Shangqing Hu – SEC01 (NUID 001374342)

Big Data System Engineering with Scala
Spring 2023
Assignment (Working with APIs)

-List of Tasks Implemented

You may use Scala requests to get the Spotify Playlist data in JSON format.

The ID of the playlist is : 5Rrf7mqN8uus2AaQQQNdc1

The Spotify developer API is : https://developer.spotify.com/console/get-playlist/Links to an external site.
Playlist : https://open.spotify.com/playlist/5Rrf7mqN8uus2AaQQQNdc1Links to an external site.

In the JSON response, you will have the duration_ms field. This is the duration of each song in milliseconds. You are to find the top 10 longest songs. Each song will have an Artist name and an artist ID. There may be multiple artists for the same song. You are to query the artist details of every artist in the top 10 longest songs and display them in order of their followers.

The Spotify API to query the artist is : https://developer.spotify.com/console/get-artist/Links to an external site.

You must call this API for every artist ID in the top 10 longest songs.

The expected output would be :

Part 1)

Songname1 , duration_ms

Songname2 , duration_ms

......

Songname10 , duration_ms

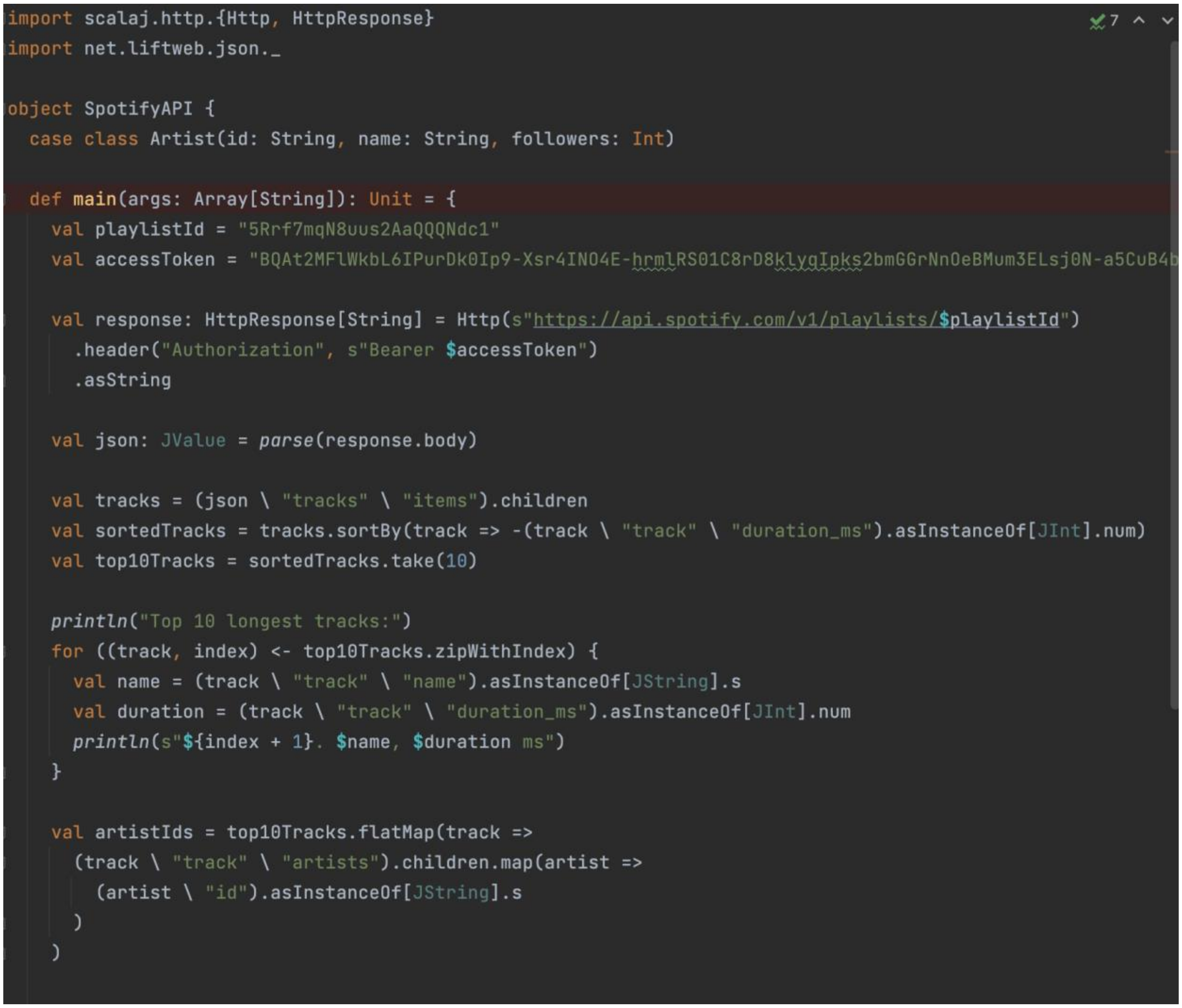
Part 2)

