World Happiness & Music

Intro

In this presentation, we will examine the relationship between music and happiness in countries around the world, alongside an analysis of student depression. Our analysis of data in these fields has yielded interesting insights.

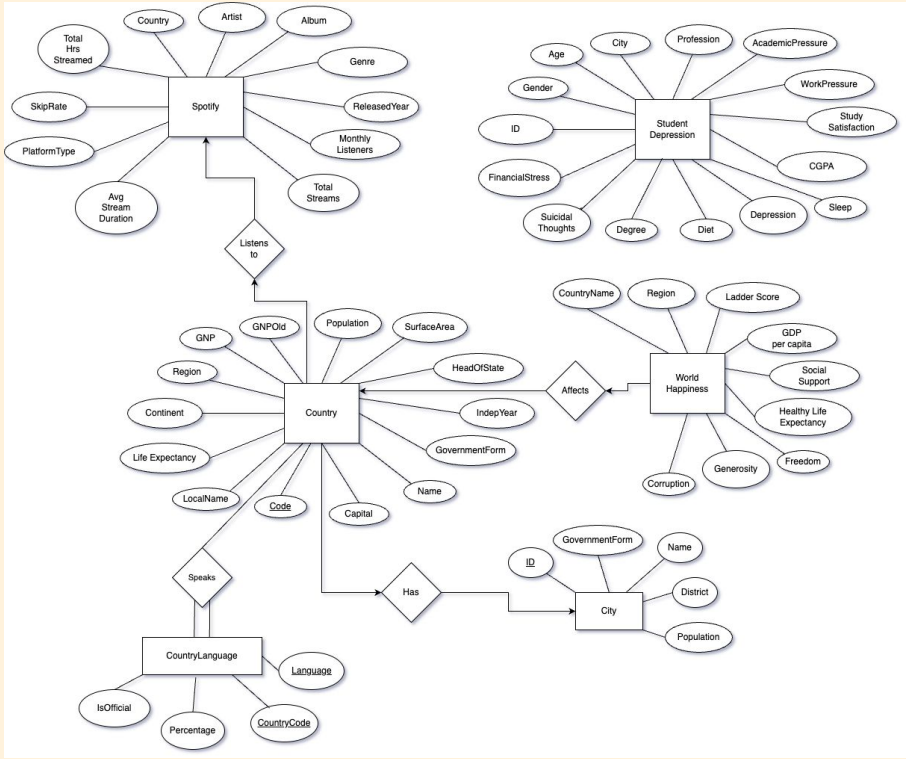
Music, a significant art form present in every culture, offers a wide array of genres. Individuals often select music based on their feelings, using it to enhance joy or even to connect with sadness.

During this presentation, we will share our findings, including the happiest countries and top-streamed albums globally. We will also showcase some of the SQL queries we used to extract this information.

Why Music?

- **Connects People:** Music fosters deep, shared emotional and cultural bonds.
- **Universal Language:** It transcends words, communicating feelings globally.
- **Emotional Outlet:** Music powerfully expresses and processes emotions.
- **Cultural Anchor:** It's vital to traditions, celebrations, and heritage.
- **Enhances Well-being:** Music impacts mood, reduces stress, and offers therapy.

