

Q1: Find id, name, and term of the artist who played the track with title "Silent Night (Album)

Output:

[('ARX2R5A1187FB5B85B', 'Ann Nesby', '90s'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'adult contemporary'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'american'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'black gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'christian'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'contemporary gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'disco'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'disco house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'diva'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'female vocalist'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'georgia'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'industrial'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'pop'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'r&b'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'singer-songwriter'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'smooth soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'soulful house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'southern soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'spiritual'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'united states'), ('ARX2R5A1187FB5B85B', 'Ann Nesby', 'urban'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', '90s'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'adult contemporary'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'american'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'black gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'christian'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'contemporary gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'disco'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'disco house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'diva'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'female vocalist'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'georgia'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'industrial'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'pop'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'r&b'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'singer-songwriter'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'smooth soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'soulful house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'southern soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'spiritual'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'united states'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Al Green', 'urban'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', '90s'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'adult contemporary'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'american'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'black gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'christian'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'contemporary gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'disco'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'disco house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'diva'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'female vocalist'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'georgia'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'industrial'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'pop'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'r&b'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'singer-songwriter'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'smooth soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'soulful house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'southern soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'spiritual'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'united states'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Big Mike', 'urban'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', '90s'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'adult contemporary'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'american'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'black gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'christian'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'contemporary gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'disco'),

('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'disco house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'diva'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'female vocalist'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'georgia'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'industrial'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'pop'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'r&b'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'singer-songwriter'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'smooth soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'soulful house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'southern soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'spiritual'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'united states'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Jamecia Bennett', 'urban'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', '90s'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'adult contemporary'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'american'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'black gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'christian'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'contemporary gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'disco'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'disco house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'diva'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'female vocalist'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'georgia'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'industrial'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'pop'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'r&b'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'singer-songwriter'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'smooth soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'soulful house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'southern soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'spiritual'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'united states'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / James "Big" Jim Wright', 'urban'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', '90s'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'adult contemporary'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'american'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'black gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'christian'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'contemporary gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'disco'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'disco house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'diva'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'female vocalist'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'georgia'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'industrial'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'pop'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'r&b'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'singer-songwriter'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'smooth soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'soulful house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'southern soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'spiritual'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'united states'), ('ARX2R5A1187FB5B85B', 'Ann Nesby / Ricky Dillard / New G', 'urban'), ('ARX2R5A1187FB5B85B', 'Ann Nesby; Shirley Caesar', '90s'), ('ARX2R5A1187FB5B85B', 'Ann Nesby; Shirley Caesar', 'adult contemporary'), ('ARX2R5A1187FB5B85B', 'Ann Nesby; Shirley Caesar', 'american'), ('ARX2R5A1187FB5B85B', 'Ann Nesby; Shirley Caesar', 'black gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby; Shirley Caesar', 'christian'), ('ARX2R5A1187FB5B85B', 'Ann Nesby; Shirley Caesar', 'contemporary gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby; Shirley Caesar', 'disco'),

('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'disco house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'diva'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'female vocalist'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'georgia'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'gospel'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'industrial'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'pop'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'r&b'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'singer-songwriter'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'smooth soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'soulful house'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'southern soul'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'spiritual'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'united states'), ('ARX2R5A1187FB5B85B', 'Ann Nesby;Shirley Caesar', 'urban'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', '00s'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', '90s'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'acoustic'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'alternative'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'alternative dance'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'alternative pop rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'alternative rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'american'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'american trad rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'blues'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'chill-out'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'christian rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'christmas music'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'classic rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'country'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'country rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'disco'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'easy listening'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'electronic'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'emo'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'folk'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'folk rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'funk'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'grunge'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'house'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'indie'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'indie pop'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'indie rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'instrumental'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'male vocalist'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'new wave'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'pop'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'pop rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'post-grunge'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'progressive rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'punk'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'singer-songwriter'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'ska'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'soft rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'soundtrack'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'southern rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'stoner rock'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'trip hop'), ('AREPD8D1187FB3F5BC', 'Sister Hazel', 'video game music')]

Query Explanation:

In this question, I joined three tables together by using LEFT JOIN ON artist_id in each table. Then I applied filter title = "Silent Night (Album)" using WHERE and finally extracted id, name, and term of the artists.

Q2: Select all the unique track titles with the duration strictly less than 3 seconds.