Artist1 : follower_count

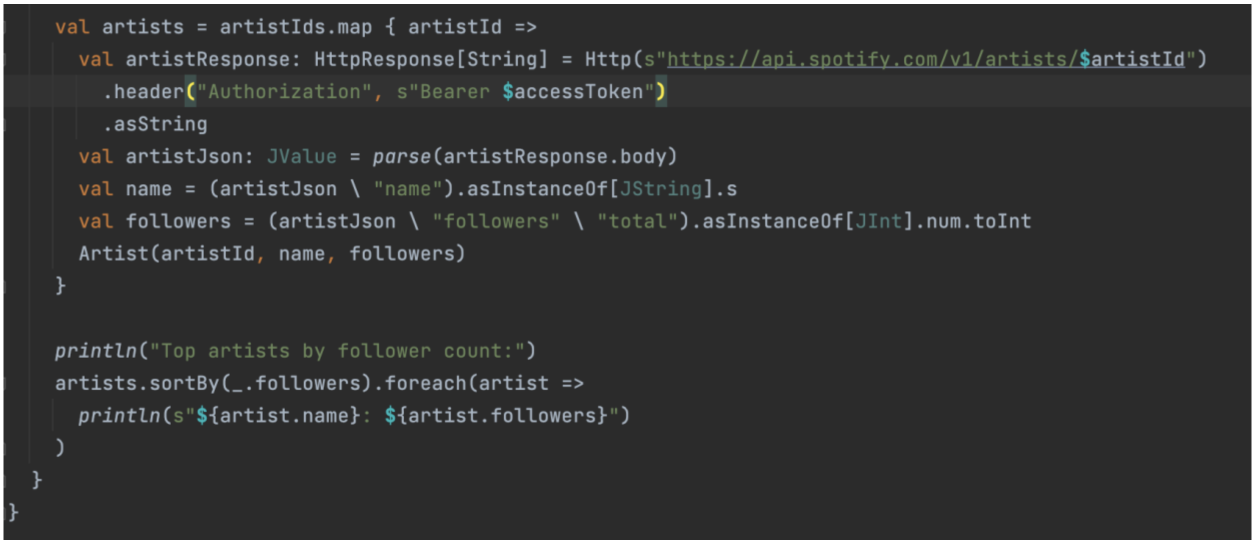
Artist2 : follower_count ... etc

All code must be in Scala.