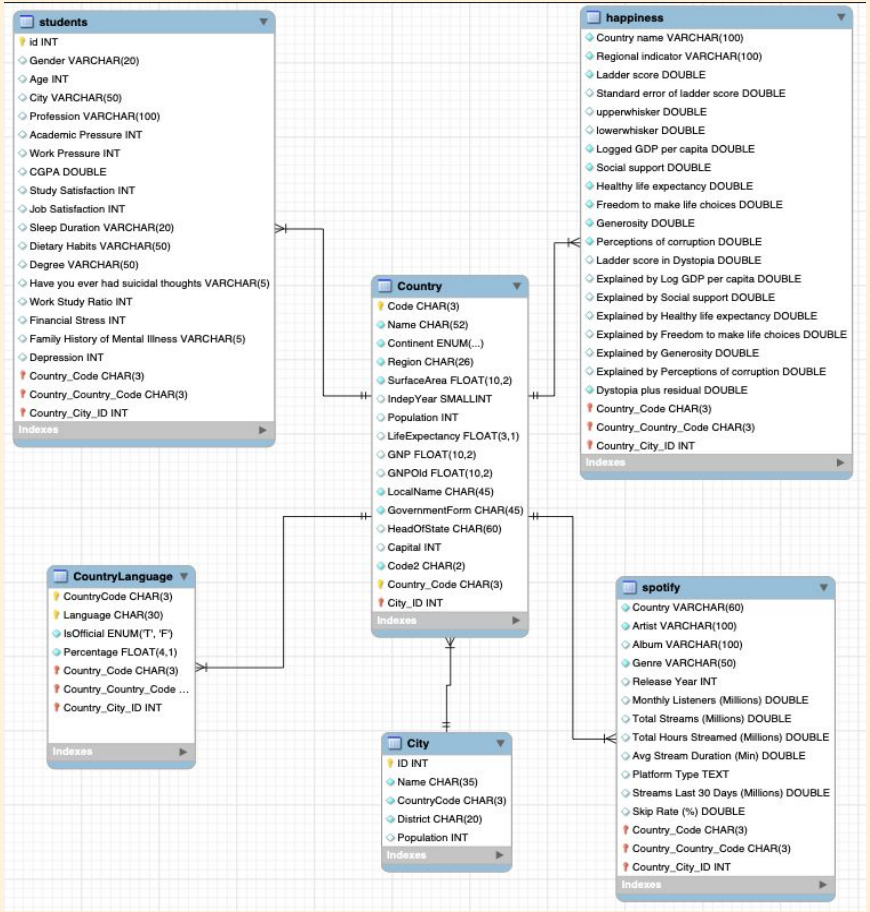
Schema / Relationships



Physical Model

This is the physical model for our database. Each table has primary keys that uniquely identify their rows, and foreign keys that reference other tables.

- Student Depression
- Country
- Country language
- City
- World Happiness
- Spotify album metrics

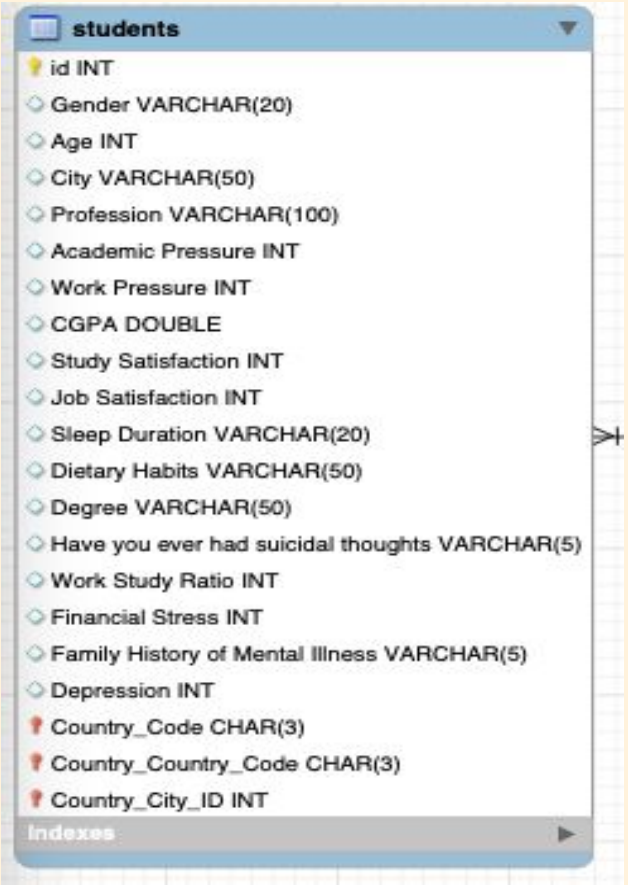


Students Table

India-based dataset on students' backgrounds, and whether they have depression. This dataset is probably meant for machine learning, and classifying those who could have depression.

Attributes used:

- Gender
- Age
- City [FK]
- Sleep Duration
- Diet
- Work/Study
- Financial Stress
- Depression (binary)



Spotify Table

A dataset that lists info for an album released in specific countries.

