Music Management System

Tables

```
mysql> show tables;
+----------------------+
| Tables_in_dbms_project |
+----------------------+
| album                |
| artist               |
| file                 |
| genre                |
| metadata             |
| playlist             |
| playlisttrack        |
| song                 |
| user                 |
+----------------------+
9 rows in set (0.01 sec)
```

1)Album

```
mysql> desc album;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| AlbumID     | int          | NO   | PRI | NULL    | auto_increment |
| Title       | varchar(255) | YES  |     | NULL    |                |
| ReleaseYear | int          | YES  |     | NULL    |                |
| Rating      | decimal(3,2) | YES  |     | NULL    |                |
| RecordLabel | varchar(255) | YES  |     | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
5 rows in set (0.02 sec)
```

```
mysql> select * from album;
+---------+------------------------------+-------------+--------+------------------+
| AlbumID | Title                        | ReleaseYear | Rating | RecordLabel      |
+---------+------------------------------+-------------+--------+------------------+
|       1 | A Night at the Opera         |        1975 |   5.00 | EMI              |
|       2 | ÷ (Divide)                   |        2017 |   4.00 | Atlantic Records |
|       3 | Hotel California             |        1976 |   5.00 | Asylum Records   |
|       4 | Thriller                     |        1982 |   5.00 | Epic Records     |
|       5 | Led Zeppelin IV              |        1971 |   5.00 | Atlantic Records |
|       6 | Despacito & Mis Grandes Éxitos |      2017 |   4.00 | Universal Latin  |
|       7 | Abbey Road                   |        1969 |   5.00 | Apple Records    |
|       8 | Uptown Special               |        2015 |   4.00 | RCA Records      |
|       9 | Imagine                      |        1971 |   5.00 | Apple Records    |
|      10 | 21                           |        2011 |   4.00 | XL Recordings    |
+---------+------------------------------+-------------+--------+------------------+
10 rows in set (0.01 sec)
```

2)Artist

```
mysql> desc artist;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| ArtistID    | int          | NO   | PRI | NULL    | auto_increment |
| Name        | varchar(255) | YES  |     | NULL    |                |
| Biography   | text         | YES  |     | NULL    |                |
| DateOfBirth | date         | YES  |     | NULL    |                |
| DateOfDeath | date         | YES  |     | NULL    |                |
| Nationality | varchar(255) | YES  |     | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
6 rows in set (0.00 sec)
```

```
mysql> select * from artist;
+----------+-----------------+---------------------------------------------------+-------------+-------------+------------------+
| ArtistID | Name            | Biography                                         | DateOfBirth | DateOfDeath | Nationality      |
+----------+-----------------+---------------------------------------------------+-------------+-------------+------------------+
|        1 | Queen           | Legendary rock band formed in London...           | 1946-09-05  | NULL        | British          |
|        2 | Ed Sheeran      | English singer-songwriter known for...            | 1991-02-17  | NULL        | British          |
|        3 | Eagles          | American rock band formed in Los Angeles...       | 1971-08-16  | NULL        | American         |
|        4 | Michael Jackson | King of Pop...                                    | 1958-08-29  | 2009-06-25  | American         |
|        5 | Led Zeppelin    | English rock band formed in London...             | 1968-09-25  | NULL        | British          |
|        6 | Luis Fonsi      | Puerto Rican singer, songwriter, and actor...     | 1978-04-15  | NULL        | Puerto Rican     |
|        7 | The Beatles     | English rock band formed in Liverpool...          | 1960-08-01  | 1970-04-10  | British          |
|        8 | Mark Ronson     | English-American musician, DJ, and record producer... | 1975-09-04 | NULL      | British-American |
|        9 | John Lennon     | English singer, songwriter, and peace activist... | 1940-10-09  | 1980-12-08  | British          |
|       10 | Adele           | English singer and songwriter...                  | 1988-05-05  | NULL        | British          |
+----------+-----------------+---------------------------------------------------+-------------+-------------+------------------+
10 rows in set (0.00 sec)
```