-Code

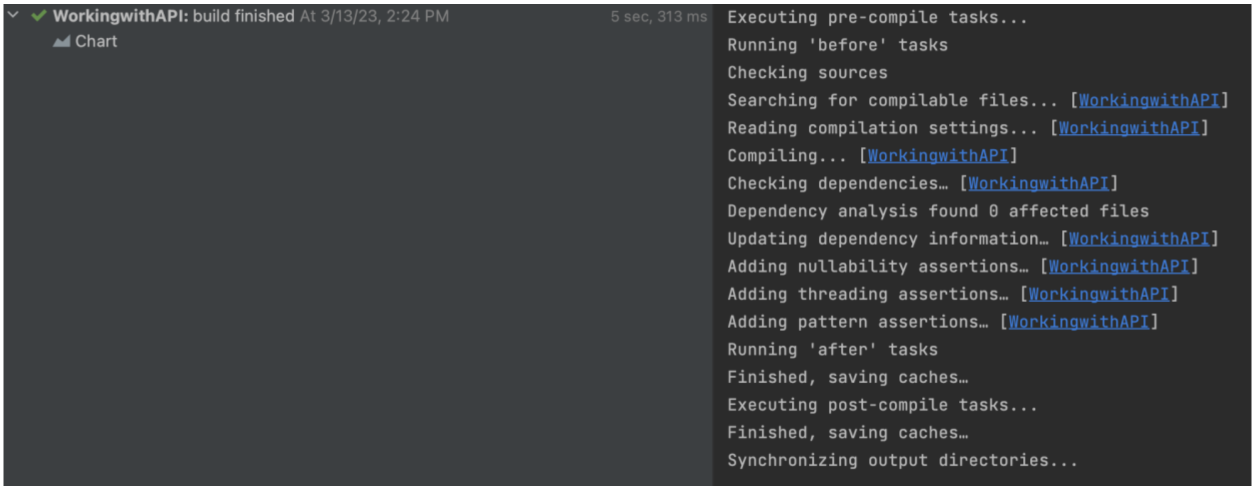


```scala
import scalaj.http.{Http, HttpResponse}
import net.liftweb.json._

object SpotifyAPI {
  case class Artist(id: String, name: String, followers: Int)

  def main(args: Array[String]): Unit = {
    val playlistId = "5Rrf7mqN8uus2AaQQQNdc1"
    val accessToken = "BQAt2MFlWkbL6IPurDk0Ip9-Xsr4INO4E-hrmlRS01C8rD8klygIpks2bmGGrNnOeBMum3ELsj0N-a5CuB4b

    val response: HttpResponse[String] = Http(s"https://api.spotify.com/v1/playlists/$playlistId")
      .header("Authorization", s"Bearer $accessToken")
      .asString

    val json: JValue = parse(response.body)

    val tracks = (json \ "tracks" \ "items").children
    val sortedTracks = tracks.sortBy(track => -(track \ "track" \ "duration_ms").asInstanceOf[JInt].num)
    val top10Tracks = sortedTracks.take(10)

    println("Top 10 longest tracks:")
    for ((track, index) <- top10Tracks.zipWithIndex) {
      val name = (track \ "track" \ "name").asInstanceOf[JString].s
      val duration = (track \ "track" \ "duration_ms").asInstanceOf[JInt].num
      println(s"${index + 1}. $name, $duration ms")
    }

    val artistIds = top10Tracks.flatMap(track =>
      (track \ "track" \ "artists").children.map(artist =>
        (artist \ "id").asInstanceOf[JString].s
      )
    )
```



```scala
    val artists = artistIds.map { artistId =>
      val artistResponse: HttpResponse[String] = Http(s"https://api.spotify.com/v1/artists/$artistId")
        .header("Authorization", s"Bearer $accessToken")
        .asString
      val artistJson: JValue = parse(artistResponse.body)
      val name = (artistJson \ "name").asInstanceOf[JString].s
      val followers = (artistJson \ "followers" \ "total").asInstanceOf[JInt].num.toInt
      Artist(artistId, name, followers)
    }

    println("Top artists by follower count:")
    artists.sortBy(_.followers).foreach(artist =>
      println(s"${artist.name}: ${artist.followers}")
    )
  }
}
```

