

In this laboratory, you are given 2 classes: Video and VideoLibrary. Video consist of length (in seconds), current time (in seconds), quality, name of the video, author of video, bool mute, bool ads and ad itself. They are contained in private and are set to default. Moreover, it class contains pointer to the Next and Previous videos. Later they will be used in creating linked list.

VideoLibrary contains pointer to head and tail.

Main is provided and covers all possible input. Example output is also provided at the end of this pdf.

This pdf will contain all explanations of functionalities of functions.

You are asked to write functions, constructors and methods according to the task.

Let's begin:

Task 1:

Write 2 different constructors Video() and Video(input).

Video() is used when user does not input anything inside and should assign default value:

Author = NONE

Name = NONE

Video length = 0

Quality = 0

Video(input) is used with user input. Input consists of Author's name, Video name, Length of the video and Video quality. You should implement constructor in such way that it will assign provided input to class.

Moreover, implement friend function for input and output. For this overload operators >> and <<

Task 2:

Write functions related to quality, mute and ads:

1. Set\_mute() - should assign true or false in bool mute
2. Set\_ads() - should assign true or false in bool ads
3. Display\_mute() - should print the mute value
4. Display\_quality() - should print the quality value
5. Display\_ad() - should print the advertisement
6. Display\_current\_time() - should print current time of video
7. Change\_quality(int a) - should change the current quality to the one provided by user
8. Change\_ad(const char\* a) - should change the ad to the one provided by user

Please, make sure that function change quality checks if video exists

Task 3:

Write function bool ifSameAuth(video a, video b) which returns TRUE if Authors of 2 videos are same person or FALSE otherwise.

Write 2 getters which will be used in future: getlength() and getcurrent\_time(), which return length of the video and its current time respectively.

Write void human\_language(int a) function that will print time in adequate form (not in seconds, but in hours, minutes and seconds)

Task 4:

Write function `int seconds_left(video a)` which should return the difference between the video length and current time

Write 4 versions of void skip function (Overload them):

1. `Void skip()` - which adds 5 seconds to the current time of the video
2. `Void skip(int sec)` - which adds sec to the current time of the video
3. `Void skip(int min, int sec)` - which adds min and sec to the current time of the video
4. `Void skip(int hour, int min, int sec)` - which adds hour, min and sec to the current time of the video

Now let's proceed to the linked list functions:

Task 5:

Write method `print_library()` that prints the content of library

Write methods `append(video &a)` and `prepend(video &a)` that adds video to the library to the end and beginning respectively

Task 6:

Write method `remove(video &a)` which removes specific video a from list. Make sure that this method covers all possible inputs

Task 7:

Write methods `remove_first()` and `remove_last()` which removes first and last videos in a list, respectively. Make sure that methods cover all possible cases

Write method `clear_library()` which removes all videos from library. Make sure that methods cover all possible cases

Task 8:

Write method `filter(int a)` which will keep only those videos with specific length.

If a is greater than 0, filter should keep videos with length greater than a and remove others.

If a is less than 0, filter should keep videos with length less than a and remove others.

Example output:

-----TASK 1-----

Enter author, video name, length and quality

James Minecraft 2000 720

Author: James

Name: Minecraft

Quality: 720

00:00:00 ----- 00:33:20

Author: NONE

Name: NONE

Quality: 0

00:00:00 ----- 00:00:00

Author: James

Name: News

Quality: 720

00:00:00 ----- 00:13:20

Author: Janny

Name: CS GO unboxing

Quality: 2080

00:00:00 ----- 00:25:00

-----TASK 2-----

Video is muted

Video is not muted

Video is not muted

Video is not muted

Video is 144p quality

Video is 0p quality

Video is 280p quality

Video is 2080p quality

There is no ads right now

There is no ads right now

Samsung Galaxy S21

There is no ads right now

-----TASK 3-----

Video a and Video c are made by same author

Video a

00:00:00 --- 00:33:20

Video b

00:00:00 --- 00:00:00

Video c

00:00:00 --- 00:13:20

Video d

00:00:00---00:25:00

-----TASK 4-----

00:00:05->00:24:55

00:00:10->00:24:50  
00:00:15->00:24:45  
00:00:20->00:24:40  
00:00:25->00:24:35

00:00:20->00:33:00  
00:00:00->00:00:00  
00:01:35->00:31:45  
00:01:30->00:23:30

-----TASK 5-----

Empty library

Author: Janny  
Name: CS GO unboxing  
Quality: 2080  
00:01:30 ----- 00:25:00

Author: NONE  
Name: NONE  
Quality: 0  
00:00:00 ----- 00:00:00

Author: James  
Name: Minecraft  
Quality: 144  
00:01:35 ----- 00:33:20

Author: James  
Name: News  
Quality: 280  
00:00:00 ----- 00:13:20

-----TASK 6-----

Author: Janny  
Name: CS GO unboxing  
Quality: 2080  
00:01:30 ----- 00:25:00

Author: NONE  
Name: NONE  
Quality: 0  
00:00:00 ----- 00:00:00

Author: James  
Name: News  
Quality: 280  
00:00:00 ----- 00:13:20

Author: James  
Name: Minecraft  
Quality: 144  
00:01:35 ----- 00:33:20

Author: Janny  
Name: CS GO unboxing  
Quality: 2080  
00:01:30 ----- 00:25:00

Author: NONE  
Name: NONE  
Quality: 0  
00:00:00 ----- 00:00:00

Author: James  
Name: News  
Quality: 280  
00:00:00 ----- 00:13:20

-----TASK 7-----

Author: Janny  
Name: CS GO unboxing  
Quality: 2080  
00:01:30 ----- 00:25:00

Author: NONE  
Name: NONE  
Quality: 0  
00:00:00 ----- 00:00:00

Author: James  
Name: News  
Quality: 280  
00:00:00 ----- 00:13:20

Author: Janny  
Name: CS GO unboxing  
Quality: 2080  
00:01:30 ----- 00:25:00

Author: NONE  
Name: NONE  
Quality: 0  
00:00:00 ----- 00:00:00

Empty library

Author: Janny  
Name: CS GO unboxing  
Quality: 2080  
00:01:30 ----- 00:25:00

Author: NONE  
Name: NONE  
Quality: 0  
00:00:00 ----- 00:00:00

Author: James  
Name: News  
Quality: 280  
00:00:00 ----- 00:13:20

Author: James  
Name: Minecraft  
Quality: 144  
00:01:35 ----- 00:33:20

-----TASK 8-----

Author: Janny  
Name: CS GO unboxing  
Quality: 2080  
00:01:30 ----- 00:25:00

Author: James  
Name: News  
Quality: 280  
00:00:00 ----- 00:13:20

Author: James  
Name: Minecraft  
Quality: 144  
00:01:35 ----- 00:33:20