**Query artists from songs**

|  |  |  |  |
| --- | --- | --- | --- |
| **package** com.company;  **import** com.company.model.Datasourse; **import** java.util.List; **import** com.company.model.SongArtist; **public class** Main {   **public static void** main(String[] args) {  Datasourse d = **new** Datasourse();  **if**(!d.open()) {  System.***out***.println(**"Can't open d"**);  **return**;  }   List<SongArtist> songArtists = d.queryArtistsForSong(**"Go Your Own Way"**, d.***ORDER\_BY\_ASC***);  **if**(songArtists == **null**) {  System.***out***.println(**"Couldn't find the artist for the song"**);  **return**;  }   **for**(SongArtist artist : songArtists) {  System.***out***.println(**"Artist name = "** + artist.getArtistName() +  **" Album name = "** + artist.getAlbumName() +  **" Track = "** + artist.getTrack());  }   d.close();  } } | | **package** com.company.model;  **public class** SongArtist {  **private** String **artistName**;  **private** String **albumName**;  **private int track**;   **public** String getArtistName() {  **return artistName**;  }   **public void** setArtistName(String artistName) {  **this**.**artistName** = artistName;  }   **public** String getAlbumName() {  **return albumName**;  }   **public void** setAlbumName(String albumName) {  **this**.**albumName** = albumName;  }   **public int** getTrack() {  **return track**;  }   **public void** setTrack(**int** track) {  **this**.**track** = track;  } } | |
| **package** com.company;  **public class** Artists {   **private int id**;  **private** String **name**;   **public int** getId() {  **return id**;  }   **public void** setId(**int** id) {  **this**.**id** = id;  }   **public** String getName() {  **return name**;  }   **public void** setName(String name) {  **this**.**name** = name;  } } | **package** com.company;  **public class** Albums {   **private int id**;  **private** String **name**;  **private int artistsId**;   **public int** getId() {  **return id**;  }   **public void** setId(**int** id) {  **this**.**id** = id;  }   **public** String getName() {  **return name**;  }   **public void** setName(String name) {  **this**.**name** = name;  }   **public int** getArtistsId() {  **return artistsId**;  }   **public void** setArtistsId(**int** artistsId) {  **this**.**artistsId** = artistsId;  } } | | **package** com.company;  **public class** Songs {   **private int id**;  **private int track**;  **private** String **name**;  **private int albumId**;   **public int** getId() {  **return id**;  }   **public void** setId(**int** id) {  **this**.**id** = id;  }   **public int** getTrack() {  **return track**;  }   **public void** setTrack(**int** track) {  **this**.**track** = track;  }   **public** String getName() {  **return name**;  }   **public void** setName(String name) {  **this**.**name** = name;  }   **public int** getAlbumId() {  **return albumId**;  }   **public void** setAlbumId(**int** albumId) {  **this**.**albumId** = albumId;  } } |

|  |
| --- |
| **package** com.company.model;  **import** com.company.Artists;  **import** java.sql.\*; **import** java.util.ArrayList; **import** java.util.List;  **public class** Datasourse {   **public static final** String ***DB\_NAME*** = **"music.db"**;   **public static final** String ***CONNECTION\_STRING*** = **"jdbc:sqlite:C:\\javadb\\"** + ***DB\_NAME***;   *//column from database comes by a perticular order* **public static final** String ***TABLE\_ALBUMS*** = **"albums"**;  **public static final** String ***COLUMN\_ALBUM\_ID*** = **"\_id"**;  **public static final** String ***COLUMN\_ALBUM\_NAME*** = **"name"**;  **public static final** String ***COLUMN\_ALBUM\_ARTIST*** = **"artist"**;  **public static final int *INDEX\_ALBUM\_ID*** = 1;  **public static final int *INDEX\_ALBUM\_NAME*** = 2;  **public static final int *INDEX\_ALBUM\_ARTIST*** = 3;   **public static final** String ***TABLE\_ARTISTS*** = **"artists"**;  **public static final** String ***COLUMN\_ARTIST\_ID*** = **"\_id"**;  **public static final** String ***COLUMN\_ARTIST\_NAME*** = **"name"**;  **public static final int *INDEX\_ARTIST\_ID*** = 1;  **public static final int *INDEX\_ARTIST\_NAME*** = 2;   **public static final** String ***TABLE\_SONGS*** = **"songs"**;  **public static final** String ***COLUMN\_SONG\_TRACK*** = **"track"**;  **public static final** String ***COLUMN\_SONG\_TITLE*** = **"title"**;  **public static final** String ***COLUMN\_SONG\_ALBUM*** = **"album"**;  **public static final int *INDEX\_SONG\_ID*** = 1;  **public static final int *INDEX\_SONG\_TRACK*** = 2;  **public static final int *INDEX\_SONG\_TITLE*** = 3;  **public static final int *INDEX\_SONG\_ALBUM*** = 4;   **public static final int *ORDER\_BY\_NONE*** = 1;  **public static final int *ORDER\_BY\_ASC*** = 2;  **public static final int *ORDER\_BY\_DESC*** = 3;   **public static final** String ***QUERY\_ARTIST\_FOR\_SONG\_START*** =  **"SELECT "** + ***TABLE\_ARTISTS*** + **"."** + ***COLUMN\_ARTIST\_NAME*** + **", "** +  ***TABLE\_ALBUMS*** + **"."** + ***COLUMN\_ALBUM\_NAME*** + **", "** +  ***TABLE\_SONGS*** + **"."** + ***COLUMN\_SONG\_TRACK*** + **" FROM "** + ***TABLE\_SONGS*** +  **" INNER JOIN "** + ***TABLE\_ALBUMS*** + **" ON "** +  ***TABLE\_SONGS*** + **"."** + ***COLUMN\_SONG\_ALBUM*** + **" = "** + ***TABLE\_ALBUMS*** + **"."** + ***COLUMN\_ALBUM\_ID*** +  **" INNER JOIN "** + ***TABLE\_ARTISTS*** + **" ON "** +  ***TABLE\_ALBUMS*** + **"."** + ***COLUMN\_ALBUM\_ARTIST*** + **" = "** + ***TABLE\_ARTISTS*** + **"."** + ***COLUMN\_ARTIST\_ID*** +  **" WHERE "** + ***TABLE\_SONGS*** + **"."** + ***COLUMN\_SONG\_TITLE*** + **" = \""**;  **public static final** String ***QUERY\_ARTIST\_FOR\_SONG\_SORT*** =  **" ORDER BY "** + ***TABLE\_ARTISTS*** + **"."** + ***COLUMN\_ARTIST\_NAME*** + **", "** +  ***TABLE\_ALBUMS*** + **"."** + ***COLUMN\_ALBUM\_NAME*** + **" COLLATE NOCASE "**;   **private static** Connection *conn*; *//make it static else you gonna get error* **public boolean** open() {  **try** {  *conn* = DriverManager.*getConnection*(***CONNECTION\_STRING***);  **return true**;  } **catch**(SQLException e) {  System.***out***.println(**"Couldn't connect to database: "** + e.getMessage());  **return false**;  }  }   **public void** close() {  **try** {  **if**(*conn* != **null**) {  *conn*.close();  }  } **catch**(SQLException e) {  System.***out***.println(**"Couldn't close connection: "** + e.getMessage());  }  }   **public** List<SongArtist> queryArtistsForSong(String songName, **int** sortOrder) {   StringBuilder sb = **new** StringBuilder(***QUERY\_ARTIST\_FOR\_SONG\_START***);  sb.append(songName);  sb.append(**"\""**);   **if**(sortOrder != ***ORDER\_BY\_NONE***) {  sb.append(***QUERY\_ARTIST\_FOR\_SONG\_SORT***);  **if**(sortOrder == ***ORDER\_BY\_DESC***) {  sb.append(**"DESC"**);  } **else** {  sb.append(**"ASC"**);  }  }   System.***out***.println(**"SQL Statement: "** + sb.toString());   **try** (Statement statement = *conn*.createStatement();  ResultSet results = statement.executeQuery(sb.toString())) {   List<SongArtist> songArtists = **new** ArrayList<>();   **while**(results.next()) {  SongArtist songArtist = **new** SongArtist(); //🡺 Class  songArtist.setArtistName(results.getString(1));  songArtist.setAlbumName(results.getString(2));  songArtist.setTrack(results.getInt(3));  songArtists.add(songArtist); 🡺 list  }   **return** songArtists;  } **catch**(SQLException e) {  System.***out***.println(**"Query failed: "** + e.getMessage());  **return null**;  }  } } |
| **OUTPUT🡪** |
| **SQL Statement: SELECT artists.name, albums.name, songs.track FROM songs INNER JOIN albums ON songs.album = albums.\_id INNER JOIN artists ON albums.artist = artists.\_id WHERE songs.title = "Go Your Own Way" ORDER BY artists.name, albums.name COLLATE NOCASE ASC**  **Artist name = Fleetwood Mac Album name = Greatest Hits Track = 2**  **Artist name = Fleetwood Mac Album name = Rumours Track = 5**  **Artist name = Fleetwood Mac Album name = The Dance Track = 15**  **Artist name = Fleetwood Mac Album name = The Very Best Of Track = 1** |