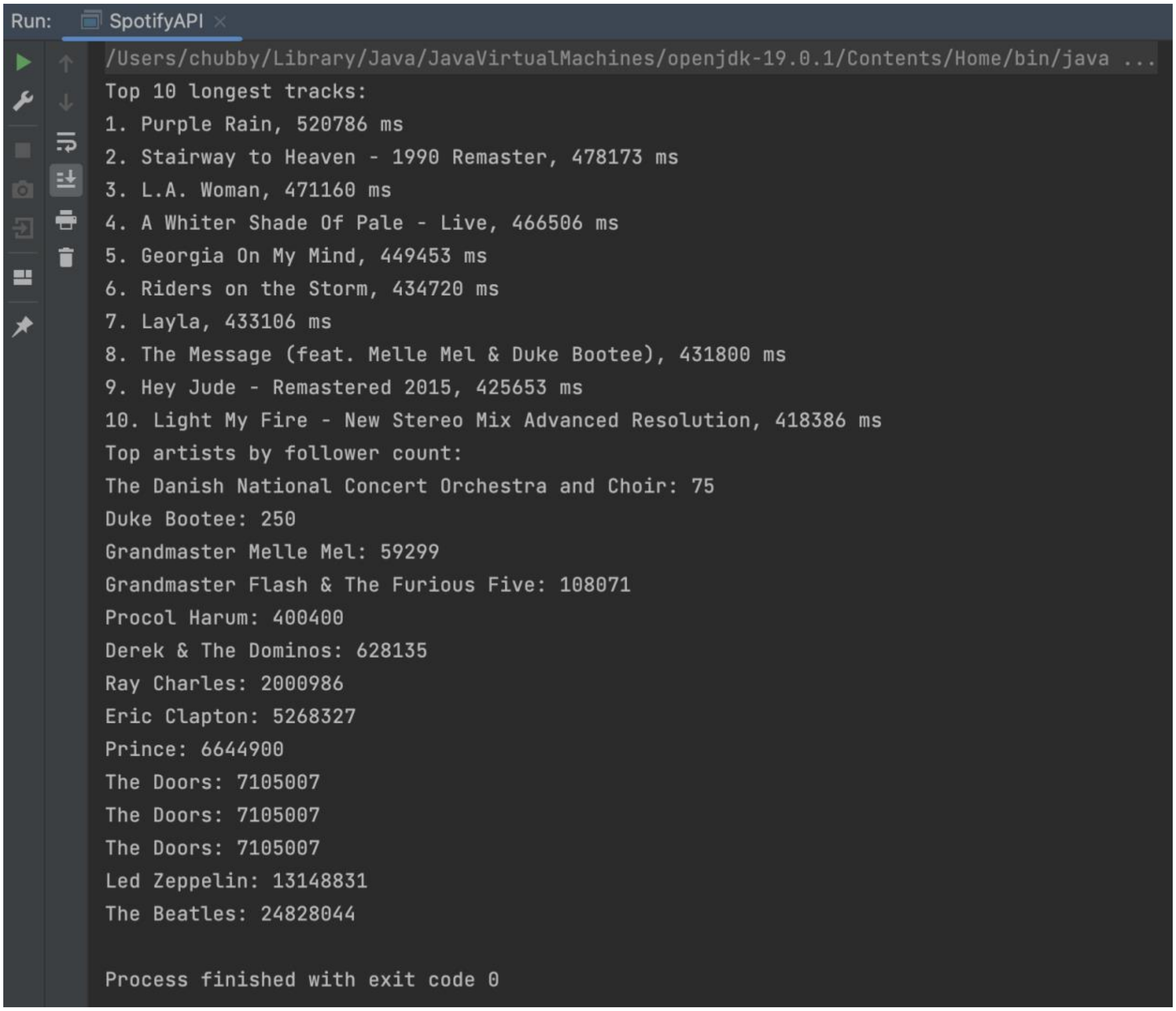
-Unit tests



WorkingwithAPI: build finished At 3/13/23, 2:24 PM 5 sec, 313 ms

```
Executing pre-compile tasks...
Running 'before' tasks
Checking sources
Searching for compilable files... [WorkingwithAPI]
Reading compilation settings... [WorkingwithAPI]
Compiling... [WorkingwithAPI]
Checking dependencies… [WorkingwithAPI]
Dependency analysis found 0 affected files
Updating dependency information… [WorkingwithAPI]
Adding nullability assertions… [WorkingwithAPI]
Adding threading assertions… [WorkingwithAPI]
Adding pattern assertions… [WorkingwithAPI]
Running 'after' tasks
Finished, saving caches…
Executing post-compile tasks...
Finished, saving caches…
Synchronizing output directories...
```

- Result



```
/Users/chubby/Library/Java/JavaVirtualMachines/openjdk-19.0.1/Contents/Home/bin/java ...
Top 10 longest tracks:
1. Purple Rain, 520786 ms
2. Stairway to Heaven - 1990 Remaster, 478173 ms
3. L.A. Woman, 471160 ms
4. A Whiter Shade Of Pale - Live, 466506 ms
5. Georgia On My Mind, 449453 ms
6. Riders on the Storm, 434720 ms
7. Layla, 433106 ms
8. The Message (feat. Melle Mel & Duke Bootee), 431800 ms
9. Hey Jude - Remastered 2015, 425653 ms
10. Light My Fire - New Stereo Mix Advanced Resolution, 418386 ms
Top artists by follower count:
The Danish National Concert Orchestra and Choir: 75
Duke Bootee: 250
Grandmaster Melle Mel: 59299
Grandmaster Flash & The Furious Five: 108071
Procol Harum: 400400
Derek & The Dominos: 628135
Ray Charles: 2000986
Eric Clapton: 5268327
Prince: 6644900
The Doors: 7105007
The Doors: 7105007
The Doors: 7105007
Led Zeppelin: 13148831
The Beatles: 24828044

Process finished with exit code 0
```