**Introduction to Programming EE2310 Homework 9**

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**Problem**

To read in files from a selected directory, process the mp3 files and sort them in selected ways. Then generate a HTML file by the sorting result.

**Solution, Additional Feature, Program Flow & Structure**

**Classes**

* file : Include below data of a file:
  + track(string)
  + performer(string)
  + title(string)
  + duration(string)
  + filetype(string)
  + path(string)

**Functions and flow**

* main(int argc, char \*argv[])
  + Get Folder Path and Directory
  + Save Every File to Vector
    1. Create two empty string vector called FullPathlist and FullNamelist, and a nother empty file vector called FileList.
    2. Push the file name and path of every file in the directory to FullPathlist and FullNamelist separately.
  + Process the File List
    1. Call dataProcess function to separate data in the FileNamelist and save to FileList.
  + Choose And Apply The Sorting Method
    1. Get the user’s choice.
    2. Call sort functions depend on the user’s choice. Apply the secondary then the major key.
  + Output To The File
    1. Call output function to generate the HTML file.
* dataProcess(vector<string>& FullPathlist, vector<string>& FileNamelist, vector<file>& FileList)
  + Create a file called buffer, a string to save the whole file name which is going to be processed, and two sie\_t to save the positions to separate.
  + Get File type
    1. (Position of first “.” from 0) + 1 ~ (Position of the last character) - 1.
  + If the file type is “mp3”
    1. Get and Save Track ID:
* Start: First character but not “-” from 0
* End: (First “-” from the start position) - 1
  + 1. Get and Save Performer:
* Start: First character but not “-” from the last end position
* End: (First “-” from the start position) - 1
  + 1. Get and Save Title:
* Start: First character but not “-” from the last end position
* End: (First “-” from the start position) - 1
  + 1. Get and Save Duration:
* Start: First character but not “-” from the last end position
* End: (First “.” from the start position) - 1
  + 1. Save Path
* Get path from FullPathlist
  + 1. Push above data to FileList.
  + Repeat above two big steps until all the files are processed.
* sortTitle/Performer/Track/Duration (vector<file> &FileList)
  + 1. Use bubble sort to sort the whole FileList by the base data user select.
* output(vector<file>& FileList, int choose1, int choose2)
  + 1. Generate the HTML file and show the result on the process screen.
    2. [Additional Function] The HTML file has been decorated by the Bootstrap css framework.
    3. [Additional Function] The hyperlink on the title will link to the search result on Youtube.
    4. [Additional Function] The table row will have a hover effect when the mouse is on the row.

**Output Result**

Major Key: Performer, Secondary Key: Duration

Song list:

01-Kristen Bell-For The First Time In Forever-0345

02-Idina Menzel-Let It Go-0344

03-Josh Gad-In Summer-0154

04-Christophe Beck-Epilogue of Frozen-0304

05-Alex G-Disney Classics Medley-0455

06-Hans Zimmer-Dumpling Warrior-0330

07-Christophe Beck-Paperman-0501

10-Jesse Eisenberg-Real In Rio-0348

16-One Direction-One Thing-0317

17-Taylor Swift-Sparks Fly-0422

Result on the process screen:

Sort by...

1)Track 2)Title 3)Artist 4)Duration

Enter the major key then secondary key:3 4

05 Disney Classics Medley, by Alex G | 0455

04 Epilogue of Frozen, by Christophe Beck | 0304

07 Paperman, by Christophe Beck | 0501

06 Dumpling Warrior, by Hans Zimmer | 0330

02 Let It Go, by Idina Menzel | 0344

10 Real In Rio, by Jesse Eisenberg | 0348

03 In Summer, by Josh Gad | 0154

01 For The First Time In Forever, by Kristen Bell | 0345

16 One Thing, by One Direction | 0317

17 Sparks Fly, by Taylor Swift | 0422

Press <RETURN> to close this window...

Generated HTML code:

<!DOCTYPE html>

<html>

<head>

<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.1/css/bootstrap.min.css">

<title>Chunyou's Song List</title>

</head>

<body>

<h1 class="text-center">Chunyou's Song List</h1>

<p class="text-center">Sort by Performer > Duration</p>

<div clsee="row">

<div class="col-md-8 col-md-offset-2">

<table class="table table-hover">

<thead>

<td><p>Player</p></td>

<td><p>Track</p></td>

<td><p>Title</p></td>

<td><p>Artist</p></td>

<td><p>Duration</p></td>

</thead>

<tbody>

<tr>

<td><audio controls>

<source src="C:/Qt/ee2310/hw9/music/05-Alex G-Disney Classics Medley-0455.mp3" type="audio/mpeg">

</audio></td>

<td><p>05</p></td>

<td><a href="https://www.youtube.com/results?search\_query=Disney Classics Medley">Disney Classics Medley</td>

<td><p>Alex G</p></td>

<td><p>0455</p></td>

</tr>

(The structure of other rows are very much alike.)

</tbody>

</table>

<p class="text-center text-muted">Click on the Title to search on Youtube!</p>

</div>

</div>

</body>

</html>

Generated HTML file display result:

