VideoStore

Generated by Doxygen 1.8.17

Chapter 1

Bug List

File main.cpp

No known bugs

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 3

File Index

3.1 File List

Here is a list of all documented files with brief descriptions:

Chapter 4

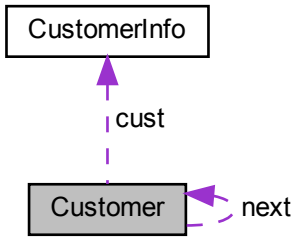
Class Documentation

4.1 Customer Struct Reference

Represents a node in the linked last for customerInfo. Contains the data of the customer and holds the pointer to the next node in the list.

`#include <customerList.h>`

Collaboration diagram for Customer:



Public Member Functions

- Customer ()

  Construct a new Customer node.
- Customer (CustomerInfo &customr)

  parameterized constructor for Customer object.

Public Attributes

- Customer * next
- CustomerInfo cust

4.1.1 Detailed Description

Represents a node in the linked last for customerInfo. Contains the data of the customer and holds the pointer to the next node in the list.

4.1.2 Constructor & Destructor Documentation

4.1.2.1 Customer() [1/2]

```
Customer::Customer ( )  [inline]
```

Construct a new Customer node.

4.1.2.2 Customer() [2/2]

```
Customer::Customer (
            CustomerInfo & customr )  [inline]
```

parameterized constructor for Customer object.

Parameters

customr	

4.1.3 Member Data Documentation

4.1.3.1 cust

```
CustomerInfo Customer::cust
```

Holds the data of the customer.

4.1.3.2 next

```
Customer* Customer::next
```

Points to the next node in the linked list.

The documentation for this struct was generated from the following file:

- include/customerList.h

4.2 CustomerInfo Class Reference

Represents a customer of the store object. Stores basic information about the customer such as their name. Assigns them a random but unique ID.

`#include <CustomerInfo.h>`

Public Member Functions

- CustomerInfo ()

  Construct a new CustomerInfo object.
- int getNumberOfRented ()

  Get the Number Of Rented movies.
- void setNumberOfRented (int x)

  Set the Number Of Rented movies. Increments or decrements the number of rented movies based on param x. If x==1 increments, else decrements.
- string getFName ()

  Returns first name of customer.
- void setFName (string fName)

  Sets first name of the customer.
- string getLName ()

  Returns last name of the customer.
- void setLName (string lName)

  Sets last name of the customer.
- int getID ()

  Returns ID Of the customer.
- void setID (int ID)

  Sets ID of the customer.
- STATUS getAccStatus ()

  Get the Acc Status of customer.
- void setAccStatus (STATUS accStatus)

  Set the Acc Status of customer.
- videoList & getRentedList ()

  Get the List of the rented movies.
- void displayInfo ()

  Displays the information of the customer.

4.2.1 Detailed Description

Represents a customer of the store object. Stores basic information about the customer such as their name. Assigns them a random but unique ID.

4.2.2 Constructor & Destructor Documentation

4.2.2.1 CustomerInfo()

```
CustomerInfo::CustomerInfo ( )
```

Construct a new CustomerInfo object.

4.2.3 Member Function Documentation

4.2.3.1 displayInfo()

```
void CustomerInfo::displayInfo ( )
```

Displays the information of the customer.

4.2.3.2 getAccStatus()

```
STATUS CustomerInfo::getAccStatus ( )
```

Get the Acc Status of customer.

Returns

STATUS

4.2.3.3 getFName()

```
string CustomerInfo::getFName ( )
```

Returns first name of customer.

Returns

string

4.2.3.4 getID()

```
int CustomerInfo::getID ( )
```

Returns ID Of the customer.

Returns

int

4.2.3.5 getLName()

```
string CustomerInfo::getLName ( )
```

Returns last name of the customer.

Returns

string

4.2.3.6 getNumberOfRented()

```
int CustomerInfo::getNumberOfRented ( )
```

Get the Number Of Rented movies.

Returns

int

4.2.3.7 getRentedList()

```
videoList & CustomerInfo::getRentedList ( )
```

Get the List of the rented movies.

Returns

videoList&

4.2.3.8 setAccStatus()

```
void CustomerInfo::setAccStatus (
            STATUS accStatus )
```

Set the Acc Status of customer.

Parameters

accStatus	

4.2.3.9 setFName()

```
void CustomerInfo::setFName (
            string fName )
```

Sets first name of the customer.

Parameters

fName	

4.2.3.10 setID()

```
void CustomerInfo::setID (
            int ID )
```

Sets ID of the customer.

Parameters

ID	

4.2.3.11 setLName()

```
void CustomerInfo::setLName (
            string lName )
```

Sets last name of the customer.

Parameters

lName	

4.2.3.12 setNumberOfRented()

```
void CustomerInfo::setNumberOfRented (
            int x )
```

Set the Number Of Rented movies. Increments or decrements the number of rented movies based on param x. If x==1 increments, else decrements.

Parameters

x	

The documentation for this class was generated from the following files:

- include/CustomerInfo.h
- src/CustomerInfo.cpp

4.3 customerList Class Reference

Maintains a linked list for customerInfo objects.Used later in videoStore to store the list of customers of the shop.

`#include <customerList.h>`

Public Member Functions

- customerList ()

  Construct a new customerList object. Both head and tail initialized to null to represent an empty list.
- Customer * getHead ()

  Get the Head of the list. Useful for methods outside the customerList class that need to access and traverse the customerList linked list.
- void addCustomer (Customer *node)

  Adds a Customer node to the list. That is, a new customer is added to the list via the method.
- int searchCustomer (int ID)

  Searches for a particular customer in the list, and returns the index, at which they are present in the list. Returns -1 otherwise indicating that the customer is not present in the list.
- void displaylist ()

  Displays the list of the customers with their info such as name and ID.
- CustomerInfo & operator[ ] (int ind)

  Overloads [] operator to access any CustomerInfo object from the list via array indexing notation. Easier to use, and gets usede extensively inside the videoStore methods. Function is guaranteed to return an object always (since it is preceeded by a call to check if the object is in the list), therefore a reference is being used plus I was lazy.

4.3.1 Detailed Description

Maintains a linked list for customerInfo objects.Used later in videoStore to store the list of customers of the shop.

4.3.2 Constructor & Destructor Documentation

4.3.2.1 customerList()

```
customerList::customerList ( )
```

Construct a new customerList object. Both head and tail initialized to null to represent an empty list.

4.3.3 Member Function Documentation

4.3.3.1 addCustomer()

```
void customerList::addCustomer (
            Customer * node )
```

Adds a Customer node to the list. That is, a new customer is added to the list via the method.

Parameters

node	new Customer node to add to the list.

4.3.3.2 displaylist()

```
void customerList::displaylist ( )
```

Displays the list of the customers with their info such as name and ID.

4.3.3.3 getHead()

```
Customer * customerList::getHead ( )
```

Get the Head of the list. Useful for methods outside the customerList class that need to access and traverse the customerList linked list.

Returns

Customer*

4.3.3.4 operator[]()

```
CustomerInfo & customerList::operator[] (
            int ind )
```

Overloads [] operator to access any CustomerInfo object from the list via array indexing notation. Easier to use, and gets usede extensively inside the videoStore methods. Function is guaranteed to return an object always (since it is preceeded by a call to check if the object is in the list), therefore a reference is being used plus I was lazy.

Parameters

ind	Index of the Customer object in the list whose CustomerInfo object is required.

Returns

CustomerInfo&

4.3.3.5 searchCustomer()

```
int customerList::searchCustomer (
            int ID )
```

Searches for a particular customer in the list, and returns the index, at which they are present in the list. Returns -1 otherwise indicating that the customer is not present in the list.

Parameters

ID	ID of the customer that we are looking for in the list.

Returns

int

The documentation for this class was generated from the following files:

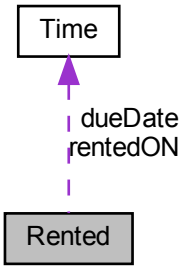
- include/customerList.h
- src/customerList.cpp

4.4 Rented Struct Reference

A struct to hold info about when and who rented a particular movie. An array of Rented is used inside VideoInfo to keep track of which copies of a particular movie have been rented out.

```
#include <VideoInfo.h>
```

Collaboration diagram for Rented:



Public Member Functions

- Rented ()

  Construct a new empty Rented object. A null customerID indicates the copy is not rented since all IDs are greater than 1.

Public Attributes

- Time rentedON
- Time dueDate
- int customerID

4.4.1 Detailed Description

A struct to hold info about when and who rented a particular movie. An array of Rented is used inside VideoInfo to keep track of which copies of a particular movie have been rented out.

4.4.2 Constructor & Destructor Documentation

4.4.2.1 Rented()

```
Rented::Rented ( )  [inline]
```

Construct a new empty Rented object. A null customerID indicates the copy is not rented since all IDs are greater than 1.

4.4.3 Member Data Documentation

4.4.3.1 customerID

```
int Rented::customerID
```

ID of the customer who rented out the copy.

4.4.3.2 dueDate

```
Time Rented::dueDate
```

The time at which the movie is due. It is one week away from the time at which it was rented on.

4.4.3.3 rentedON

```
Time Rented::rentedON
```

The time at which the movie was rented.

The documentation for this struct was generated from the following file:

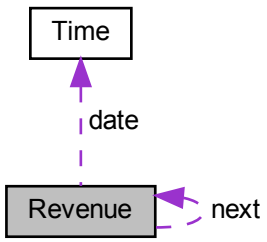
- include/VideoInfo.h

4.5 Revenue Struct Reference

Holds the revenue generated on a particular day/Time. The timestamps are represented by the Time object and the amount generated is stored as well. Also represents a node in the linked list that holds Revenue objects.

```
#include <videoStore.h>
```

Collaboration diagram for Revenue:



Public Member Functions

- Revenue ()

  Construct a new empty Revenue object.
- Revenue (Time tdate, int amnt)

  Parameterized constructor for Revenue object.

Public Attributes

- Time **date**
- int **amount**
- Revenue * next

4.5.1 Detailed Description

Holds the revenue generated on a particular day/Time. The timestamps are represented by the Time object and the amount generated is stored as well. Also represents a node in the linked list that holds Revenue objects.

4.5.2 Constructor & Destructor Documentation

4.5.2.1 Revenue() [1/2]

```
Revenue::Revenue ( )  [inline]
```

Construct a new empty Revenue object.

4.5.2.2 Revenue() [2/2]

```
Revenue::Revenue (
            Time tdate,
            int amnt )  [inline]
```

Parameterized constructor for Revenue object.

Parameters

tdate	Time object to hold the timestamp.
amnt	Amount generated at that time.

4.5.3 Member Data Documentation

4.5.3.1 next

```
Revenue* Revenue::next
```

Points to the next Revenue object in the linked list. The linked list will be implemented and used inside videoStore.

The documentation for this struct was generated from the following file:

- include/videoStore.h

4.6 Time Struct Reference

A struct to deal with time.

```
#include <Time.h>
```

Public Member Functions

- Time ()

  Construct a new Time object.
- Time (int t)

  Construct a new Time object.
- Time (short year, short month, short day, short hour=0, short minute=0, short second=0)

  Construct a new Time object.
- void printDate ()

  Prints only the date and not the time of the this Time object. Useful later, when only the date is required without the time. See videoStore method videoStore::getRevenueGenerated()
- void print ()

  Prints the date and time in the standard UTC format. ctime() adds a '\n' character which is being removed using std::string::erase(), since we don't want an endline, as time needs to be printed inline at certain occasions.
- bool checkDate (const Time &test)

  Checks whether the two dates are equal. Compares date of this object with the date of the param "test" and returns a bool accordingly.
- Time getNextWeek ()

  Get the time which is exactly 7 days from this object's time.
- int getDaysTill (const Time &t)

  Get how many days between this object and the passed param "t" time. Useful in calculating how many days overdue is the movie and thus is used to calculate fine.
- void operator= (const Time &t)

  Assignment operator for Time objects. Copies the total number of seconds from Time object parameter to this object.
- bool operator< (const Time &t)

  Comparison "<" operator for time objects. Useful later in checking whether a given time is ahead of the time being compared or before it.
- bool operator> (const Time &t)

  Comparison ">" operator for time objects. Useful later in checking whether a given time is ahead of the time being compared or before it.
- bool operator<= (const Time &t)

  Comparison "<=" operator for time objects. Useful later in checking whether a given time is ahead of the time being compared or before it.
- bool operator>= (const Time &t)

  Comparison ">=" operator for time objects. Useful later in checking whether a given time is ahead of the time being compared or before it.

Public Attributes

- time_t tsecs

4.6.1 Detailed Description

A struct to deal with time.

The struct contains a time_t variable which is the primary member variable. All calculations are performed on it to get the time displayed in standard format. Overloaded operators are defined as well to handle comparisons of times.

4.6.2 Constructor & Destructor Documentation

4.6.2.1 Time() [1/3]

```
Time::Time ( )
```

Construct a new Time object.

Initializes time_t to zero.

4.6.2.2 Time() [2/3]

```
Time::Time (
            int t )
```

Construct a new Time object.

Sets the time object to a specific time.

Parameters

t	number of seconds since 1970

4.6.2.3 Time() [3/3]

```
Time::Time (
            short year,
            short month,
            short day,
            short hour = 0,
```

```
            short minute = 0,
            short second = 0 )
```

Construct a new Time object.

Sets the time specified by proper date and time format.

Parameters

year	Year
month	Month
day	Day
hour	Hour
minute	Minute
second	Second

4.6.3 Member Function Documentation

4.6.3.1 checkDate()

```
bool Time::checkDate (
            const Time & test )
```

Checks whether the two dates are equal. Compares date of this object with the date of the param "test" and returns a bool accordingly.

Parameters

test	Time object Date to test if its equal to the current date.

Returns

bool

4.6.3.2 getDaysTill()

```
int Time::getDaysTill (
            const Time & t )
```

Get how many days between this object and the passed param "t" time. Useful in calculating how many days overdue is the movie and thus is used to calculate fine.

Parameters

t	Time object till which we need to find the total number of days.

Returns

int

4.6.3.3 getNextWeek()

```
Time Time::getNextWeek ( )
```

Get the time which is exactly 7 days from this object's time.

Returns

Time

4.6.3.4 operator<()

```
bool Time::operator< (
            const Time & t )
```

Comparison "<" operator for time objects. Useful later in checking whether a given time is ahead of the time being compared or before it.

Parameters

t	

Returns

true

false

4.6.3.5 operator<=()

```
bool Time::operator<= (
            const Time & t )
```

Comparison "<=" operator for time objects. Useful later in checking whether a given time is ahead of the time being compared or before it.

Parameters

t	

Returns

true

false

4.6.3.6 operator=()

```
void Time::operator= (
            const Time & t )
```

Assignment operator for Time objects. Copies the total number of seconds from Time object parameter to this object.

Parameters

t	

4.6.3.7 operator>()

```
bool Time::operator> (
            const Time & t )
```

Comparison ">" operator for time objects. Useful later in checking whether a given time is ahead of the time being compared or before it.

Parameters

t	

Returns

true

false

4.6.3.8 operator>=()

```
bool Time::operator>= (
            const Time & t )
```

Comparison ">=" operator for time objects. Useful later in checking whether a given time is ahead of the time being compared or before it.

Parameters

t	

Returns

true

false

4.6.3.9 print()

```
void Time::print ( )
```

Prints the date and time in the standard UTC format. ctime() adds a '\n' character which is being removed using std::string::erase(), since we don't want an endline, as time needs to be printed inline at certain occasions.

4.6.3.10 printDate()

```
void Time::printDate ( )
```

Prints only the date and not the time of the this Time object. Useful later, when only the date is required without the time. See videoStore method videoStore::getRevenueGenerated()

4.6.4 Member Data Documentation

4.6.4.1 tsecs

```
time_t Time::tsecs
```

Primary variable for the struct, which stores the time in the form of total number of seconds that have passed since 1970 till the time that is being stored.

The documentation for this struct was generated from the following files:

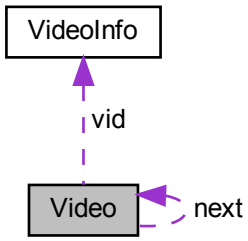
- include/Time.h
- src/Time.cpp

4.7 Video Struct Reference

Represents a node for the linked list that will store VideoInfo objects. Used to construct a linked list of VideoInfo objects.

`#include <videoList.h>`

Collaboration diagram for Video:



Public Member Functions

- Video ()

  Construct a new Video object. The next pointer is set to NULL since it is not pointing to anything initially.
- Video (VideoInfo &mov)

  Parameterized constructor for Video object.

Public Attributes

- VideoInfo vid
- Video * next

4.7.1 Detailed Description

Represents a node for the linked list that will store VideoInfo objects. Used to construct a linked list of VideoInfo objects.

4.7.2 Constructor & Destructor Documentation

4.7.2.1 Video() [1/2]

```
Video::Video ( )  [inline]
```

Construct a new Video object. The next pointer is set to NULL since it is not pointing to anything initially.

4.7.2.2 Video() [2/2]

```
Video::Video (
            VideoInfo & mov )  [inline]
```

Parameterized constructor for Video object.

Parameters

mov	

4.7.3 Member Data Documentation

4.7.3.1 next

```
Video* Video::next
```

Points to the next node in the linked list.

4.7.3.2 vid

```
VideoInfo Video::vid
```

Stores the data of the node.

