks or company. This musicbrainz also has time dimension attached to various entities, we want to leverage that to see the timeline trend for given entity (like company, artist, track etc).

# 5 Data Processing

The dataset which we have chosen is huge and in the form of relational tables which are linked with each other using keys. Also, the tables are huge with millions of entries in almost each entity tables. Also, the tables have various fields or meta-data information about the entities which we might not be using for our visualization. We will be using Artist, Company(Label), Release, Track, User(audience/listener) as main tables, from which we will be querying relevant

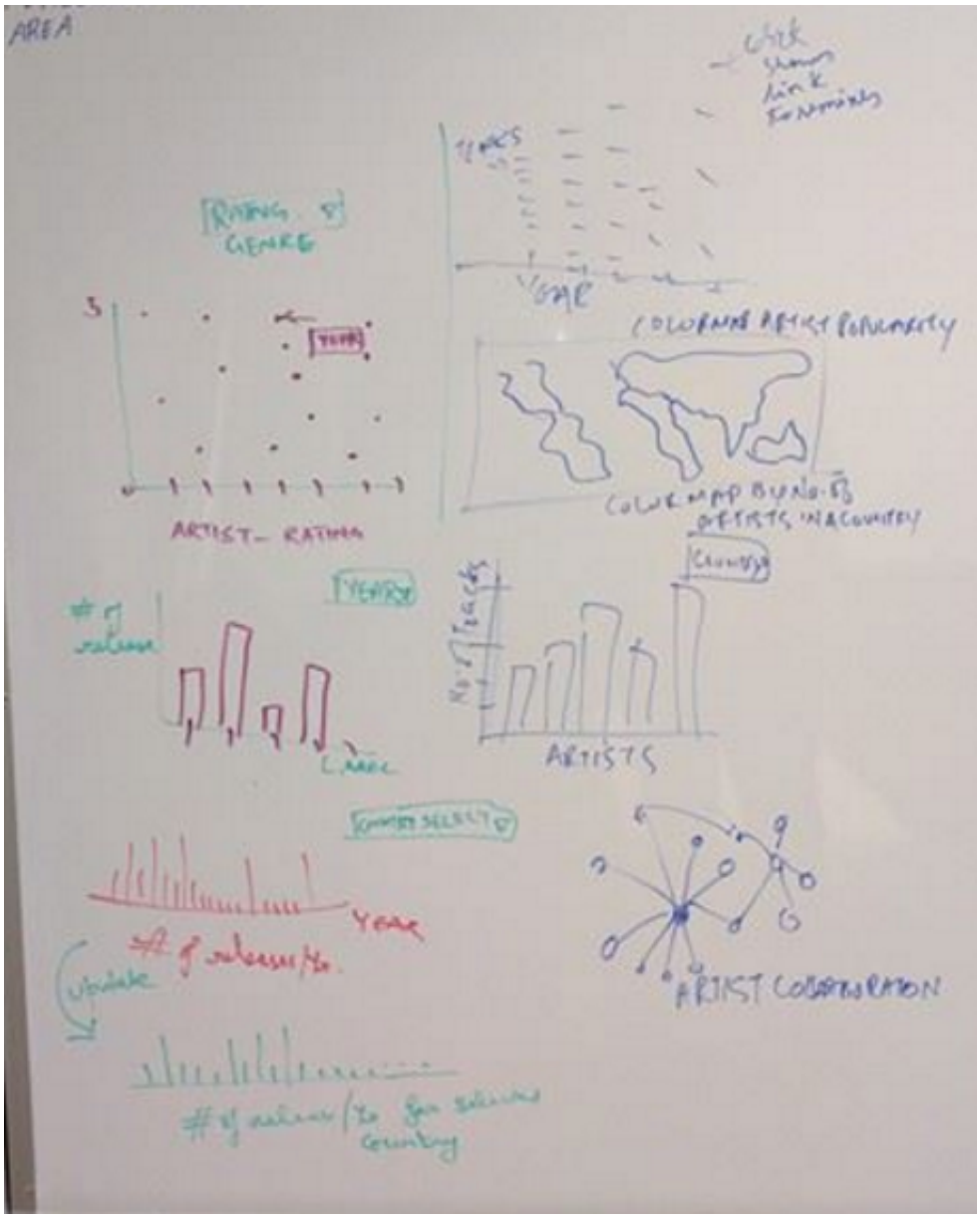
and data and exporting them in CSV format.

