

Michael Kearns

Professor Carpenter

ELEC-3150-03

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## Lab 06

This program builds off the previous program written for Lab 5 but puts the doubly linked list into a class. The class contains two private variables and multiple public functions. The private variables are the structs from the previous lab and the List pointer to indicate the beginning of the list. The public functions are all the same from the previous lab. These include adding an entry, deleting an entry, printing the list, searching the list, and deleting the list. The only new public function is to search the list by year and print the entry. This is used in another function to search both lists at the same time by year. A constructor function was also created to instantiate a new list object when it is created. This fills in the information for the first time a winner is added to the list.

Multiple new functions were created to accommodate two lists. The populate function from the previous program was changed to populate based on what list is being created. The main difference is that the new populate function takes parameters to create a list given one of the two text files and the size of the text files.

This program allows the user to access and manipulate information from either the Grammy winner list or Eckert-Mauchly list. The functionality for each list is the same as the previous lab, allowing the user to add, remove, print, search, or delete. It also allows the user to search both lists by year and prints each winner from that year. If a winner is not found, it will print "Not found".

```
kearnsm2@turing:~/00P_Fall$ g++ -g lab6
kearnsm2@turing:~/00P_Fall$ ./a.out
Please enter your choice:
Press 1 for Grammy List
Press 2 for Eckert-Mauchly List
Press 3 to search both lists by year
Press 4 to exit
1
What function would you like?
1 to add new artist
2 to remove artist
3 to print list
4 to search
5 to delete and exit
3
Name: Adele
Number of Wins: 2
Years: 2012 2017
Name: Arcade Fire
Number of Wins: 1
Years: 2011
Name: Beck
Number of Wins: 1
Years: 2015
Name: Bruno Mars
Number of Wins: 1
Years: 2018
Name: Daft Punk
Number of Wins: 1
Years: 2014
Name: Dixie Chicks
Number of Wins: 1
Years: 2007
Name: Herbie Hancock
Number of Wins: 1
Years: 2008
Name: Kacey Musgraves
Number of Wins: 1
Years: 2019
Name: Mumford and Sons
Number of Wins: 1
Years: 2013
Name: Norah Jones
Number of Wins: 1
Years: 2003
Name: OutKast
Number of Wins: 1
Years: 2004
Name: Ray Charles
Number of Wins: 1
Years: 2005
Name: Robert Plant and Alison Kraus
Number of Wins: 1
Years: 2009
```

```
Number of Wins: 1
Years: 2002
Please enter your choice:
Press 1 for Grammy List
Press 2 for Eckert-Mauchly List
Press 3 to search both lists by year
Press 4 to exit
2
What function would you like?
1 to add new artist
2 to remove artist
3 to print list
4 to search
5 to delete and exit
3
Name: Algirdas Avizienis
Number of Wins: 1
Years: 2012
Name: Charles Thacker
Number of Wins: 1
Years: 2017
Name: David Patterson
Number of Wins: 1
Years: 2008
Name: Gurindar Sohi
Number of Wins: 1
Years: 2011
Name: James Pomerene
Number of Wins: 1
Years: 2006
Name: Jim Goodman
Number of Wins: 1
Years: 2013
Name: Joel Emer
Number of Wins: 1
Years: 2009
Name: Mateo Valero
Number of Wins: 1
Years: 2007
Name: Norman Jouppi
Number of Wins: 1
Years: 2015
Name: Susan Eggers
Number of Wins: 1
Years: 2018
Name: Trevor Mudge
Number of Wins: 1
Years: 2014
Name: Uri Weiser
Number of Wins: 1
Years: 2016
Name: William Dally
Number of Wins: 1
Years: 2010
```

```
2
What function would you like?
1 to add new entry
2 to remove entry
3 to print list
4 to search
5 to delete and exit
3
Enter name: Michael Kearns
Enter year: 2020
Please enter your choice:
Press 1 for Grammy List
Press 2 for Eckert-Mauchly List
Press 3 to search both lists by year
Press 4 to exit
3
What function would you like?
1 to add new entry
2 to remove entry
3 to print list
4 to search
5 to delete and exit
3
Name: Algirdas Avizienis
Number of Wins: 1
Years: 2012
Name: Charles Thacker
Number of Wins: 1
Years: 2017
Name: David Patterson
Number of Wins: 1
Years: 2008
Name: Gurindar Sohi
Number of Wins: 1
Years: 2011
Name: James Pomerene
Number of Wins: 1
Years: 2006
Name: Jim Goodman
Number of Wins: 1
Years: 2013
Name: Joel Emer
Number of Wins: 1
Years: 2009
Name: Mateo Valero
Number of Wins: 1
Years: 2007
Name: Michael Kearns
Number of Wins: 1
Years: 2020
Name: Norman Jouppi
Number of Wins: 1
Years: 2015
Name: Susan Eggers
Number of Wins: 1
Years: 2018
Name: Trevor Mudge
Number of Wins: 1
Years: 2014
```