The documentation for this struct was generated from the following file:

- include/videoList.h

4.8 VideoInfo Class Reference

Represents a movie present in the store.

```
#include <VideoInfo.h>
```

Public Member Functions

- VideoInfo ()

  Construct a new empty VideoInfo object.
- VideoInfo (string vt, string pt, string md, int tc)

  Parameterized constructor for VideoInfo object.
- vector< Rented > & getRentedCopies ()

  Get the rentedCopies vector.
- string getVideoTitle ()

  Get the Video Title.
- void setVideoTitle (string VideoTitle)

  Set the VideoTitle of the movie.
- string getProtagonist ()

  Get the Protagonist actor name of the movie.
- void setProtagonist (string protagonist)

  Set the Protagonist actor name.
- string getMovieDirector ()

  Get the Movie Director name.
- void setMovieDirector (string movieDirector)

  Set the Movie Director name.
- int getTotalCopies ()

  Get the Total Copies available of movie.
- void setTotalCopies (int totalCopies)

  Set the Total Copies of the movie.
- int getAvailableCopies ()

  Get the Available Copies of the movie.
- void setAvailableCopies (int copies)

  Set the Available Copies of the movie.
- void displayDetails ()

  Display details of the movie to the console.
- void numberOfCopies ()

  Displays the available and total number of copies of movie to the console.
- void operator= (const VideoInfo &vi)

  Assignment operator for VideoInfo object. Copies all the member variables of VideoInfo object vi to this object.

4.8.1 Detailed Description

Represents a movie present in the store.

Stores necessary information about the movie itself, such as the title, director name etc. and also stores the information about the total number of copies and available number of copies.

4.8.2 Constructor & Destructor Documentation

4.8.2.1 VideoInfo() [1/2]

```
VideoInfo::VideoInfo ( )
```

Construct a new empty VideoInfo object.

4.8.2.2 VideoInfo() [2/2]

```
VideoInfo::VideoInfo (
            string vt,
            string pt,
            string md,
            int tc )
```

Parameterized constructor for VideoInfo object.

Parameters

vt	Video title
pt	Protagonist name
md	Movie director name
tc	Total copies of the movie

4.8.3 Member Function Documentation

4.8.3.1 displayDetails()

```
void VideoInfo::displayDetails ( )
```

Display details of the movie to the console.

4.8.3.2 getAvailableCopies()

```
int VideoInfo::getAvailableCopies ( )
```

Get the Available Copies of the movie.

Returns

int

4.8.3.3 getMovieDirector()

```
string VideoInfo::getMovieDirector ( )
```

Get the Movie Director name.

Returns

string

4.8.3.4 getProtagonist()

```
string VideoInfo::getProtagonist ( )
```

Get the Protagonist actor name of the movie.

Returns

string

4.8.3.5 getRentedCopies()

```
vector< Rented > & VideoInfo::getRentedCopies ( )
```

Get the rentedCopies vector.

Returns

vector<Rented>&

4.8.3.6 getTotalCopies()

```
int VideoInfo::getTotalCopies ( )
```

Get the Total Copies available of movie.

Returns

int

4.8.3.7 getVideoTitle()

```
string VideoInfo::getVideoTitle ( )
```

Get the Video Title.

Returns

string

4.8.3.8 numberOfCopies()

```
void VideoInfo::numberOfCopies ( )
```

Displays the available and total number of copies of movie to the console.

4.8.3.9 operator=()

```
void VideoInfo::operator= (
            const VideoInfo & vi )
```

Assignment operator for VideoInfo object. Copies all the member variables of VideoInfo object vi to this object.

Parameters

vi	VideoInfo object to be copied

4.8.3.10 setAvailableCopies()

```
void VideoInfo::setAvailableCopies (
            int copies )
```

Set the Available Copies of the movie.

Parameters

copies	

4.8.3.11 setMovieDirector()

```
void VideoInfo::setMovieDirector (
            string movieDirector )
```

Set the Movie Director name.

Parameters

movieDirector	

4.8.3.12 setProtagonist()

```
void VideoInfo::setProtagonist (
            string protagonist )
```

Set the Protagonist actor name.

Parameters

protagonist	

4.8.3.13 setTotalCopies()

```
void VideoInfo::setTotalCopies (
            int totalCopies )
```

Set the Total Copies of the movie.

Parameters

totalCopies	

4.8.3.14 setVideoTitle()

```
void VideoInfo::setVideoTitle (
            string VideoTitle )
```

Set the VideoTitle of the movie.

Parameters

VideoTitle	

The documentation for this class was generated from the following files:

- include/VideoInfo.h
- src/VideoInfo.cpp

4.9 videoList Class Reference

Maintains the linked list where each node is a Video object. A list to hold all the movies. This is done via linked list data structure of VideoInfo objects. Implements necessary relevant methods as well.

`#include <videoList.h>`

Public Member Functions

- videoList ()

  Construct a new empty videoList object. The head is set to NULL implying there is no object in the list.
- Video * getHead ()

  Get the head node of the list. Useful to access the list outside of the videoList class. Access only given to head and the list can be traversed through once head is known.
- void addVideo (Video *node)

  Add a movie/Video node to the linked list.
- int searchVideo (string title)

  Search for a specific title in the list and return its index. Since there's only one movie stored with a particular title, the index, i.e. at what point in the list is the relevant node stored should be unique and is returned.
- void removeVideo (string videotitle)

  Remove a particular movie from the list using its title. Traverses through the list to find that particular node and removes that.
- VideoInfo & operator[ ] (int ind)

  Returns the videoInfo reference from the list. Overloading operator[] to use it just like the arrays, i.e. accessing a particular element from list using its index. Useful later in the videoStore to easily access the list elements instead of traversing through it again and again using while loop syntax. Function is guaranteed to return an object always (since it is preceeded by a call to check if the object is in the list), therefore a reference is being used plus I was lazy.
- void printMovies (bool titlesOnly)

  Prints all the movies in the list. The param titlesOnly controls whether all the details are displayed or just the titles of the movies.
- void printCheckedInMovies ()

  Prints all the movies that have been checked in, i.e. all the movies in the store whose availableCopies is more than 1. One of the core functionalities of the videoStore.
- void printCheckedOut ()

  Prints all the movies that have been checked out. That is, all those movies whose availableCopies is less than the total number of copies at the store.
- void searchParticular (string inpt, char param)

  Searches the list for the movies from a particular director or actor. The parameter param controls whether to look for movies from a particular actor or a particular director.

4.9.1 Detailed Description

Maintains the linked list where each node is a Video object. A list to hold all the movies. This is done via linked list data structure of VideoInfo objects. Implements necessary relevant methods as well.

4.9.2 Constructor & Destructor Documentation

4.9.2.1 videoList()

```
videoList::videoList ( )
```

Construct a new empty videoList object. The head is set to NULL implying there is no object in the list.

4.9.3 Member Function Documentation

4.9.3.1 addVideo()

```
void videoList::addVideo (
            Video * node )
```

Add a movie/Video node to the linked list.

Parameters

node	

4.9.3.2 getHead()

```
Video * videoList::getHead ( )
```

Get the head node of the list. Useful to access the list outside of the videoList class. Access only given to head and the list can be traversed through once head is known.

Returns

Video*

4.9.3.3 operator[]()

```
VideoInfo & videoList::operator[] (
            int ind )
```

Returns the videoInfo reference from the list. Overloading operator[] to use it just like the arrays, i.e. accessing a particular element from list using its index. Useful later in the videoStore to easily access the list elements instead of traversing through it again and again using while loop syntax. Function is guaranteed to return an object always (since it is preceeded by a call to check if the object is in the list), therefore a reference is being used plus I was lazy.

Parameters

ind	Index of the object required in the list.

Returns

VideoInfo&

4.9.3.4 printCheckedInMovies()

```
void videoList::printCheckedInMovies ( )
```

Prints all the movies that have been checked in, i.e. all the movies in the store whose availableCopies is more than 1. One of the core functionalities of the videoStore.

4.9.3.5 printCheckedOut()

```
void videoList::printCheckedOut ( )
```

Prints all the movies that have been checked out. That is, all those movies whose availableCopies is less than the total number of copies at the store.

4.9.3.6 printMovies()

```
void videoList::printMovies (
            bool titlesOnly )
```

Prints all the movies in the list. The param titlesOnly controls whether all the details are displayed or just the titles of the movies.

Parameters

titlesOnly	Set to true if only the titles of the movies are required, otherwise false.

4.9.3.7 removeVideo()

```
void videoList::removeVideo (
            string videotitle )
```

Remove a particular movie from the list using its title. Traverses through the list to find that particular node and removes that.

Parameters

videotitle	

4.9.3.8 searchParticular()

```
void videoList::searchParticular (
            string inpt,
            char param )
```

Searches the list for the movies from a particular director or actor. The parameter param controls whether to look for movies from a particular actor or a particular director.

Parameters

inpt	Stores the director or the protagonist name depending upon the param.
param	'P' for protagonist and 'D' to look for directors.

4.9.3.9 searchVideo()

```
int videoList::searchVideo (
            string title )
```

Search for a specific title in the list and return its index. Since there's only one movie stored with a particular title, the index, i.e. at what point in the list is the relevant node stored should be unique and is returned.

Parameters

title	Title of the movie that is being searched.

Returns

int Index of the movie in the list.

The documentation for this class was generated from the following files:

- include/videoList.h
- src/videoList.cpp

4.10 videoStore Class Reference

Main class that represents our video store. Holds the methods to implement the core functionality of the store.