We first figured out the dimensions which we will be using in the visualization process and then we have sorted out the relevant attributes/facts which will be interesting to analyze. From the database we have observed that year information or timeline is scarce among. Hence, we have filtered the dataset which has timeline infomation. With the exception that empty column with timeline information in Labels table could mean that company still exists and releasing new albums and launching new artists.

To produce our analysis we will be making queries to multiple tables and also join them to find the correlation among them ( like we are planning to showcase the artist collaboration with company, for that purpose we will be joining the artist and company table with the release table which will result the releases that artist has done with the given label company and so on). For analysis purpose, we will be using the User ratings, tagging, annotations for the songs, artists and companies and also will analyze the ratings or tag preference according the edit history of the user. Artists origin, language, genre preference could be interesting in analysis, and the same applies to label companies based upon location.

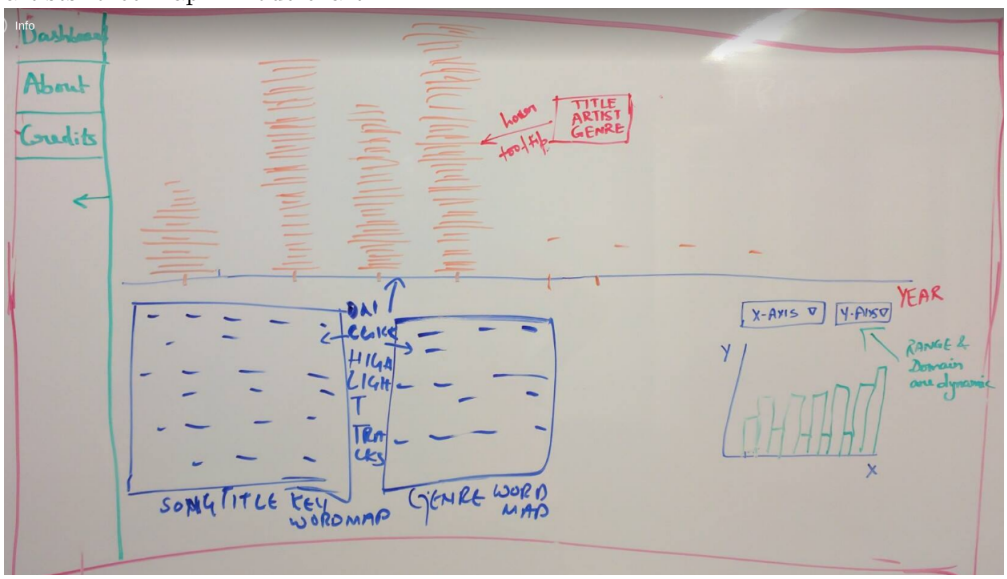
Using the given dataset in hand, we expect to see the artists genre interest with his/her collaboration with the label along with that his popularity region charts too. Also, we are expecting various interesting results regarding the shift in users music taste.

