

Aggregation and Windows Function Practice

Chinook is a media database that resides on elvis. See

(http://jackmyers.info/db/files/sql_db_creation/chinook/chinook_schema.png) for the physical data model.

For these assignments, we want to exclude any video tracks.

1. Find all artists who perform in multiple genres, and list those genres by producing the table below:

Artist	Genre	Genres
Amy Winehouse	Pop, R&B/Soul	2
Audioslave	Alternative, Alternative & Punk, Rock	3
Eric Clapton	Blues, Latin	2
Faith No More	Alternative & Punk, Rock	2
Foo Fighters	Alternative & Punk, Rock	2
Guns N' Roses	Metal, Rock	2
Iron Maiden	Blues, Heavy Metal, Metal, Rock	4
Jamiroquai	Electronica/Dance, R&B/Soul, Rock	3
Lenny Kravitz	Metal, Reggae, Rock	3
Ozzy Osbourne	Metal, Rock	2
Pearl Jam	Alternative & Punk, Rock	2
R.E.M.	Alternative & Punk, Rock	2
Red Hot Chili Peppers	Alternative & Punk, Rock	2
U2	Pop, Rock	2
Various Artists	Latin, Soundtrack	2

2. Find all 210 tracks of Iron Maiden and order your results by the name of the song. (See the first few rows below.) However, to make the results look this way, you will need to use MySQL functions to:

- Convert milliseconds to a more familiar minutes and seconds format, and trim leading zeroes so that we do not have times like '03:25' but rather '3:25'
- Correct some formatting issues in the song name. Some of the tracks were uploaded from iTunes, and thus have a title such as '01 - Prowler' or '02 - Sanctuary'. These titles can be identified by looking for a space character followed by a hyphen, followed by another space. '01 - Prowler' should be retitled as 'Prowler' and '02 - Sanctuary' should be retitled as 'Sanctuary' If this is done correctly, you should see the song Sanctuary listed four times.

Artist	Album	Song	Genre	Length
Iron Maiden	The X Factor	2 A.M.	Rock	5:37
Iron Maiden	A Real Dead One	2 Minutes To Midnight	Metal	5:37
Iron Maiden	Live At Donington 1992 (Disc 2)	2 Minutes To Midnight	Rock	5:38
Iron Maiden	Powerslave	2 Minutes To Midnight	Metal	5:59
Iron Maiden	Live After Death	2 Minutes To Midnight	Metal	6:06
Iron Maiden	Rock In Rio [CD1]	2 Minutes To Midnight	Metal	6:26
Iron Maiden	Live After Death	22 Acacia Avenue	Heavy Metal	6:19
Iron Maiden	The Number of The Beast	22 Acacia Avenue	Metal	6:35
Iron Maiden	Powerslave	Aces High	Metal	4:29
Iron Maiden	Live After Death	Aces High	Heavy Metal	4:36
Iron Maiden	A Real Live One	Afraid To Shoot Strangers	Metal	6:47
Iron Maiden	Live At Donington 1992 (Disc 1)	Afraid To Shoot Strangers	Rock	6:52
Iron Maiden	Fear Of The Dark	Afraid To Shoot Strangers	Rock	6:56
Iron Maiden	Dance Of Death	Age Of Innocence	Heavy Metal	6:10
Iron Maiden	Somewhere in Time	Alexander the Great	Metal	8:35

3. Add to query 2:

- The average length of all Iron Maiden songs ('Average Length for Iron Maiden')*
- The average length per each Iron Maiden song ('Average Length per Song')*
- Within each song, what is the rank, where ties get the same number, by length ('Rank of Songs by Length') **
- Where does the song rank in Iron Maiden's full collection where every song gets a unique rank ('Rank of Collection by Length') **
- The classification of song by length divided into three buckets – Short Song, Typical Song, Long Song ('Classification')
Use the NTILE function, but translate it into these bucket names.
- How many total songs Iron Maiden has in that particular genre ('Total Songs in Genre')

* Full credit if you use length in the format of the column 'Length' – i.e., minutes:seconds format. Slight reduction if you use decimal format for length (e.g., 5.4 minutes)

