KnowYourTown (Your games, your music)

Components

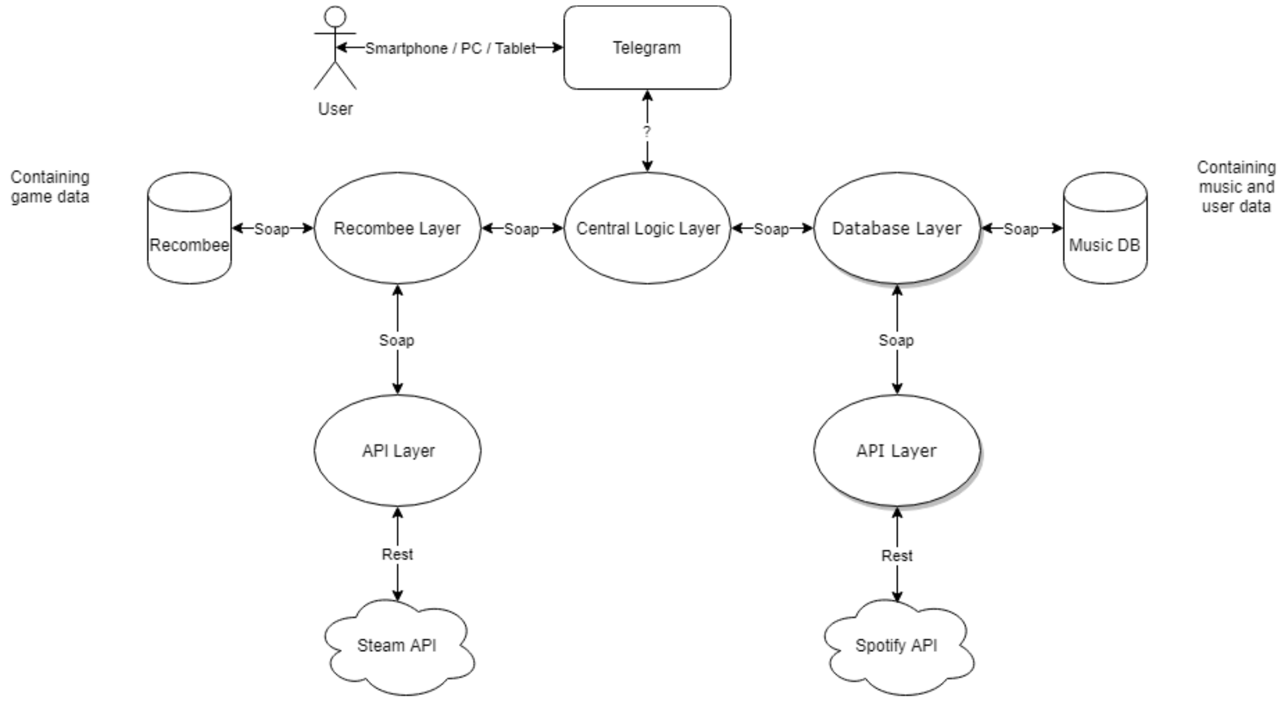
Know Your Town – Your games, your music is a service oriented application prototype aimed to collect and analyze citizens interests about videogames and music in order to promote better events (based on videogames, e-sports and similar) and activities organized in the town.

The application is based on data collected from two separated datasets: Spotify and Steam. Steam is a digital distribution platform developed by Valve Corporation, which offers digital rights management (DRM), multiplayer gaming, video streaming and social networking services. Spotify is a Swedish entertainment company founded by Daniel Ek and Martin Lorentzon. It specializes in music, podcast, and video streaming service that launched on 7 October 2008.

The user interface of the application is Telegram and the communication between the service and the user happens through a Telegram bot.