Attributes:

- Country [FK]
- Artist
- Album
- Genre
- Release Year
- Monthly listeners (millions)
- Total streams (millions)
- Hours streamed (millions)
- Avg stream duration
- Platform type (spotify premium/normal)
- Last 30 days streams
- Skip rate (percent)

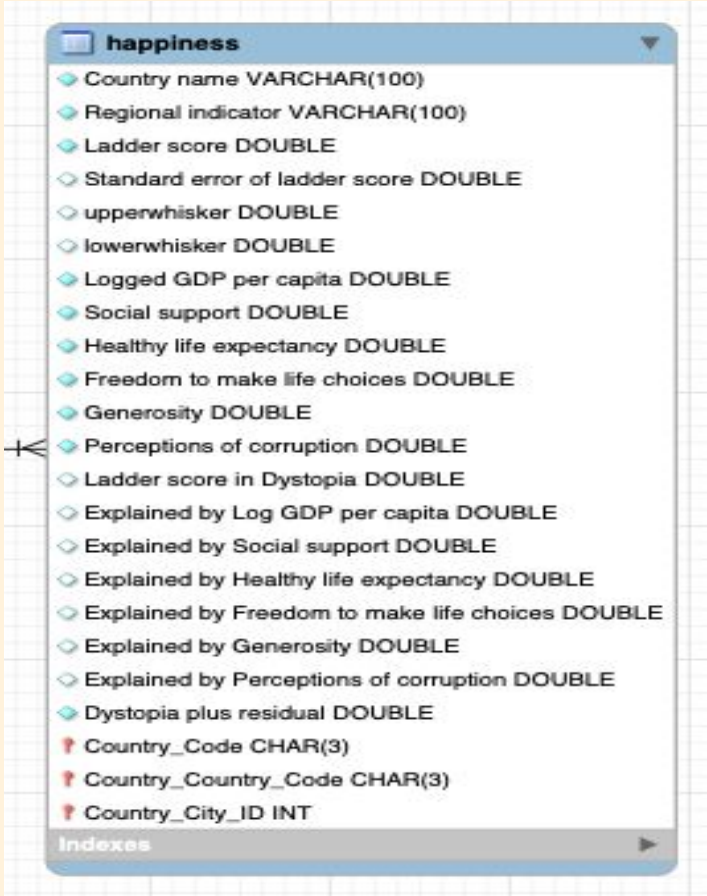
Happiness Table

The world happiness report from 2021.

Attributes:

- Country name [FK]
- Regional indicator
- Ladder score (main metric)
- Std error/whiskers
- GDP per capita
- Social support
- Healthy life expectancy
- Freedom for life choices
- Generosity
- Corruption

The other columns are more statistical information behind the columns used, and are not relevant



1. The Happiest Countries

```
SELECT country_name, regional_indictor, ladder_score
FROM WorldHappiness
ORDER BY ladder_score DESC
LIMIT 10;
```

country_name	regional_indicator	ladder_score
Finland	Western Europe	7.842
Denmark	Western Europe	7.62
Switzerland	Western Europe	7.571
Iceland	Western Europe	7.554
Netherlands	Western Europe	7.464
Norway	Western Europe	7.392
Sweden	Western Europe	7.363
Luxembourg	Western Europe	7.324
New Zealand	North America and ANZ	7.277
Austria	Western Europe	7.268

2. GDP per capita vs. Population and GNP

```
SELECT Country.Name,
WorldHappiness.logged_gdp_per_capita,
Country.Population, Country.GNP
FROM WorldHappiness
INNER JOIN Country ON Country.Name =
WorldHappiness.country_name;
```

Name	logged_gdp_per_ca...	Population	GNP
Afghanistan	7.695	22720000	5976.00
Albania	9.52	3401200	3205.00
United Arab Emirates	11.085	2441000	37966.00
Argentina	9.962	37032000	340238.00
Armenia	9.487	3520000	1813.00
Australia	10.796	18886000	351182.00
Austria	10.906	8091800	211860.00
Azerbaijan	9.569	7734000	4127.00
Burundi	6.635	6695000	903.00
Belgium	10.823	10239000	249704.00
Benin	8.087	6097000	2357.00
Burkina Faso	7.678	11937000	2425.00
Bangladesh	8.454	129155000	32852.00
Bulgaria	10.016	8190900	12178.00
Bahrain	10.669	617000	6366.00
Bosnia and Herzeg...	9.59	3972000	2841.00
Belarus	9.853	10236000	13714.00
Bolivia	9.046	8329000	8571.00
Brazil	9.577	170115000	776739.00
Botswana	9.782	1622000	4834.00
Canada	10.776	31147000	598862.00
Switzerland	11.117	7160400	264478.00
Chile	10.071	15211000	72949.00
China	9.673	1277558...	982268.00
Cameroon	8.189	15085000	9174.00
Colombia	9.557	42321000	102896.00
Comoros	8.031	578000	4401.00
Costa Rica	9.88	4023000	10226.00