Output:

[('Cantata 147'), ('Bung'), ('A Lonely World'), ('Pamet versus River of Shit'), ('Une lumière qui rassure'), ('Demons at Work'), ('Summer Song (LP Version)'), ('Old Friend'), ('Groovejet (If This Ain't Love)'), ('What Could Be More Beautiful?'), ('Animal'), ('The Fact'), ('Mina Fäders Hall'), ('Las Manos Del Mundo'), ('The Girl Next Door'), ('Ready For Love'), ('Whatcha Got'), ('Disco Rocker'), ('Air Force blue'), ('Biatch Interlude'),

('Zillertaler Hochzeitsmarsch'), ('Sonnerie Jamel Debbouze (Imitation)'), ('Can't Take My Eyes Off Of You'),
 ('This Morning'), ('Two Faced Promises'), ('Bernard Lavilliers [En Public]'), ('Lay This On You'), ('Ultraviolence'),
 ('Toys Room Combat'), ('Little bit further'), ('Danzonete "Rompiendo La Rutina'), ('Toyota'), ('Pida Me la'),
 ('Jägermarsch'), ('Antimovimiento'), ('Get Down'), ('Te Necesito (Directo 2003)'), ('Ghetto Religion'),
 ('Libérée'), ('El Muchacho Alegre (Album Version)'), ('East Side Drop'), ('Blueprint For Destruction of Earth'),
 ('Fanfare für den faulen Trompeter Version A'), ('Cure For The Common Heartache'), ('Make It Work'), ('Carta
 De Amor'), ('You Can't Fix Stupid'), ('Shoreless'), ('Song 1 04-23-1988'), ('Busta Beat'), ('Dark Eyes - Schwarze
 Augen'), ('Naked Hands'), ('Mi nostalgia'), ('Gmari'), ('Algun dia'), ('Touch Me'), ('Round And Round'),
 ('Rabbit_ Skunk'), ('La Pitologa'), ('Un Dia A La Vez'), ('Mal Amor'), ('That'll Do It'), ('I'm Gonna Live Some
 Before I Die'), ('In The Bleak Midwinter'), ('Le creux des rêves'), ('Malinka'), ('Mi Bohio - Original'), ('Little Girl
 of Mine'), ('Clockwise'), ('You Rock My World (In The Style Of "Michael Jackson")'), ('Fuck Wid Swiss'), ('Thelisi
 Rama'), ('Florida (Move Your Feet)'), ('My Babies'), ('My Man_ He's a Lovin' Man (Live Version)'), ('Like They
 Say'), ('Green Lights [Remastered version]'), ('Flickery Vision'), ('Si Me Queres Vendré'), ('The Promise (As
 Made Famous by When in Rome) (ReMixed)'), ('Tanja'), ('Caribbean Clipper'), ('The Freshman 15'),
 ('Speculatious'), ('Hey Remember'), ('Erzähl mir von ihr'), ('If a bwoy box you (Remixed by Lowki)'), ('Hoy
 Quisiera'), ('Make The Grade'), ('Tienen Un Problema'), ('Setting Sun (2003 Digital Remaster) (Feat. Noel
 Gallagher)'), ('You And I (80 Classic Mix)'), ('Auch ich hab' dich gern'), ('All U Got'), ('Writer's Block'), ('One
 Shot [Live From Madison Square Garden]'), ('Love Is Pleasing'), ('Cantate 247'), ('La bonne étoile'),
 ('Cherokee'), ('I Wanna Love You Forever'), ('Mama You've Been On My Mind / A Fraction of Last Thoughts On
 Woody Guthrie'), ('Asi Te Quiero'), ('pb&j'), ('Se Sensation'), ('Senegal to Senatobia'), ('El Mundo Es Mio'),
 ('Fanfare für den faulen Trompeter Version B'), ('Bright Eyes'), ('Mambo n 5'), ('Super Trip 3000'), ('Coloured
 Dreams'), ('Horn Launch'), ('Hair'), ('La Rumba Dels 60'), ('Avalon'), ('Grey Skies'), ('Du bist die Richtige'),
 ('The Letter (Edited)'), ('lupi_ ia!'), ('El aburrido'), ('Above All (Album)'), ('The First Time Ever I Saw Your Face'),
 ('Cuando Pienso En Ti'), ('You Can Hurry Up'), ('Static [Live in Tokyo_ Japan_ February 5_ 2002]'), ('Pig Meat Is
 What I Crave'), ('Hot Stepper'), ('Ignition x's 4'), ('El Padrino'), ('Love Theme'), ('De Repente'), ('Freshness
 Emergency (Album Version)'), ('The Gypsy'), ('Caruba'), ('Binary Shuffle (Intro)'), ('Welcome To The
 Revolutions'), ('Universal Love'), ('Träume sterben'), ('La Danza De Las Sombras'), ('Nostalgia - Original'),
 ('John The Revelator (Boosta Edit)'), ('The Poisoning'), ('Cosimha li'), ('They Who Enter Caves'), ('Una Rosa
 Espanola - Original'), ('The Promise (As Made Famous by When in Rome) (NRG Remix)'), ('Safari (Holden
 Remix)'), ('Blacc Balled'), ('2nd 13'), ('Cachorro nu'), ('Mi Sombrero Sabanero (Version de Radio)'), ('Choral aus
 Kantate 147'), ('What'cha Know About'), ('One Dream (Original Mix)'), ('Friestail'), ('Short Squeaky Cartoon
 Kiss'), ('Holy'), ('I'll Take You There'), ('Keep It Inside'), ('Summer Sun (Bailey's Filter Remix)'), ('Untitled'),
 ('Sixième Étage (Live)'), ('L'homme À La Moto (Live À L'Olympia 1956)'), ('Discolights'), ('Afro-Cuban Lullaby'),
 ('My New Philosophy (From "You're A Good Man_ Charlie Brown")'), ('She Anuh Ready Gal'), ('Discoshit'),
 ('Bright Moments (Excerpt)'), ('Ain't That Peculiar'), ('Thinking Of A Mansion (Intro)'), ('Cavaquinho'), ('ISDN'),
 ('Gimme No Lip (Live)'), ('On And On')