`#include <videoStore.h>`

Public Member Functions

- videoStore ()

  Construct a new empty videoStore object.
- customerList & getCustList ()

  Returns the list of the customers.
- videoList & getVidList ()

  Returns the list of the movies at the store.
- Time getCurrentTime ()

  Returns the current time at the store.
- void addRevenue (Revenue *node)

  Adds a Revenue node to the list of the revenues.
- void updateTime ()

  Updates the time at a particular rate to create a simulation. Used later in the main loop to keep updating the time with every iteration of the loop.
- void addMovie ()

  Adds a new movie to the store. Takes in input from user, checks if the database already have the movie to maintain a unique database with no repetitions. Adds a movie if it doesn't exist before.
- void addCustomers ()

  Adds a new customer to the store database of customers. A new CustomerInfo object is added to the list of customers held by videoStore. Each customer is assigned a new randomly generated but unique ID.
- void showDetails (string title)

  Shows the details of a particular movie, searches via the title of the movie.
- bool checkAvailability (string inptitle)

  Checks whether a particular movie, searched via the title is available at the store or not. The database is searched for the movie, and if not found, returns false. If the movie is available at the store, but all the copies are rented out, displays the details of all checked out copies and returns false, otherwise returns true.
- void rentToCustomer (int id, string title)

  Rents a particular movie to a particular customer. Checks if a movie is available for renting out by searching the database, if it is, checks if the user's account is overdue, if it isn't rents the user the movie, via their ID. Updates all the relevant information in the database as well such as checked in and out times, and who and when rented it and the revenue generated by it.
- void returnMovie (int id, string title)

  Checks in the movie that the user returns, ID and title of movie are checked in database, and when the movie is returned, fine is calculated if any and the availablecopies of the movie is updated. Other relevant variables are also updated.
- int getOutStandingAmount ()

  Get the Total outstanding amount by the current time. Goes through the list of all the movies at the store, then for each movie searches if any of its copy is overdue, if it is, calculates the fine for that and adds that to total amount. Returns the amount then.
- void getRevenueGenerated ()

  Calculate and print the total revenue generated within a given time frame given by user. Core functionality of the videoStore.
- void deleteCasette (string title)

  Deletes a movie casette from the store. Removes a movie completely from the store's movie list if there is no copy anymore in the store.

4.10.1 Detailed Description

Main class that represents our video store. Holds the methods to implement the core functionality of the store.

4.10.2 Constructor & Destructor Documentation

4.10.2.1 videoStore()

```
videoStore::videoStore ( )
```

Construct a new empty videoStore object.

4.10.3 Member Function Documentation

4.10.3.1 addCustomers()

```
void videoStore::addCustomers ( )
```

Adds a new customer to the store database of customers. A new CustomerInfo object is added to the list of customers held by videoStore. Each customer is assigned a new randomly generated but unique ID.

4.10.3.2 addMovie()

```
void videoStore::addMovie ( )
```

Adds a new movie to the store. Takes in input from user, checks if the database already have the movie to maintain a unique database with no repetitions. Adds a movie if it doesn't exist before.

4.10.3.3 addRevenue()

```
void videoStore::addRevenue (
            Revenue * node )
```

Adds a Revenue node to the list of the revenues.

Parameters

node	A revenue node to add to the list.

4.10.3.4 checkAvailability()

```
bool videoStore::checkAvailability (
            string inptitle )
```

Checks whether a particular movie, searched via the title is available at the store or not. The database is searched for the movie, and if not found, returns false. If the movie is available at the store, but all the copies are rented out, displays the details of all checked out copies and returns false, otherwise returns true.

Parameters

inptitle	Title of the movie to look for.

Returns

bool

4.10.3.5 deleteCasette()

```
void videoStore::deleteCasette (
            string title )
```

Deletes a movie casette from the store. Removes a movie completely from the store's movie list if there is no copy anymore in the store.

Parameters

title	Title of movie to delete the casette of.

4.10.3.6 getCurrentTime()

```
Time videoStore::getCurrentTime ( )
```

Returns the current time at the store.

Returns

Time

4.10.3.7 getCustList()

```
customerList & videoStore::getCustList ( )
```

Returns the list of the customers.

Returns

customerList&

4.10.3.8 getOutStandingAmount()

```
int videoStore::getOutStandingAmount ( )
```

Get the Total outstanding amount by the current time. Goes through the list of all the movies at the store, then for each movie searches if any of its copy is overdue, if it is, calculates the fine for that and adds that to total amount. Returns the amount then.

Returns

int

4.10.3.9 getRevenueGenerated()

```
void videoStore::getRevenueGenerated ( )
```

Calculate and print the total revenue generated within a given time frame given by user. Core functionality of the videoStore.

4.10.3.10 getVidList()

```
videoList & videoStore::getVidList ( )
```

Returns the list of the movies at the store.

Returns

videoList&

4.10.3.11 rentToCustomer()

```
void videoStore::rentToCustomer (
            int id,
            string title )
```

Rents a particular movie to a particular customer. Checks if a movie is available for renting out by searching the database, if it is, checks if the user's account is overdue, if it isn't rents the user the movie, via their ID. Updates all the relevant information in the database as well such as checked in and out times, and who and when rented it and the revenue generated by it.

Parameters

id	ID of the user who wants to rent the movie.
title	Title of the movie being requested.

4.10.3.12 returnMovie()

```
void videoStore::returnMovie (
            int id,
            string title )
```

Checks in the movie that the user returns, ID and title of movie are checked in database, and when the movie is returned, fine is calculated if any and the availablecopies of the movie is updated. Other relevant variables are also updated.

Parameters

id	ID of the user who wants to return the movie.
title	title of the movie being returned.

4.10.3.13 showDetails()

```
void videoStore::showDetails (
            string title )
```

Shows the details of a particular movie, searches via the title of the movie.

Parameters

title	title of movie to display the details.

4.10.3.14 updateTime()

```
void videoStore::updateTime ( )
```

Updates the time at a particular rate to create a simulation. Used later in the main loop to keep updating the time with every iteration of the loop.

The documentation for this class was generated from the following files:

- include/videoStore.h
- src/videoStore.cpp

Chapter 5

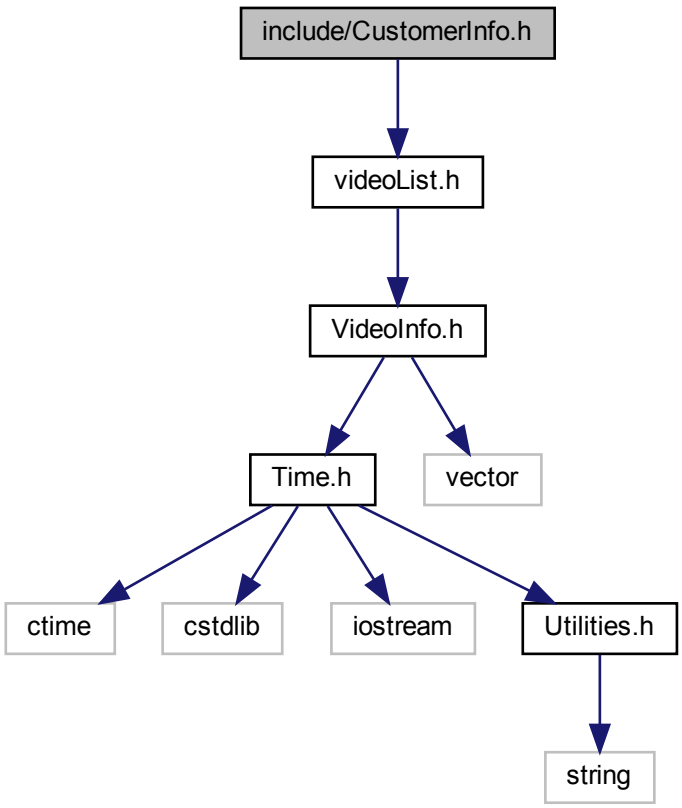
File Documentation

5.1 include/CustomerInfo.h File Reference

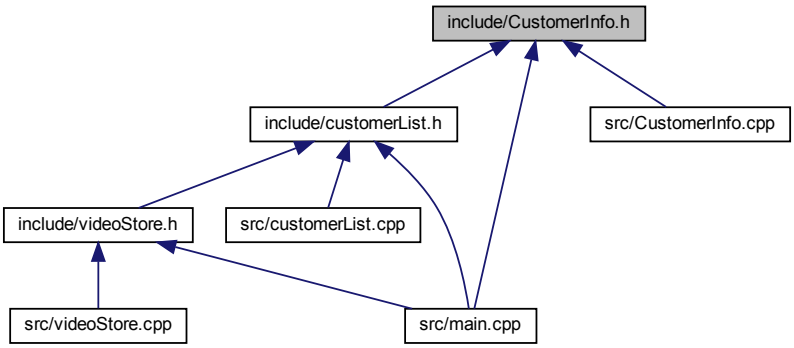
CustomerInfo class is defined here.

```
#include "videoList.h"
```

Include dependency graph for CustomerInfo.h:



This graph shows which files directly or indirectly include this file:



Classes

- class CustomerInfo

  Represents a customer of the store object. Stores basic information about the customer such as their name. Assigns them a random but unique ID.

