

Course 'Imperative Programming' (IPC031)

Bonus Assignment 8: Music database and console queries

1. Assignment

Design and implement a console I/O application that allows the user to enter the following commands:

command	description
track_ <i>track</i>	Find every track of which the track title matches <i>track</i> (use function <code>match_tracks</code> with <code>display</code> parameter set to <code>true</code>). At the end, show the number of found tracks.
artist_ <i>artist</i>	Find every artist whose name matches <i>artist</i> (use function <code>match_artists</code> with <code>display</code> parameter set to <code>true</code>). At the end, show the number of found artists.
cds_ <i>artist</i>	Find every CD title of which the artist's name matches <i>artist</i> (use the function <code>match_cds</code> with <code>display</code> parameter set to <code>true</code>). At the end, show the number of found CD titles.
#cds	Display the total number of CDs (use function <code>number_of_cds</code>).
stop	Terminate the program.

The following commands are *optional* to implement:

command	description
cd?_ <i>track</i>	Find every CD that has a track with a title that matches <i>track</i> . Display the artist name, CD title, and year of recording. Each CD title is displayed <i>at most once</i> . At the end, show the number of CDs found.
artist?_ <i>cd</i>	Find the artists that have produced a CD that has a title that matches <i>cd</i> . Display the artist and CD title. At the end, show the number of found matches.
runningtime_ <i>cd</i>	Of each CD that has a title that matches <i>cd</i> , determine the total running time of all tracks of that CD. Display the artist, CD title, and total running time of all tracks of that CD. The total running time must be displayed in <i>mm:ss</i> format. At the end, show the number of found matches.
time	Display the total running time of all tracks in terms of number of <i>weeks</i> , remaining number of <i>days</i> , remaining number of <i>hours</i> , remaining time in <i>mm:ss</i> format.
year_ <i>y</i>	Find all CDs that appeared in year <i>y</i> . For each found CD, display the artist and CD title. At the end, show the number of CDs found.

On Brightspace, the file “IPC031_2018_assignment_8_bonus_files.zip” contains for each of the above queries the required output of an example query. You can use this to test your implementation.

2. Products

As product-to-deliver you only need to upload to Brightspace “*main.cpp*” that you have created with solutions for each part of the assignment.

⇒ **Deadline:** Tuesday, November 13, 8:30h.