Query Explanation:

In this question, I used DISTINCT function in SELECT statement to get unique track titles and applied WHERE to filter duration that is less than 3s.

Q3: Find the ten longest (by duration) 10 track ids released between 2008 and 2012 (exclusive), ordered by decreasing duration.

Output:

```
[('TRAKWOH12903CAC17F'), ('TRPYBPX128F92FDF95'), ('TRLJLIL12903CD516A'), ('TRCKDAY128F932BFED'), ('TRPOOUQ128F932C026'), ('TRVMPIJ128F933F1B2'), ('TRYFVOC128F934C56F'), ('TRYIBOA128F935835A'), ('TRIXVHI12903CCB809'), ('TRGWXQX128F92EF946')]
```

Query Explanation:

In this question, I mainly used WHERE to filter year and ORDER BY duration DESC to have correct records and order in the table. At the end, using LIMIT 10 helps to get the top 10 records which are the ten longest track ids.

Q4: Find the 15 least frequently used terms, ordered by increasing usage. If two terms have the same frequency, order them lexicographically.

Output:

```
[('00s alternative'), ('15th century'), ('16th century'), ('1910s'), ('19th century classical composer'), ('19th century opera'), ('20th century period'), ('21st century classical composer'), ('60s british rock'), ('60s girl pop'), ('70s hard rock'), ('70s psychedelia'), ('80s dance'), ('80s glam'), ('80s indie pop')]
```

Query Explanation:

In this question, first I calculated the frequency of each term by using COUNT in SELECT statement and then ORDER BY the count number and term in ascending and lexicographical order. Finally, I used LIMIT 15 to select 15 least frequently used terms.

Q5: Find the artist name associated with the shortest track duration.

Output:

The George Benson Quartet

Query Explanation:

In this question, I merged two tables by using artists LEFT JOIN tracks, then ORDER BY duration in ascending order and LIMIT 1 to find the artist with shortest track duration.

Q6: Find the mean duration of all tracks.

Output:

249.71338394213936

Query Explanation:

In this question, I used AVG to calculate mean duration in tracks table.

Q7: Using only one query, find first 10 track ids, in lexicographic order, whose artists strictly have more than 8 linked terms.

Output:

```
[('TRAAAAK128F9318786'), ('TRAAAAV128F421A322'), ('TRAAAAW128F429D538'), ('TRAAAY128F42A73F0'), ('TRAAABD128F429CF47'), ('TRAAACN128F9355673'), ('TRAAACV128F423E09E'), ('TRAAADJ128F4287B47'), ('TRAAADT12903CCC339'), ('TRAAADZ128F9348C2E')]
```

Query Explanation:

In this question, I used tracks LEFT JOIN artists and applied filter term>8 in WHERE statement. Then, use ORDER BY tracks ids in ascending order and LIMIT 10 to get first 10 tracks ids.

Q8: Index: Run Question 1 query in a loop for 100 times and note the minimum time taken. Now create an index on the column artist_id and compare the time. Share your findings in the report.

Output:

Without Index: 1.207766056060791

With Index: 0.06981134414672852

Query Explanation:

In this question, I created index on artist_id for each table because artist id is the key to join three tables together in the query. In this way, the runtime speeds up by 17.25 times.

The reason is that indices help to make it faster to store a mapping from value to rows and easier to find specific rows with the key, so that the query does not have to search each row independently. In this question, the query has lots of join between tables based on the key artist_id, so we can index the artist_id column to speed up the searching when tables are trying to match based on the value of the key. Therefore, now we are doing the index scan instead of table scan when joining tables, which is much faster.

Q9: Find all tracks associated with artists that have the related term europop and delete them from the database, then roll back this query using a transaction. Hint: you can select from the output of a select!

Output:

Number of records before rollback the delete: [(796212,)]

Number of records after rollback the delete: [(866475,)]

Query Explanation:

In this question, to delete the rows, I first built a subquery which selected track ids that have term 'europop' from the joint table of artist_term and tracks. Then, I put the sub table in the FROM statement in main query and delete rows from tracks table where track_id is in the table of subquery.

To use a transaction, I begin transaction before deleting and then rollback transaction after deleting so deleted rows will go back to the table. Number of records before and after rollback is shown above.