5.1.1 Detailed Description

CustomerInfo class is defined here.

Author

Abdul Rafay (24100173@lums.edu.pk)

Version

0.1

Date

2022-01-08

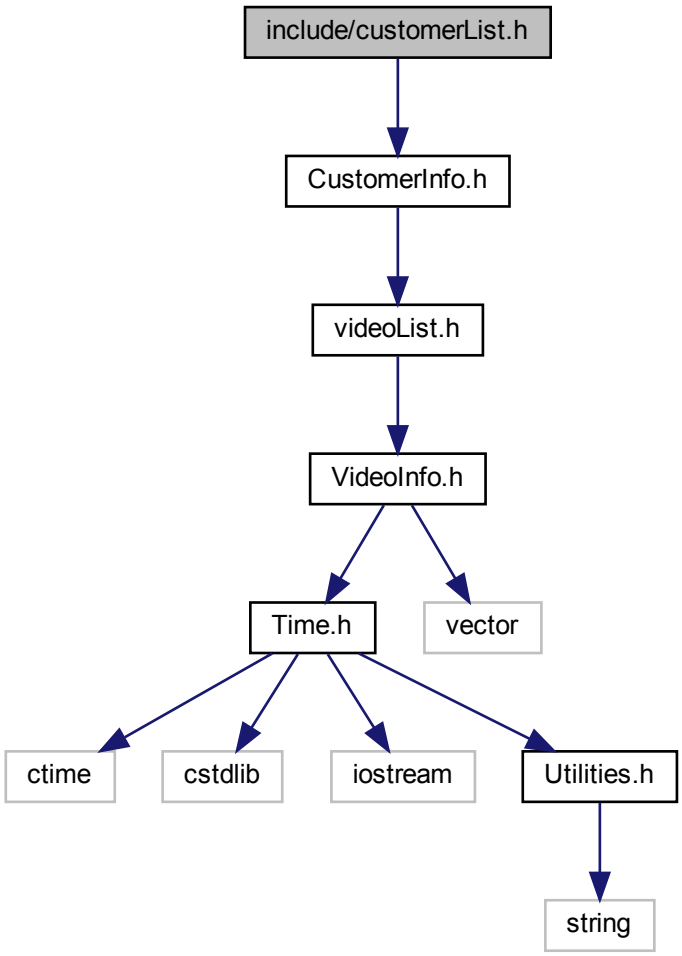
Copyright

5.2 include/customerList.h File Reference

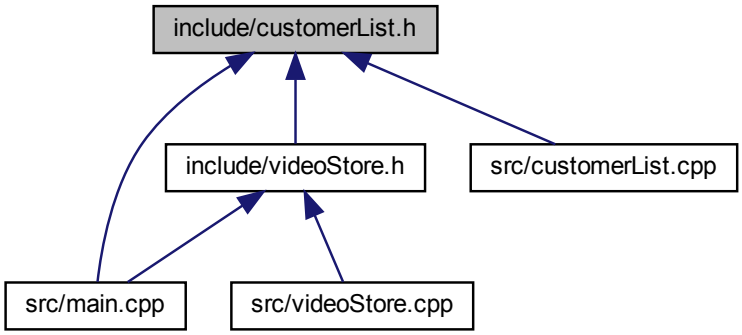
Implements the class simulating the database for videoStore in the form of a linked list.

```
#include "CustomerInfo.h"
```

Include dependency graph for customerList.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Customer

  Represents a node in the linked last for customerInfo. Contains the data of the customer and holds the pointer to the next node in the list.
- class customerList

  Maintains a linked list for customerInfo objects.Used later in videoStore to store the list of customers of the shop.

5.2.1 Detailed Description

Implements the class simulating the database for videoStore in the form of a linked list.

Author

Abdul Rafay (24100173@lums.edu.pk)

Version

0.1

Date

2022-01-08

Copyright

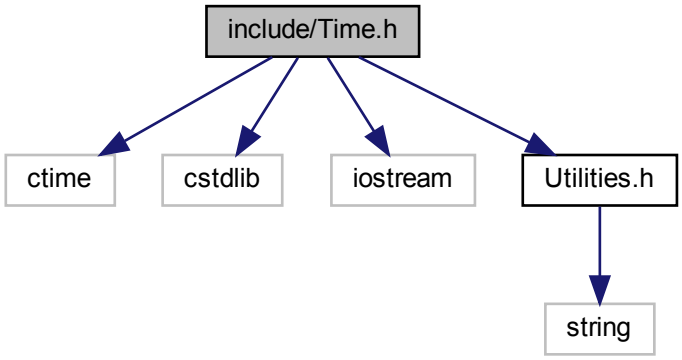
Copyright (c) 2022

5.3 include/Time.h File Reference

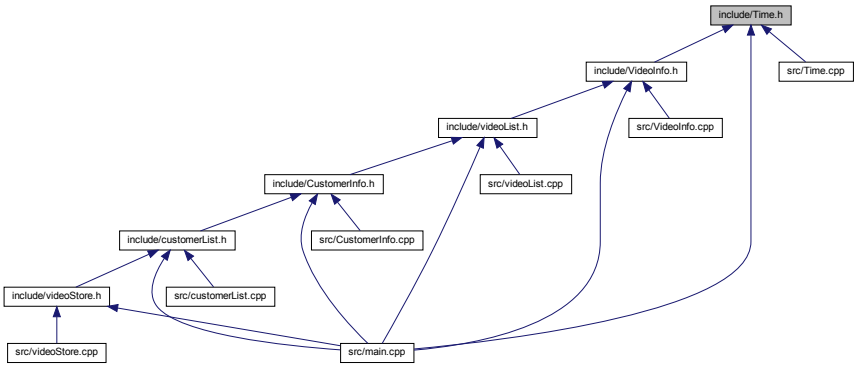
Header interface for the struct Time.

```
#include <ctime>
#include <cstdlib>
#include <iostream>
#include "Utilities.h"
```

Include dependency graph for Time.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Time

  A struct to deal with time.

Functions

- bool IsLeapYear (short year)

  A utility function that returns whether a given year is a leap year or not.
- void convertToUppercase (std::string &str)

  A utility function to change a given string such that all its individual letters get uppercased.

5.3.1 Detailed Description

Header interface for the struct Time.

Author

Abdul Rafay (24100173@lums.edu.pk)

Version

0.1

Date

2022-01-08

Copyright

Copyright (c) 2022

5.3.2 Function Documentation

5.3.2.1 convertToUppercase()

```
void convertToUppercase (
            std::string & str )
```

A utility function to change a given string such that all its individual letters get uppercased.

Parameters

str	

5.3.2.2 IsLeapYear()

```
bool IsLeapYear (
            short year )
```

A utility function that returns whether a given year is a leap year or not.

Parameters

year	

Returns

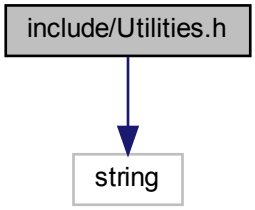
true

false

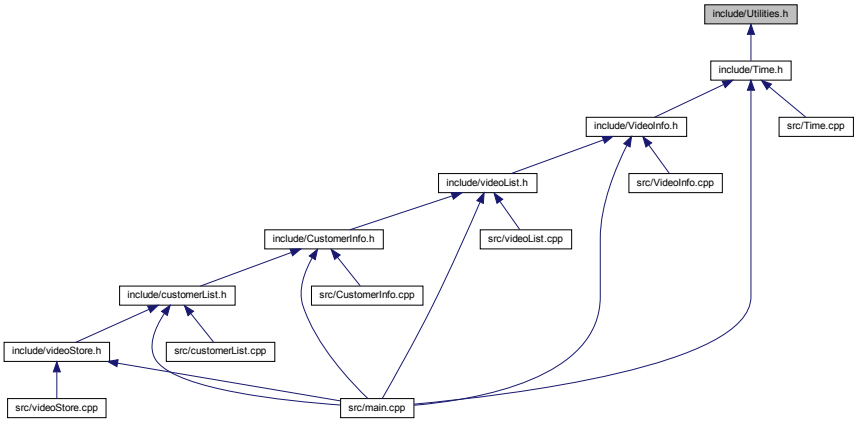
5.4 include/Utilities.h File Reference

Contains definitions for some useful functions.

`#include <string>`
Include dependency graph for Utilities.h:



This graph shows which files directly or indirectly include this file:



Macros

- #define **_UTILITIES_H**
- #define **CLEARCMD** "clear"

Enumerations

- enum STATUS { CLEAR, RENTED }

  To be used in CustomerInfo class to represent the account status of the customer.

Variables

- const int **PRICE_PER_MOVIE** = 1000
- const int **FINE_PER_DAY** = 50
- const int **SECONDS_PER_MINUTE** = 60
- const int **SECONDS_PER_HOUR** = 3600
- const int **SECONDS_PER_DAY** = 86400
- const int **SECS_IN_WEEK** = 60∗60∗24∗7
- const int **DaysOfMonth** [12] = {31, 28, 31, 30, 31, 30, 31, 31, 30, 31, 30, 31}
- const std::string **Months** [12] = {"Jan", "Feb", "Mar", "Apr", "May", "Jun", "Jul", "Aug", "Sept", "Oct", "Nov", "Dec"}

5.4.1 Detailed Description

Contains definitions for some useful functions.