** Milliseconds are way too precise for these columns. Just round to the nearest second.

Artist	Album	Song	Length	Average Length Per Song	Average Length for Iron Maiden	Rank of Songs by Length	Rank of Collection by Length	Classification	Genre	Total Songs in Genre
Iron Maiden	The X Factor	2 A.M.	5:37	5:37	5:38	1	120	Typical Song	Rock	81
Iron Maiden	A Real Dead One	2 Minutes To Midnight	5:37	5:57	5:38	1	117	Typical Song	Metal	95
Iron Maiden	Live At Donington 1992 (Disc 2)	2 Minutes To Midnight	5:38	5:57	5:38	2	121	Typical Song	Rock	81
Iron Maiden	Powerslave	2 Minutes To Midnight	5:59	5:57	5:38	3	132	Typical Song	Metal	95
Iron Maiden	Live After Death	2 Minutes To Midnight	6:06	5:57	5:38	4	135	Typical Song	Metal	95
Iron Maiden	Rock In Rio [CD1]	2 Minutes To Midnight	6:26	5:57	5:38	5	148	Long Song	Metal	95
Iron Maiden	Live After Death	22 Acacia Avenue	6:19	6:27	5:38	1	145	Long Song	Heavy Metal	27
Iron Maiden	The Number of The Beast	22 Acacia Avenue	6:35	6:27	5:38	2	151	Long Song	Metal	95
Iron Maiden	Powerslave	Aces High	4:29	4:32	5:38	1	65	Short Song	Metal	95
Iron Maiden	Live After Death	Aces High	4:36	4:32	5:38	2	72	Typical Song	Heavy Metal	27
Iron Maiden	A Real Live One	Afraid To Shoot Strangers	6:47	6:52	5:38	1	154	Long Song	Metal	95
Iron Maiden	Live At Donington 1992 (Disc 1)	Afraid To Shoot Strangers	6:52	6:52	5:38	2	160	Long Song	Rock	81
Iron Maiden	Fear Of The Dark	Afraid To Shoot Strangers	6:56	6:52	5:38	3	161	Long Song	Rock	81
Iron Maiden	Live At Donington 1992 (Disc 1)	Wrathchild	2:54	2:59	5:38	1	5	Short Song	Rock	81
Iron Maiden	Killers	Wrathchild	2:54	2:59	5:38	1	4	Short Song	Heavy Metal	27
Iron Maiden	Live After Death	Wrathchild	3:03	2:59	5:38	3	7	Short Song	Heavy Metal	27
Iron Maiden	Rock In Rio [CD1]	Wrathchild	3:05	2:59	5:38	4	8	Short Song	Metal	95

4. Using query 3 as a starting point, reorder the rows by 'Length' Use the information to describe the three buckets, i.e.,

- Short Song: between _____ and _____.
- Typical Song: between _____ and _____.
- Long Song: between _____ and _____.

5. Order Iron Maiden's songs by Album title, then by Song title alphabetically. When listing the songs, please indicate the previous song on the album and the next song.

Artist	Album	Song	Previous Song	Next Song
Iron Maiden	A Matter of Life and Death	Brighter Than a Thousand Suns	NULL	Different World
Iron Maiden	A Matter of Life and Death	Different World	Brighter Than a Thousand Suns	For the Greater Good of God
Iron Maiden	A Matter of Life and Death	For the Greater Good of God	Different World	Hallowed Be Thy Name (Live) [Non Album Bonus Track]
Iron Maiden	A Matter of Life and Death	Hallowed Be Thy Name (Live) [...]	For the Greater Good of God	Lord of Light
Iron Maiden	A Matter of Life and Death	Lord of Light	Hallowed Be Thy Name (Live) [Non Album Bonus Track]	Out of the Shadows
Iron Maiden	A Matter of Life and Death	Out of the Shadows	Lord of Light	The Legacy
Iron Maiden	A Matter of Life and Death	The Legacy	Out of the Shadows	The Longest Day
Iron Maiden	A Matter of Life and Death	The Longest Day	The Legacy	The Pilgrim
Iron Maiden	A Matter of Life and Death	The Pilgrim	The Longest Day	The Reincarnation of Benjamin Breeg
Iron Maiden	A Matter of Life and Death	The Reincarnation of Benjamin ...	The Pilgrim	These Colours Don't Run
Iron Maiden	A Matter of Life and Death	These Colours Don't Run	The Reincarnation of Benjamin Breeg	NULL
Iron Maiden	A Real Dead One	2 Minutes To Midnight	NULL	Hallowed Be Thy Name
Iron Maiden	A Real Dead One	Hallowed Be Thy Name	2 Minutes To Midnight	Iron Maiden
Iron Maiden	A Real Dead One	Iron Maiden	Hallowed Be Thy Name	Prowler
Iron Maiden	A Real Dead One	Prowler	Iron Maiden	Remember Tomorrow
Iron Maiden	A Real Dead One	Remember Tomorrow	Prowler	Run To The Hillss
Iron Maiden	A Real Dead One	Run To The Hillss	Remember Tomorrow	Running Free
Iron Maiden	A Real Dead One	Running Free	Run To The Hillss	Sanctuary
Iron Maiden	A Real Dead One	Sanctuary	Running Free	The Number Of The Beast
Iron Maiden	A Real Dead One	The Number Of The Beast	Sanctuary	The Trooper
Iron Maiden	A Real Dead One	The Trooper	The Number Of The Beast	Transylvania
Iron Maiden	A Real Dead One	Transylvania	The Trooper	Where Eagles Dare
Iron Maiden	A Real Dead One	Where Eagles Dare	Transylvania	NULL