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Overview

Our main will be the runner of the code and the provider of the data. It will create a rental store object by providing a file name with which it will populate the rest of the container classes. Next, it will call the methods processTransactions() and display() to process the data and display all pertinent information in a neat and orderly fashion.

Our software starts at the rental store class. This class is the primary class and contains a hash table that contains the customers, a queue that processes transactions one by one, and a movie object which contains different genres of movies. The rental store will construct itself using three file names which it will read and parse the information from. After it is constructed then it will process the information and display it.

The rental store class will have an instance of the movies class which itself holds three arrays of genre objects representing comedy, classic and drama . Each genre subclass (Comedy, Classic, Drama) inherits some common fields from the parent class (Genre), but each has fields unique to its own requirements.

The hashtable class contains three fields that represent size, an array and a max size. This hash table is implemented through an array of the stl::list data type. The lists will be of type Customer and will act as a way to manage Customers with matching hash codes. The hash table contains customer objects which are hashed by their given ID number and put into the array. The hashtable methods are getValue(), removeValue(),addValue(), hashify(). Hashify is our hash function and will transform the number given into the index position (by calculating ID%MAX_SIZE). This will be an open hash which means repeated index positions will be connected through a linked list. Customers are their own class which contains the data fields that represent names, ID number and two arrays of what movies they have currently borrowed and what movies they have returned. The class comes with the associated getters and setters in addition to a constructor and display.