

Music and mental health

1. Group members

- Zinkin Zakhar 234-2
- Blinov Vladimir 234-2
- Suvorova Alexandra 234-2

2. Topic

Music therapy, or MT, is the use of music to improve an individual's stress, mood, and overall mental health. MT is also recognized as an evidence-based practice, using music as a catalyst for "happy" hormones such as oxytocin. However, MT employs a wide range of different genres, varying from one organization to the next. The MxMH dataset aims to identify what, if any, correlations exist between an individual's music taste and their self-reported mental health.

The dataset used in this project:

<https://www.kaggle.com/datasets/catherinerasgaitis/mxmh-survey-results/data>

3. Data used (list of parameters)

- 3.1. Age of a respondent, type int “1”
- 3.2. Hours per day, type double “1.1”
- 3.3. Instrumentalist & Composer (merge two columns to make a new one) = Professional musician (yes+yes = yes, yes+no = yes, no+no = no), replace words with numbers, type boolean “true” or “false”
- 3.4. Frequency (all genres), substitute words with numbers, type int (range from 0 to 3)

- 3.5. Anxiety, type int “1” (range from 0 to 10)
- 3.6. Depression, type int “1” (range from 0 to 10)
- 3.7. Insomnia, type int “1” (range from 0 to 10)
- 3.8. OCD, type int “1” (range from 0 to 10)
- 3.9. Music effects, replace words with numbers, type int “1”
(range from 0 to 2)

4. Requirements

4.1. Reading data from csv

- 4.1.1. void ReadByLine(const std::string&
inputCSVPath); //read csv line by line
- 4.1.2. void PassData(std::vector<Respondent>& data);
//add only necessary fields
- 4.1.3. class Respondent; //class of respondents

4.2. Writing data to csv

- 4.2.1. void WriteToCsv(const std::string&
outputCSVPath); //adds an arbitrary line to the csv
file;

4.3. Clusterization algorithm

- 4.3.1. void
ClusterizeByHierarchy(std::vector<Respondent>&
data); //clusterizes the data by hierarchy
- 4.3.2. void
ClusterizeByMedoids(std::vector<Respondent>&
data); //clusterizes the data by k-medoids
- 4.3.3. void ClusterizeByMeans(std::vector<Respondent>&
data); //clusterizes the data by k-means

4.4. Interpretation algorithm

4.4.1. `void InterpretedData();` //interprets data

4.5. GUI

4.5.1. `void SortByHierarchy();` //sorts by hierarchy

4.5.2. `void SortByMedoids();` //sorts by medoids

4.5.3. `void SortByMeans();` //sorts by means

4.5.4. `void AddNewLine(std::string user_input_line);` //adds
new line to csv based on user input

4.5.5. `void DeleteLine(int line);` //removes specific line from
csv

Code style:

`using namespace std;`

Google code style;

Music and Mental Health

Sort by Hierarchy

Sort by Medoids

Sort by Means

Add/delete a line

[Documentation](#)

1.0.0.V