## 6 Visualization Designs

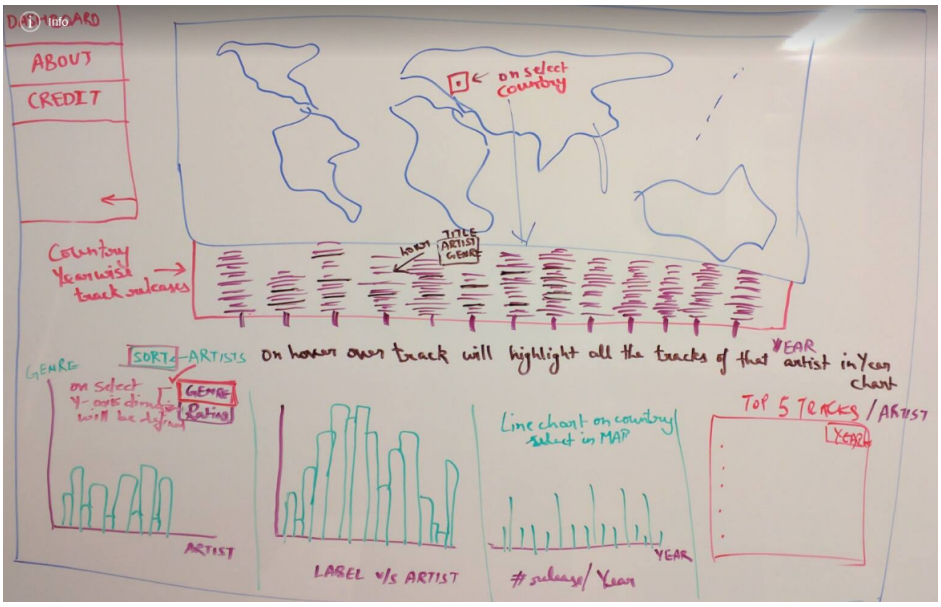



This chart is the initial layout which shows multiple SVG's fulfilling different purposes. Fist, the Artist rating is shown in scatter-plot which on hover display the year in which that rating is marked. Second, On selecting the year from the drop-down, the bar chart will display the number of releases by the label

companies in that year, by default one year details will be displayed. Third, On country select from the dropdown on the top-right side of that SVG, the number of releases done by any label aggregate is displayed with respect to year. By default the aggregate releases are displayed per year in line chart. Fourth, Track year scatterplot will be displayed in the top right side, on click, will show the link to the remix(but was complicated to get). Fifth, colored map with number of aritsts in country in world map and colorscale is proportional to the number of artists. Sixth, number of tracks released by artist in bar chart and at last the artists force map in node chart.




This design is more refined as compared to first design in managing the charts properly by providing the comparison axis selection in the right side in drop-down to render the below bar chart whose range and domain are dynamically loaded according to selection criteria in drop-down. Left-panel will have a Dash-board, About and Credits list which is collapsible. The main chart in this visu-alization is the year with track chart, where on hover on any track the tool-tip will be displayed with Full track title, artist and genre information and the track will be highlighted. Below, the song-title keyword mao and Genre word map which will interact with the year-track chart mentioned above.




This design uses a map where countries are colored differently based on the number of tracks released. On selecting a country we display the tracks based on year below it. On clicking a track all tracks by that particular artist will get highlighted. Along with it we would show bar chart comparing artist based on genre and ratings, number of artists per label, number of releases per year for the selected country and the top 5 artists or tracks of that selected country. This is all aimed at providing the user with a burst of information which helps him/her decide on the kind of music they would possibly want to hear.We could also show a top 5 based on genre or other things. The ideas are quite infant at present.


This design incorporates the best of the previous design to the best of our understanding. We would use a choropleth map displaying based on number of tracks per country. The bars below it is the representation of the number of tracks per country. On clicking the bar we would display the data in the charts below. Our display would show labels vs artists. A multi-dimension or choice bar chart for artist vs genre/popularity. We are yet to decide based on data if it would be possible to show a timeline for an artist. This data provides a good representation of the information and would amuse a music enthusiast. They would be able to see most sought after labels by artists, the genres most popular by artists etc.

# 7 Must-Have Features

- User-artist and User-song rating chart with Genre
- Artist collaboration with label company
- Artist popularity chart
- Search on the basis of artists, company label, country
- Sorting on tracks title, artists, company labels (if data available)

# 8 Optional Features

- Node map to display the connections between company to multiple artists with their tracks
- Timeline trend of the artist popularity

- User Genre preference timeline trend
- Brush implementation and zooming animation on timeline chart of artists

# 9 Project Schedule

**Team Members:**

| Week | Date | Deadlines: Debjyoti Paul | Deadlines: Nishant Agarwal | Deadlines: Shweta Singhal |
|---|---|---|---|---|
| 1 | Oct 28 | Data export | Data identify and clean | |
| 2 | Nov 4 | | | |
| 3 | Nov 11 | | | |
| 4 | Nov 18 | | | |
| 5 | Nov 25 | | | |
| 6 | Dec 2 | Project Due | | |