3) File

```
mysql> desc file;
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| FileID     | int          | NO   | PRI | NULL    | auto_increment |
| FileName   | varchar(255) | YES  |     | NULL    |                |
| FilePath   | varchar(255) | YES  |     | NULL    |                |
| FileSize   | varchar(255) | YES  |     | NULL    |                |
| FileFormat | varchar(10)  | YES  |     | NULL    |                |
| Bitrate    | varchar(255) | YES  |     | NULL    |                |
| SampleRate | varchar(255) | YES  |     | NULL    |                |
+------------+--------------+------+-----+---------+----------------+
7 rows in set (0.01 sec)
```

```
mysql> select * from file;
+--------+----------------------+------------------------------------------+----------+------------+-----------+------------+
| FileID | FileName             | FilePath                                 | FileSize | FileFormat | Bitrate   | SampleRate |
+--------+----------------------+------------------------------------------+----------+------------+-----------+------------+
|      1 | bohemian_rhapsody.mp3 | /music_files/bohemian_rhapsody.mp3      | 8.5 MB   | mp3        | 320 kbps  | 44.1 kHz   |
|      2 | shape_of_you.mp3     | /music_files/shape_of_you.mp3            | 7.2 MB   | mp3        | 256 kbps  | 44.1 kHz   |
|      3 | hotel_california.mp3 | /music_files/hotel_california.mp3        | 9.2 MB   | mp3        | 320 kbps  | 44.1 kHz   |
|      4 | billie_jean.mp3      | /music_files/billie_jean.mp3             | 7.8 MB   | mp3        | 256 kbps  | 44.1 kHz   |
|      5 | stairway_to_heaven.mp3 | /music_files/stairway_to_heaven.mp3    | 10.1 MB  | mp3        | 320 kbps  | 44.1 kHz   |
|      6 | despacito.mp3        | /music_files/despacito.mp3               | 7.5 MB   | mp3        | 256 kbps  | 44.1 kHz   |
|      7 | yesterday.mp3        | /music_files/yesterday.mp3               | 5.5 MB   | mp3        | 192 kbps  | 44.1 kHz   |
|      8 | uptown_funk.mp3      | /music_files/uptown_funk.mp3             | 8.3 MB   | mp3        | 320 kbps  | 44.1 kHz   |
|      9 | imagine.mp3          | /music_files/imagine.mp3                 | 6.6 MB   | mp3        | 192 kbps  | 44.1 kHz   |
|     10 | someone_like_you.mp3 | /music_files/someone_like_you.mp3        | 9.8 MB   | mp3        | 320 kbps  | 44.1 kHz   |
+--------+----------------------+------------------------------------------+----------+------------+-----------+------------+
10 rows in set (0.01 sec)
```

4) Genre

```
mysql> desc genre;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| GenreID     | int          | NO   | PRI | NULL    | auto_increment |
| Name        | varchar(255) | YES  |     | NULL    |                |
| Description | text         | YES  |     | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
3 rows in set (0.00 sec)
```

```
mysql> select * from genre;
+---------+-----------------+-------------------------------------------------------+
| GenreID | Name            | Description                                            |
+---------+-----------------+-------------------------------------------------------+
|       1 | Rock            | A genre of popular music that originated...            |
|       2 | Pop             | A genre of popular music that originated...            |
|       3 | Country         | A genre of American popular music that originated...   |
|       4 | R&B             | A genre of popular music that originated...            |
|       5 | Blues           | A genre of African American music that...              |
|       6 | Reggaeton       | A genre of music that originated in Puerto Rico...     |
|       7 | Classic         | A genre of music that includes Western classical...    |
|       8 | Funk            | A genre of music that originated in the mid-1960s...   |
|       9 | Imagine Dragons | An American pop rock band originating...               |
|      10 | Electronic      | A genre of music that involves the use of electronic...|
+---------+-----------------+-------------------------------------------------------+
10 rows in set (0.01 sec)
```

5) Metadata

```
mysql> desc metadata;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| MetadataID  | int          | NO   | PRI | NULL    | auto_increment |
| SongID      | int          | YES  | MUL | NULL    |                |
| AlbumID     | int          | YES  | MUL | NULL    |                |
| ArtistID    | int          | YES  | MUL | NULL    |                |
| GenreID     | int          | YES  | MUL | NULL    |                |
| FileID      | int          | YES  | MUL | NULL    |                |
| TrackNumber | int          | YES  |     | NULL    |                |
| Composer    | varchar(255) | YES  |     | NULL    |                |
| Conductor   | varchar(255) | YES  |     | NULL    |                |
| BPM         | int          | YES  |     | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
10 rows in set (0.00 sec)
```

```
mysql> select * from metadata;
+------------+--------+---------+----------+---------+--------+-------------+-----------------------------+-----------+-----+
| MetadataID | SongID | AlbumID | ArtistID | GenreID | FileID | TrackNumber | Composer                    | Conductor | BPM |
+------------+--------+---------+----------+---------+--------+-------------+-----------------------------+-----------+-----+
|          1 |      1 |       1 |        1 |       1 |      1 |           1 | Freddie Mercury             | NULL      |  76 |
|          2 |      2 |       2 |        2 |       2 |      2 |           1 | Ed Sheeran                  | NULL      |  95 |
|          3 |      3 |       3 |        3 |       1 |      3 |           1 | Don Henley, Glenn Frey      | NULL      |  75 |
|          4 |      4 |       4 |        4 |       2 |      4 |           1 | Michael Jackson             | NULL      | 117 |
|          5 |      5 |       5 |        5 |       1 |      5 |           1 | Jimmy Page, Robert Plant    | NULL      |  82 |
|          6 |      6 |       6 |        6 |       6 |      6 |           1 | Luis Fonsi                  | NULL      |  89 |
|          7 |      7 |       7 |        7 |       2 |      7 |           1 | Paul McCartney, John Lennon | NULL      |  60 |
|          8 |      8 |       8 |        8 |       2 |      8 |           1 | Mark Ronson, Jeff Bhasker   | NULL      | 115 |
|          9 |      9 |       9 |        9 |       1 |      9 |           1 | John Lennon                 | NULL      |  75 |
|         10 |     10 |      10 |       10 |       2 |     10 |           1 | Adele, Dan Wilson           | NULL      |  67 |
+------------+--------+---------+----------+---------+--------+-------------+-----------------------------+-----------+-----+
10 rows in set (0.01 sec)
```

6) Playlist

```
mysql> desc playlist;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| PlaylistID  | int          | NO   | PRI | NULL    | auto_increment |
| Name        | varchar(255) | NO   |     | NULL    |                |
| Description | text         | YES  |     | NULL    |                |
| CreatedBy   | int          | YES  | MUL | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

```
mysql> select * from playlist;
+------------+---------------------+------------------------------------------+-----------+
| PlaylistID | Name                | Description                              | CreatedBy |
+------------+---------------------+------------------------------------------+-----------+
|          1 | Rock Classics       | A collection of classic rock songs       |         1 |
|          2 | Top Hits 2020       | The best hits of the year                |         2 |
|          3 | Epic Guitar Solos   | Playlist featuring iconic guitar solos...|         1 |
|          4 | Chill Vibes         | Relaxing music for any occasion          |         2 |
|          5 | 80s Flashback       | Travel back in time with these 80s hits  |         1 |
|          6 | Workout Beats       | Energizing tunes for your workout        |         2 |
|          7 | The Beatles Forever | A tribute to the legendary band          |         1 |
|          8 | Dance Party         | Get ready to hit the dance floor         |         2 |
|          9 | Peaceful Piano      | Gentle piano melodies for relaxation     |         1 |
|         10 | Indie Vibes         | Discover new indie hits                  |         1 |
+------------+---------------------+------------------------------------------+-----------+
10 rows in set (0.01 sec)
```

7) Playlisttrack

```
mysql> desc playlisttrack;
+----------------+------+------+-----+---------+----------------+
| Field          | Type | Null | Key | Default | Extra          |
+----------------+------+------+-----+---------+----------------+
| PlaylistTrackID| int  | NO   | PRI | NULL    | auto_increment |
| PlaylistID     | int  | YES  | MUL | NULL    |                |
| TrackID        | int  | YES  | MUL | NULL    |                |
| Queue          | int  | YES  |     | NULL    |                |
+----------------+------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

```
mysql> select * from playlisttrack;
+-----------------+------------+---------+-------+
| PlaylistTrackID | PlaylistID | TrackID | Queue |
+-----------------+------------+---------+-------+
|               1 |          1 |       1 |     1 |
|               2 |          2 |       2 |     1 |
|               3 |          3 |       3 |     1 |
|               4 |          4 |       4 |     1 |
|               5 |          5 |       5 |     1 |
|               6 |          6 |       6 |     1 |
|               7 |          7 |       7 |     1 |
|               8 |          8 |       8 |     1 |
|               9 |          9 |       9 |     1 |
|              10 |         10 |      10 |     1 |
+-----------------+------------+---------+-------+
10 rows in set (0.01 sec)
```