Author

Abdul Rafay (24100173@lums.edu.pk)

Version

0.1

Date

2022-01-08

Copyright

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5.4.2 Enumeration Type Documentation

5.4.2.1 STATUS

`enum STATUS`

To be used in CustomerInfo class to represent the account status of the customer.

Enumerator

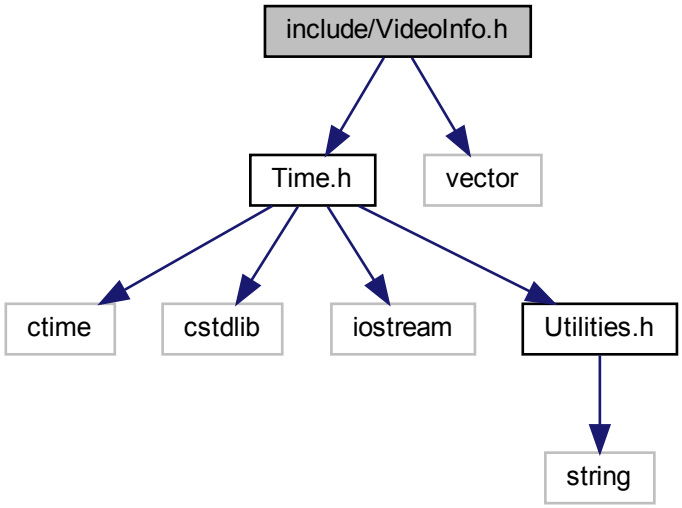
CLEAR	Represents that the account status of user is clear and they have nothing rented or overdue.
RENTED	Represents that the user have rented something.

5.5 include/VideoInfo.h File Reference

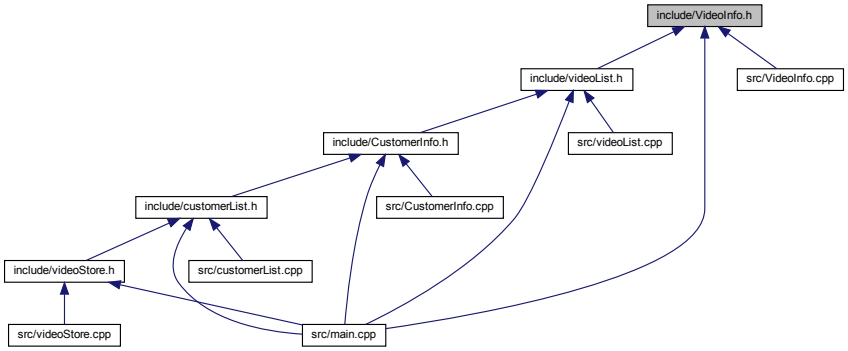
Contains the definition of the class VideoInfo which is abstraction of a movie.

```
#include "Time.h"
#include <vector>
```

Include dependency graph for VideoInfo.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Rented

  A struct to hold info about when and who rented a particular movie. An array of Rented is used inside VideoInfo to keep track of which copies of a particular movie have been rented out.

- class VideoInfo

  Represents a movie present in the store.

5.5.1 Detailed Description

Contains the definition of the class VideoInfo which is abstraction of a movie.

Author

Abdul Rafay (24100173@lums.edu.pk)

Version

0.1

Date

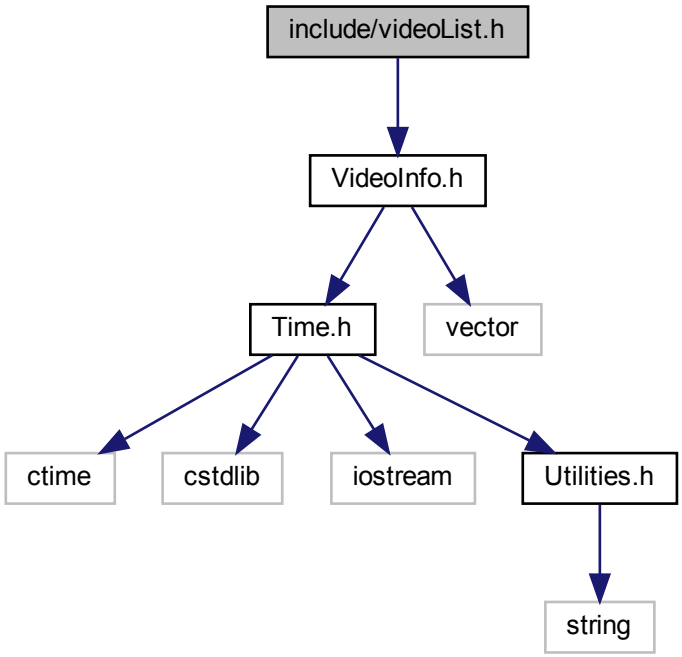
2022-01-08

Copyright

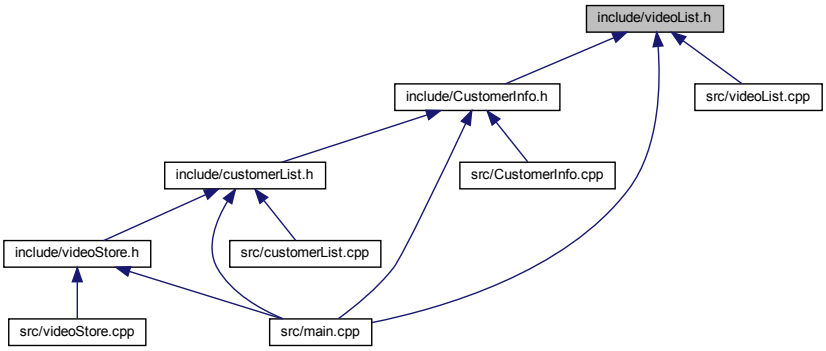
5.6 include/videoList.h File Reference

```
#include "VideoInfo.h"
```

Include dependency graph for videoList.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Video

  Represents a node for the linked list that will store VideoInfo objects. Used to construct a linked list of VideoInfo objects.
- class videoList

  Maintains the linked list where each node is a Video object. A list to hold all the movies. This is done via linked list data structure of VideoInfo objects. Implements necessary relevant methods as well.

5.6.1 Detailed Description

Author

Abdul Rafay (24100173@lums.edu.pk)

Version

0.1

Date

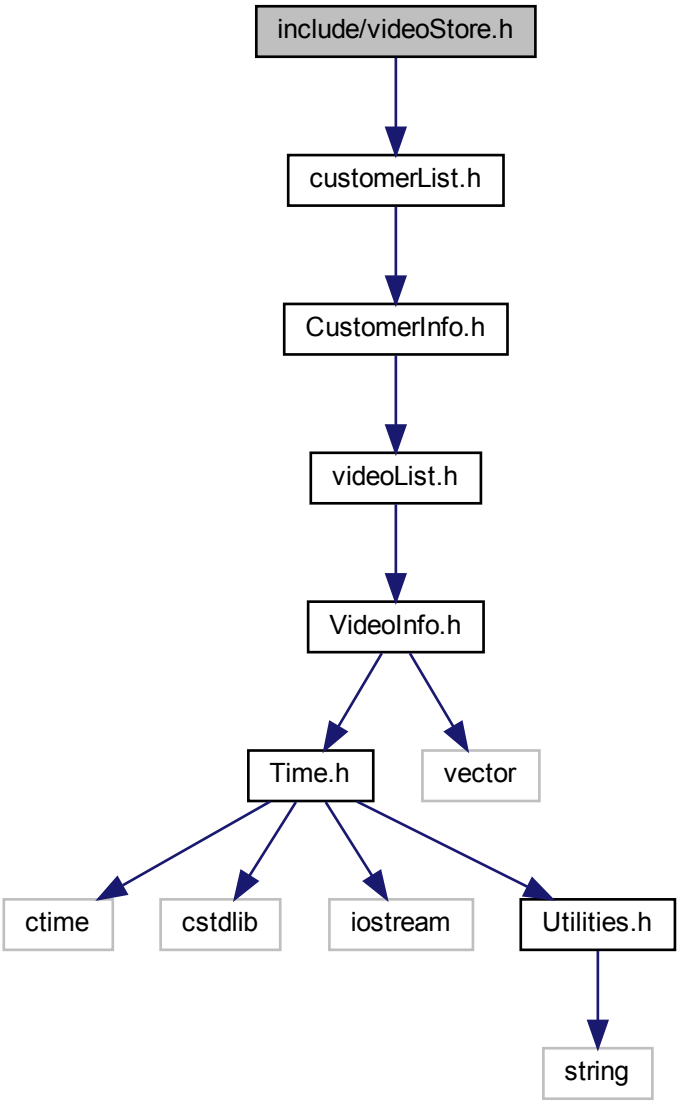
2022-01-08

Copyright

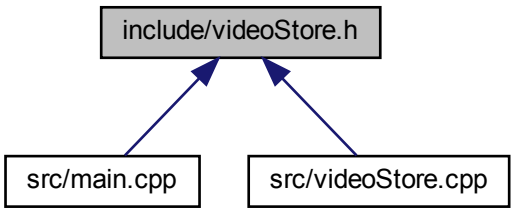
5.7 include/videoStore.h File Reference

```
#include "customerList.h"
```

Include dependency graph for videoStore.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Revenue

  Holds the revenue generated on a particular day/Time. The timestamps are represented by the Time object and the amount generated is stored as well. Also represents a node in the linked list that holds Revenue objects.