3. Top streamed albums in the world

```
SELECT country, artist, album, release_year,
total_hours_streamed_million,
total_streams_millions
FROM Spotify
ORDER BY total_streams__millions DESC
LIMIT 10;
```

country	artist	album	release_year	total_hours_streamed__milli...	total_streams__milli...
Spain	Billie Eilish	Happier Than Ever	2019	17691.2	4985.54
France	BTS	Proof	2023	14641.6	4982.14
Germany	BTS	Proof	2023	15300.5	4982.01
Sweden	BTS	Proof	2023	17975.8	4977.34
Sweden	BTS	Proof	2018	20135.1	4970.09
India	BTS	Proof	2018	15417.2	4967.39
Argentina	The Weeknd	After Hours	2020	17645.1	4958.08
India	SZA	SOS	2022	12686.1	4919.96
Argentina	Ariana Grande	Eternal Sunshine	2022	12352.9	4906.61
Mexico	Karol G	MAÑANA SERÁ BONITO	2022	20424.5	4903.53

4. Life Expectancy & Happiness

```
SELECT WorldHappiness.country_name, WorldHappiness,
ladder_score, Country.LifeExpectancy
FROM WorldHappiness
INNER JOIN Country on WorldHappiness.country_name =
Country.Name
ORDER BY Country.LifeExpectancy DESC;
```

country_name	ladder_score	LifeExpectan...
Japan	5.94	80.7
Singapore	6.377	80.1
Australia	7.183	79.8
Switzerland	7.571	79.6
Sweden	7.363	79.6
Canada	7.103	79.4
Iceland	7.554	79.4
Italy	6.483	79.0
Spain	6.491	78.8
France	6.69	78.8
Norway	7.392	78.7
Israel	7.157	78.6
Greece	5.723	78.4
Netherlands	7.464	78.3
Malta	6.602	77.9
Belgium	6.834	77.8
New Zealand	7.277	77.8
Austria	7.268	77.7

5. Countries with happiness higher than the average

```
SELECT country_name, ladder_score,
healthy_life_expectancy, generosity
FROM WorldHappiness
WHERE ladder_score > (SELECT
AVG(ladder_score) from WorldHappiness);
```

country_name	ladder_score	healthy_life_expectan...	generosity
Finland	7.842	72	-0.098
Denmark	7.62	72.7	0.03
Switzerland	7.571	74.4	0.025
Iceland	7.554	73	0.16
Netherlands	7.464	72.4	0.175
Norway	7.392	73.3	0.093
Sweden	7.363	72.7	0.086
Luxembourg	7.324	72.6	-0.034
New Zealand	7.277	73.4	0.134
Austria	7.268	73.3	0.042
Australia	7.183	73.9	0.159
Israel	7.157	73.503	0.031
Germany	7.155	72.5	0.011
Canada	7.103	73.8	0.089
Ireland	7.085	72.4	0.077
Costa Rica	7.069	71.4	-0.126
United Kingd...	7.064	72.5	0.233
Czech Repu...	6.965	70.807	-0.208
United States	6.951	68.2	0.098
Belgium	6.834	72.199	-0.153
France	6.69	74	-0.147
Bahrain	6.647	69.495	0.089
Malta	6.602	72.2	0.133
Taiwan Provi...	6.584	69.6	-0.07
United Arab...	6.561	67.333	0.074
Saudi Arabia	6.494	66.603	-0.149
Spain	6.491	74.7	-0.081
Italy	6.483	73.8	-0.084

6. Students with Depression

```
SELECT
    depression,
    COUNT(*) AS student_count,
    AVG(academic_pressure) AS avg_academic_pressure,
    AVG(work_study_ratio) AS avg_work_study_ratio,
    AVG(financial_stress) AS avg_financial_stress
FROM StudentDepression
GROUP BY depression;
```

depression	student_cou...	avg_academic_press...	avg_work_study_ra...	avg_financial_stre...
1	21054	3.69	7.81	3.58
0	14847	2.37	6.26	2.52

Average academic pressure, work/study ratio, and financial stress metrics for students with and without depression in India.

Key Takeaways

- Relational database understanding
- SQL syntax
- Database Design
- Interacting with databases through Python
- Data input / table creation through Python
- Data exploration

Thank you!