8) Song

```
mysql> desc song;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| SongID      | int          | NO   | PRI | NULL    | auto_increment |
| Title       | varchar(255) | YES  |     | NULL    |                |
| Duration    | time         | YES  |     | NULL    |                |
| ReleaseYear | int          | YES  |     | NULL    |                |
| Rating      | decimal(3,2) | YES  |     | NULL    |                |
| Lyrics      | text         | YES  |     | NULL    |                |
| PlayCount   | int          | YES  |     | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
7 rows in set (0.01 sec)
```

```
mysql> select * from song;
+--------+-------------------+----------+-------------+--------+------------------------------------------------+-----------+
| SongID | Title             | Duration | ReleaseYear | Rating | Lyrics                                         | PlayCount |
+--------+-------------------+----------+-------------+--------+------------------------------------------------+-----------+
|      1 | Bohemian Rhapsody | 06:07:00 |        1975 |   5.00 | Is this the real life...                       |    100000 |
|      2 | Shape of You      | 03:54:00 |        2017 |   4.00 | The club isn't the best place...               |    120000 |
|      3 | Hotel California  | 06:30:00 |        1976 |   5.00 | On a dark desert highway...                    |     95000 |
|      4 | Billie Jean       | 04:54:00 |        1983 |   4.00 | She was more like a beauty queen...            |     80000 |
|      5 | Stairway to Heaven| 08:02:00 |        1971 |   5.00 | There's a lady who's sure all that glitters is gold... |     90000 |
|      6 | Despacito         | 03:49:00 |        2017 |   4.00 | Ay, Fonsi, DY...                               |    110000 |
|      7 | Yesterday         | 02:04:00 |        1965 |   5.00 | Yesterday, all my troubles seemed so far away...|     88000 |
|      8 | Uptown Funk       | 04:31:00 |        2014 |   4.00 | This hit, that ice cold...                     |    105000 |
|      9 | Imagine           | 03:03:00 |        1971 |   5.00 | Imagine there's no heaven...                   |     92000 |
|     10 | Someone Like You  | 04:45:00 |        2011 |   4.00 | I heard that you're settled down...            |     98000 |
+--------+-------------------+----------+-------------+--------+------------------------------------------------+-----------+
10 rows in set (0.01 sec)
```

9) User

```
mysql> desc user;
+---------------+--------------+------+-----+---------+----------------+
| Field         | Type         | Null | Key | Default | Extra          |
+---------------+--------------+------+-----+---------+----------------+
| UserID        | int          | NO   | PRI | NULL    | auto_increment |
| Username      | varchar(255) | NO   |     | NULL    |                |
| Password      | varchar(255) | NO   |     | NULL    |                |
| Email         | varchar(255) | YES  |     | NULL    |                |
| ProfilePicture| varchar(255) | YES  |     | NULL    |                |
+---------------+--------------+------+-----+---------+----------------+
5 rows in set (0.00 sec)
```



```
mysql> select * from user;
+--------+----------------+--------------+----------------------------+--------------------+
| UserID | Username       | Password     | Email                      | ProfilePicture     |
+--------+----------------+--------------+----------------------------+--------------------+
|      1 | MusicLover123  | password123  | musiclover@email.com       | profile_pic1.jpg   |
|      2 | EdFan          | edsheeran123 | edfan@email.com            | profile_pic2.jpg   |
|      3 | RockStar99     | rockmusic456 | rockstar@email.com         | profile_pic3.jpg   |
|      4 | PopPrincess    | popmusic789  | popprincess@email.com      | profile_pic4.jpg   |
|      5 | BluesMaster    | blues123     | blues@email.com            | profile_pic5.jpg   |
|      6 | ReggaetonFan   | reggaeton456 | reggaetonfan@email.com     | profile_pic6.jpg   |
|      7 | ClassicListener| classic789   | classic@email.com          | profile_pic7.jpg   |
|      8 | FunkyGroover   | funky123     | funky@email.com            | profile_pic8.jpg   |
|      9 | ImagineFan     | imagine456   | imagine@email.com          | profile_pic9.jpg   |
|     10 | AdeleAdmirer   | adele789     | adele@email.com            | profile_pic10.jpg  |
+--------+----------------+--------------+----------------------------+--------------------+
10 rows in set (0.00 sec)
```