- class videoStore

  Main class that represents our video store. Holds the methods to implement the core functionality of the store.

5.7.1 Detailed Description

Author

Abdul Rafay (24100173@lums.edu.pk)

Version

0.1

Date

2022-01-08

Copyright

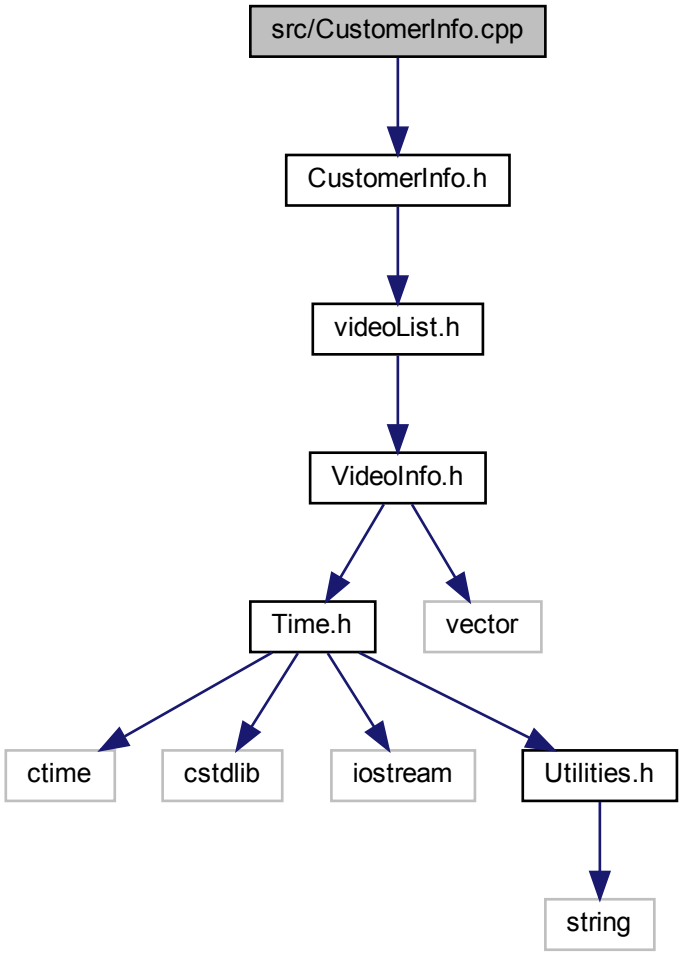
Copyright (c) 2022

5.8 src/CustomerInfo.cpp File Reference

CustomerInfo class is implemented.

```
#include "CustomerInfo.h"
```

Include dependency graph for CustomerInfo.cpp:



5.8.1 Detailed Description

CustomerInfo class is implemented.

Author

Abdul Rafay (24100173@lums.edu.pk)

Version

0.1

Date

2022-01-08

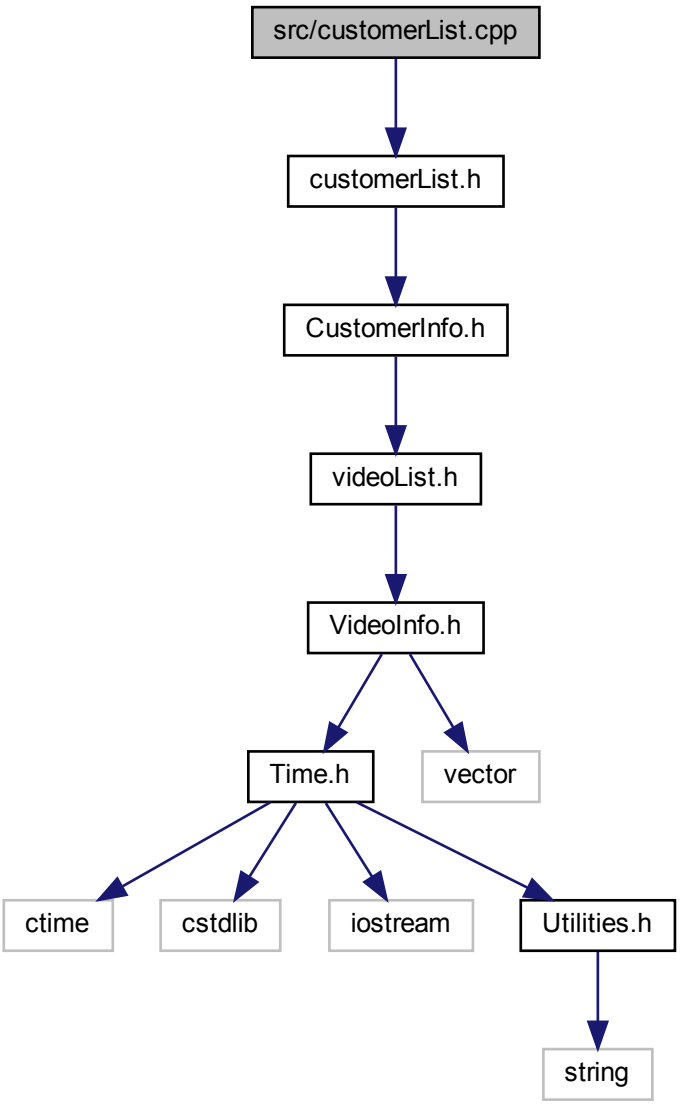
Copyright

5.9 src/customerList.cpp File Reference

Defines and implements the customerList class.

```
#include "customerList.h"
```

Include dependency graph for customerList.cpp:



5.9.1 Detailed Description

Defines and implements the customerList class.

Author

Abdul Rafay (24100173@lums.edu.pk)

Version

0.1

Date

2022-01-08

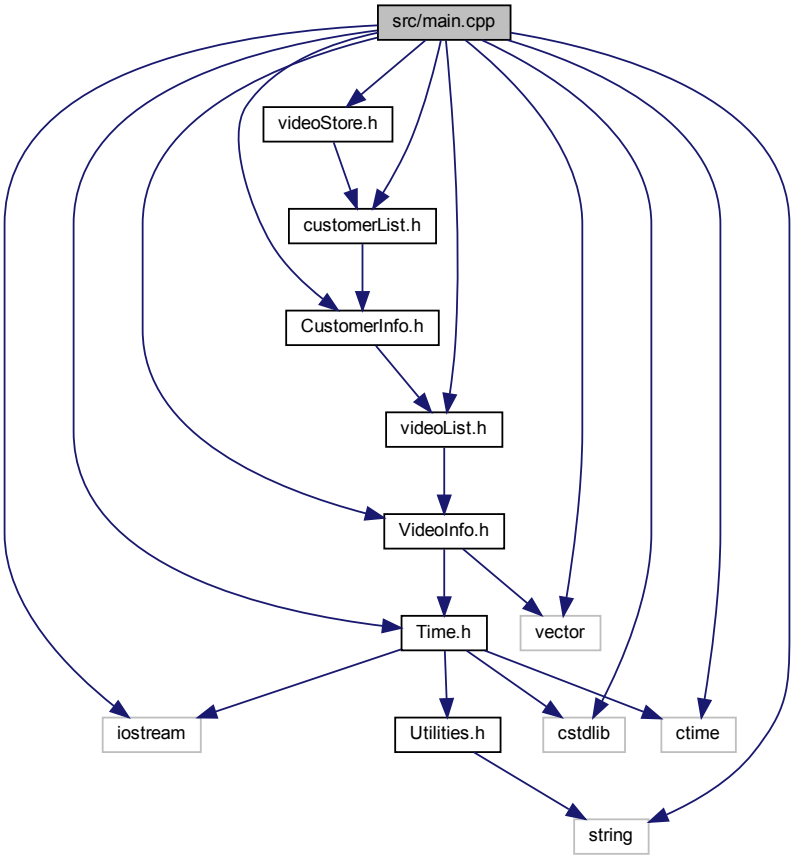
Copyright

5.10 src/main.cpp File Reference

The file contains the main function, the starting point of the program. Employs all the classes and structs to simulate a video store with a minimal functionality.

```
#include <iostream>
#include <string>
#include <cstdlib>
#include <ctime>
#include <vector>
#include "Time.h"
#include "VideoInfo.h"
#include "videoList.h"
#include "CustomerInfo.h"
#include "customerList.h"
#include "videoStore.h"
```

Include dependency graph for main.cpp:



Functions

- int **main** ()

5.10.1 Detailed Description

The file contains the main function, the starting point of the program. Employs all the classes and structs to simulate a video store with a minimal functionality.