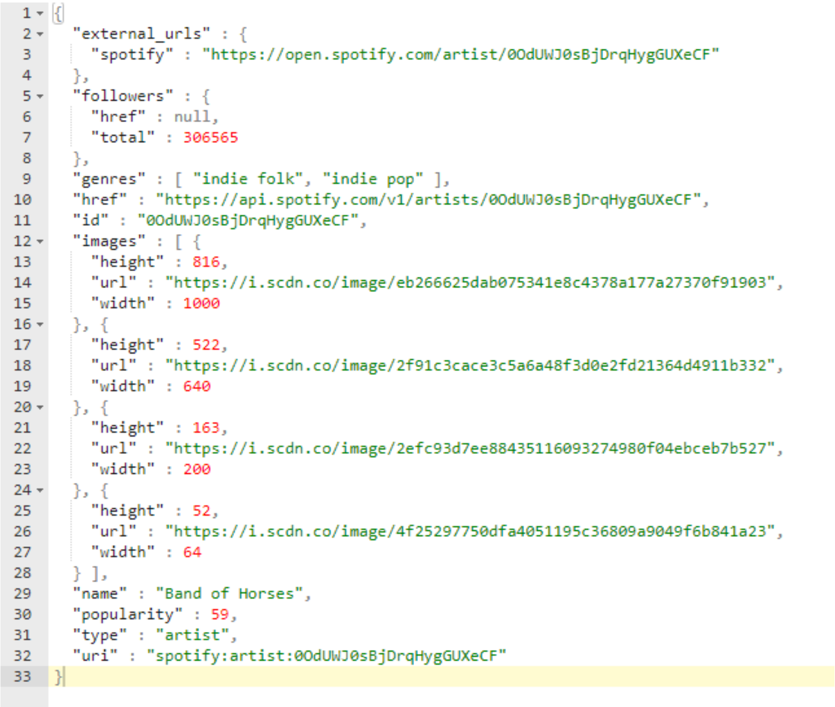
Implementation

The application is structured on the following architecture:

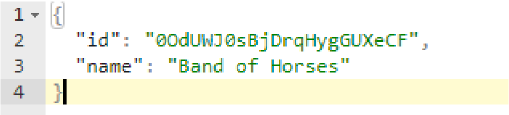


Starting from bottom-up and from the music part of the application, the Spotify API is introduced. This service is external and needs an authentication token to be used. The token is static and registered on spotify by specifying the name of the app and the use of it. The authentication procedure is done in the API Layer in a dedicated method. The API is very useful because it will populate the Music DB and return important information like data about artists, songs, top songs of given artists and recommendations.

The API Layer is an Adapter Service that converts the input data from the application into REST requests to the Spotify API and parse the JSON responses into JSON documents compatible with KnowYourTown. The specific methods are explained in the documentation of “SpotifyLayer” on github, which is the mentioned API Layer. A JSON example of an artist transformed from the Spotify response into KnowYourTown data format:

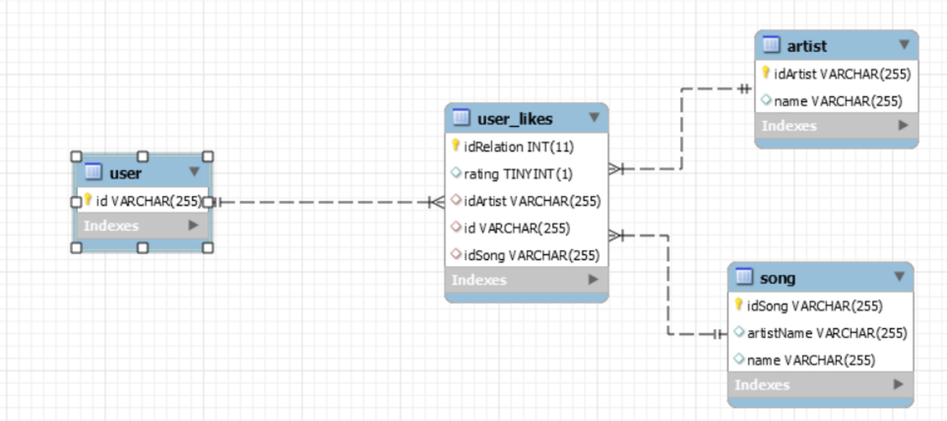


```
{
  "external_urls" : {
    "spotify" : "https://open.spotify.com/artist/0OdUWJ0sBjDrqHygGUXeCF"
  },
  "followers" : {
    "href" : null,
    "total" : 306565
  },
  "genres" : [ "indie folk", "indie pop" ],
  "href" : "https://api.spotify.com/v1/artists/0OdUWJ0sBjDrqHygGUXeCF",
  "id" : "0OdUWJ0sBjDrqHygGUXeCF",
  "images" : [ {
    "height" : 816,
    "url" : "https://i.scdn.co/image/eb266625dab075341e8c4378a177a27370f91903",
    "width" : 1000
  }, {
    "height" : 522,
    "url" : "https://i.scdn.co/image/2f91c3cace3c5a6a48f3d0e2fd21364d4911b332",
    "width" : 640
  }, {
    "height" : 163,
    "url" : "https://i.scdn.co/image/2efc93d7ee88435116093274980f04ebceb7b527",
    "width" : 200
  }, {
    "height" : 52,
    "url" : "https://i.scdn.co/image/4f25297750dfa4051195c36809a9049f6b841a23",
    "width" : 64
  } ],
  "name" : "Band of Horses",
  "popularity" : 59,
  "type" : "artist",
  "uri" : "spotify:artist:0OdUWJ0sBjDrqHygGUXeCF"
}
```



```
{
  "id": "0OdUWJ0sBjDrqHygGUXeCF",
  "name": "Band of Horses"
}
```

The Database Layer is a Data Service Layer that manages the database and the data coming from the adapter described previously. The database is a persistent and non-deleting one hosted on freemysqlhosting.net. This layer provides the crud operations of the user data and the music data, it stores the data collected from the Spotify API in order to avoid redundant requests and manages the preferences of the user. A quick overview of the DB schema is on the following picture:



In a similar way the “Steam API Layer” is an Adapter Service which interfaces data using Steam REST API and adapts the given information on custom objects using dedicated methods. These data are used by “RecombeeLayer” which communicates with the central logic layer and Recombee service.

Recombee service is called through its api and populate its database in order to give user suggestion about games.

Telegram bot is used as interface to interact and show information about games and songs by user via defined commands. It also suggest automaticaly songs based on users preferences on random liked games (to prove it a the timertask that generate the suggestoin is set to 10 minutes).

Functionalities

This section provides an overview of the possible functionalities of the application. When a person starts utilizing KnowYourTown by starting the telegram bot, the person gets automatically registered to the application since the telegram id is unique and doesn’t need any type of further authentication. In first place the bot asks the user to give some initial preferences about 5 random videogames and 5 predefined songs of different genres. This is useful in order to have some background information for future recommendations. At this point the user can decide to launch different methods:

- *register* - Register user
- *show_games_genres* - Show genres available for games
- *game* - Recommends games
- *game_genre* - Recommends games of required genre
- *show_owned_games* - Show a list of owned games
- *show_liked_games* - Show a list of liked games
- *show_discarded_games* - Show a list of discarded games
- *game_sales* - Show liked games prices
- *search_game* - Search a game
- *song* - Recommends songs
- *songs_artist* - Recommends songs of required artist
- *show_liked_songs* - Show a list of liked songs
- *show_discarded_songs* - Show a list of discarded songs
- *show_liked_artists* - Show a list of liked artists
- *show_discarted_artists* - Show a list of discarded artists
- *search_song* - Search a song
- *search_artist* - Search a artist

Since the main feature of KnowYourTown is the recommendation of items (music or videogames), this method becomes more and more accurate by adding preferences on items.