Triggers:


```
mysql> show triggers;
+---------------------------+--------+--------------+----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------+
| Trigger                   | Event  | Table        | Statement
| Timing | Created                | sql_mode                                                                                                    | Definer        | character_set_client | collation_conne
ction | Database Collation |
+---------------------------+--------+--------------+----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------+
| validate_file_size        | INSERT | file         | BEGIN
    IF NEW.FileSize > 1024 * 1024
    THEN
        SIGNAL SQLSTATE '45000'
        SET MESSAGE_TEXT = 'File size cannot exceed 1 MB';
    END IF;
END | BEFORE | 2023-11-23 15:28:29.10 | ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_ENGINE_SUBSTITUTION | root@localhost | cp850                | cp850_gener
al_ci   | utf8mb4_0900_ai_ci |
| update_playcount          | INSERT | playlisttrack| BEGIN
    UPDATE Song SET PlayCount = PlayCount + 1 WHERE SongID = NEW.TrackID;
END                                                       | AFTER  | 2023-11-23 15:27:26.07 | ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_
ENGINE_SUBSTITUTION | root@localhost | cp850               | cp850_general_ci     | utf8mb4_0900_ai_ci |
| increment_playlist_order  | INSERT | playlisttrack| BEGIN
    UPDATE PlaylistTrack
    SET `queue` = `queue` + 1
    WHERE PlaylistID = NEW.PlaylistID AND `queue` >= NEW.`queue`;
END                                    | AFTER  | 2023-11-23 15:31:53.61 | ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_ENGINE_SUBSTITUTION | root@localhost | cp850
       | cp850_general_ci     | utf8mb4_0900_ai_ci |
| create_initial_playlist   | INSERT | user         | BEGIN
    INSERT INTO Playlist (Name, Description, CreatedBy)
    VALUES ('My Playlist', 'Welcome to your new playlist!', NEW.UserID);
END            | AFTER  | 2023-11-23 15:23:17.68 | ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_ENGINE_SUBSTITUTION | root@localhost | cp850
        | cp850_general_ci     | utf8mb4_0900_ai_ci |
+---------------------------+--------+--------------+----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------+
4 rows in set (0.01 sec)
```

Functions:

```
mysql> show function status where Db = 'dbms_project';
+-------------+-----------------------------+----------+----------------+---------------------+---------------------+---------------+---------+----------------------+----------------------+--------------------+
| Db          | Name                        | Type     | Definer        | Modified            | Created             | Security_type | Comment | character_set_client | collation_connection | Database Collation |
+-------------+-----------------------------+----------+----------------+---------------------+---------------------+---------------+---------+----------------------+----------------------+--------------------+
| dbms_project | count_songs_in_genre        | FUNCTION | root@localhost | 2023-11-23 15:40:07 | 2023-11-23 15:40:07 | DEFINER       |         | cp850                | cp850_general_ci     | utf8mb4_0900_ai_c  |
| dbms_project | get_avg_playcount_for_artist | FUNCTION | root@localhost | 2023-11-23 15:36:41 | 2023-11-23 15:36:41 | DEFINER       |         | cp850                | cp850_general_ci     | utf8mb4_0900_ai_c  |
| dbms_project | get_most_played_genre_for_user | FUNCTION | root@localhost | 2023-11-23 15:37:53 | 2023-11-23 15:37:53 | DEFINER       |         | cp850                | cp850_general_ci     | utf8mb4_0900_ai_c  |
| dbms_project | get_total_playlist_duration | FUNCTION | root@localhost | 2023-11-23 15:38:46 | 2023-11-23 15:38:46 | DEFINER       |         | cp850                | cp850_general_ci     | utf8mb4_0900_ai_c  |
+-------------+-----------------------------+----------+----------------+---------------------+---------------------+---------------+---------+----------------------+----------------------+--------------------+
4 rows in set (0.01 sec)
```

Procedures:

```
mysql> show procedure status where Db = 'dbms_project';
+-------------+-------------------------+-----------+----------------+---------------------+---------------------+---------------+---------+----------------------+----------------------+--------------------+
| Db          | Name                    | Type      | Definer        | Modified            | Created             | Security_type | Comment | character_set_client | collation_connection | Database Collation |
+-------------+-------------------------+-----------+----------------+---------------------+---------------------+---------------+---------+----------------------+----------------------+--------------------+
| dbms_project | GetPlaylistDetails      | PROCEDURE | root@localhost | 2023-11-23 15:18:28 | 2023-11-23 15:18:28 | DEFINER       |         | cp850                | cp850_general_ci     | utf8mb4_0900_ai_ci |
| dbms_project | get_user_playlists      | PROCEDURE | root@localhost | 2023-11-23 15:42:27 | 2023-11-23 15:42:27 | DEFINER       |         | cp850                | cp850_general_ci     | utf8mb4_0900_ai_ci |
| dbms_project | increase_play_count     | PROCEDURE | root@localhost | 2023-11-23 15:44:20 | 2023-11-23 15:44:20 | DEFINER       |         | cp850                | cp850_general_ci     | utf8mb4_0900_ai_ci |
| dbms_project | update_artist_nationality | PROCEDURE | root@localhost | 2023-11-23 15:45:24 | 2023-11-23 15:45:24 | DEFINER       |         | cp850                | cp850_general_ci     | utf8mb4_0900_ai_ci |
+-------------+-------------------------+-----------+----------------+---------------------+---------------------+---------------+---------+----------------------+----------------------+--------------------+
4 rows in set (0.00 sec)
```