Author

Abdul Rafay (24100173@lums.edu.pk)

Version

0.1

Date

2021-12-12

Copyright

Copyright (c) 2021

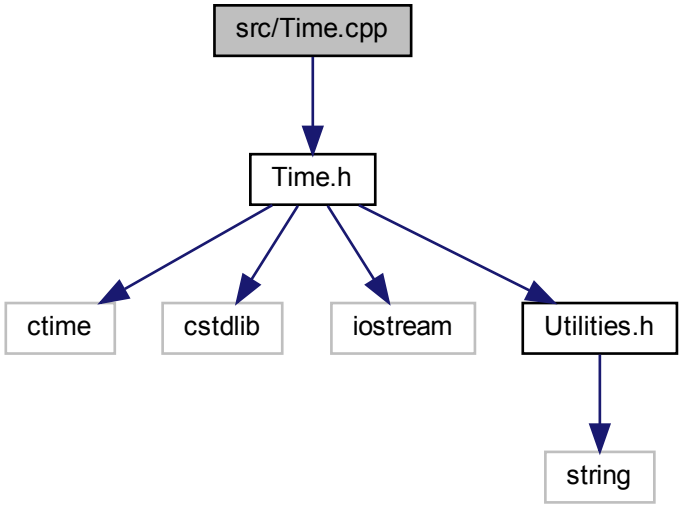
Bug No known bugs

5.11 src/Time.cpp File Reference

Contains the implementation of the struct class Time.

```
#include "Time.h"
```

Include dependency graph for Time.cpp:



Functions

- bool IsLeapYear (short year)

  A utility function that returns whether a given year is a leap year or not.
- void convertToUppercase (std::string &str)

  A utility function to change a given string such that all its individual letters get uppercased.

5.11.1 Detailed Description

Contains the implementation of the struct class Time.

Author

Abdul Rafay

Version

0.1

Date

2022-01-08

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5.11.2 Function Documentation

5.11.2.1 convertToUppercase()

```
void convertToUppercase (
            std::string & str )
```

A utility function to change a given string such that all its individual letters get uppercased.

Parameters

str	

5.11.2.2 IsLeapYear()

```
bool IsLeapYear (
            short year )
```

A utility function that returns whether a given year is a leap year or not.

Parameters

year	

Returns

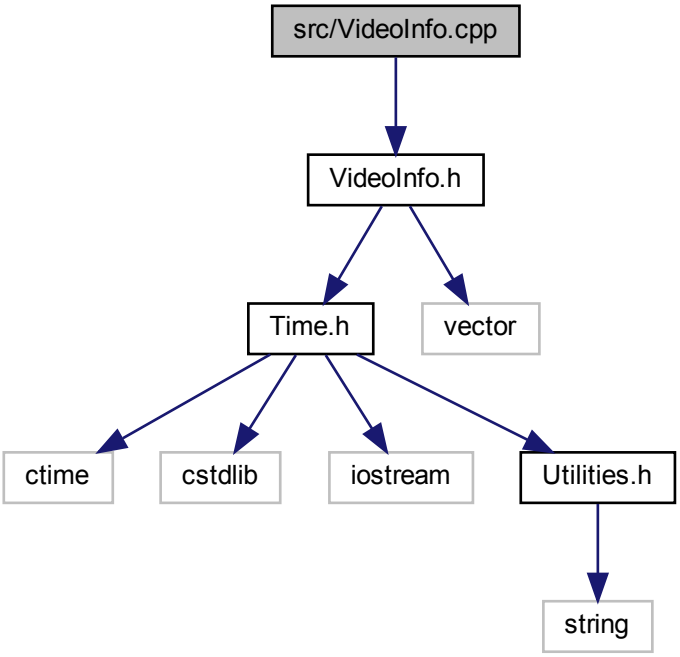
true

false

5.12 src/VideoInfo.cpp File Reference

Implementation of VideoInfo class.

`#include "VideoInfo.h"`
Include dependency graph for VideoInfo.cpp:



5.12.1 Detailed Description

Implementation of VideoInfo class.

Author

Abdul Rafay (24100173@lums.edu.pk)

Version

0.1

Date

2022-01-08

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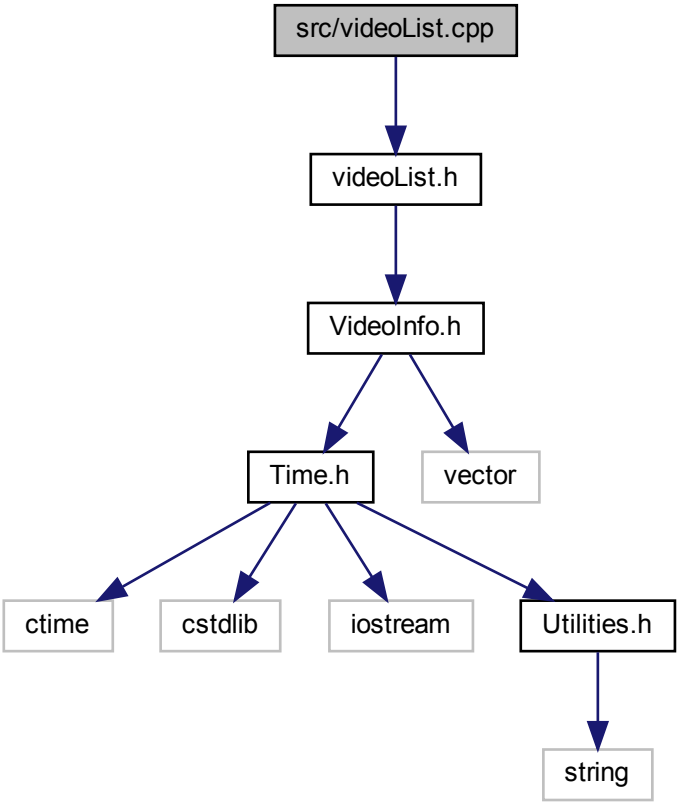
5.13 src/videoList.cpp File Reference

`#include "videoList.h"`
Include dependency graph for videoList.cpp:



5.13.1 Detailed Description

Author

Abdul Rafay (24100173@lums.edu.pk)

Version

0.1

Date

2022-01-08

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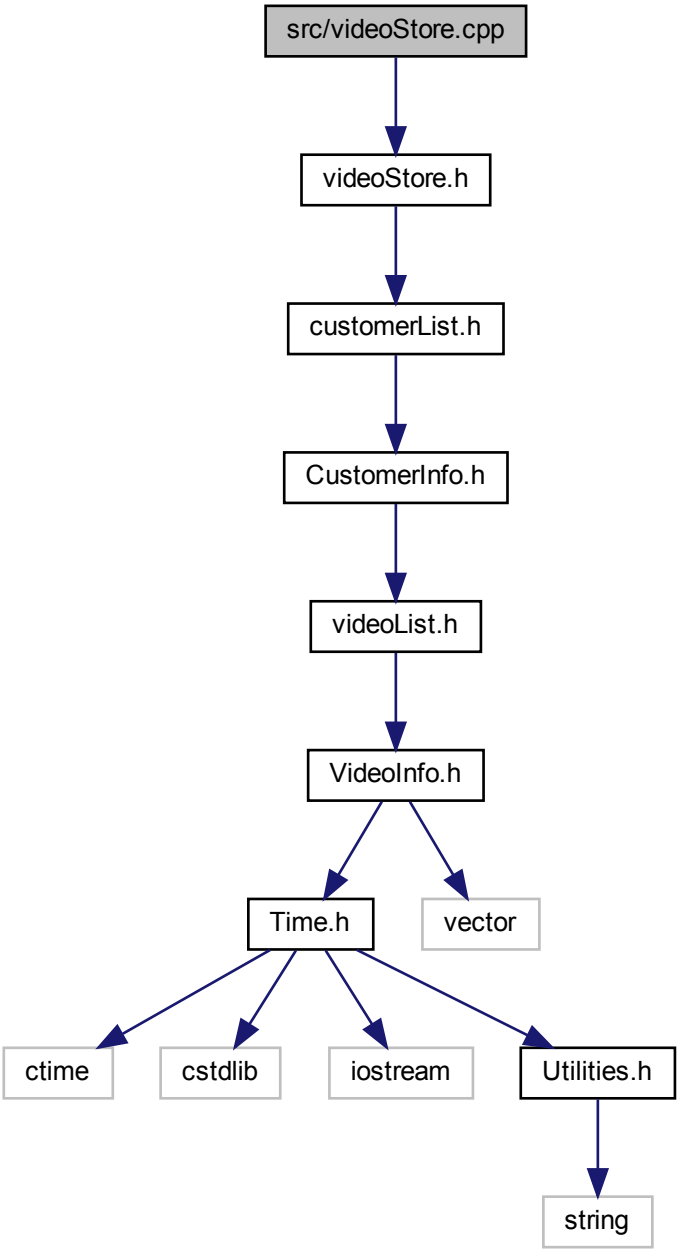
5.14 src/videoStore.cpp File Reference

```
#include "videoStore.h"
```

Include dependency graph for videoStore.cpp:



5.14.1 Detailed Description

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