

Detailed description

Generalities

CyberVideo is a company that rents DVDs. CyberVideo seeks to extend its offer through the introduction of automated DVD distributors called AL2000. AL2000 are placed in front of small shops and are managed by the shop owners. There are no links between the different AL2000.

An AL2000 is composed of two parts: hardware and software. In the following AL2000 stands for the system composed of both hardware and software.

The project aims to develop only the software part necessary to handle all the functions related to DVD renting and to allow remote data updates. Possible software evolutions are out of the scope of the project.

The hardware part is an input of the project. It is provided by an external company. It is a box of 1 meter wide and 1.50 meter high. It has a touch screen, a slot to get and insert DVDs, and two slots for cards (credit card and subscriber card). The screen is placed so that most people can see and use it, including people in a wheelchair. The DVD slot is under the screen and the card slot at the right of the screen. On the back, an AL2000 has an electrical outlet and an internet connexion.

To rent a DVD, the user needs either a credit card or a subscriber card. The rental cost is fixed for a period and is different whether the renting is done by credit card or with the subscriber card (for instance, it can be 5 euros per day = 24hours with a credit card and 4 euros with a subscriber card). At most, three movies can be rented with a subscription card; only 1 with a credit card.

Clients can ask for a subscriber card via AL2000 and get it through the surface mail within seven days. Money can be put on subscription cards via a credit card using the AL2000. The minimum amount of money on the card is 15 euros. Forbidden types of movies can also be indicated on the card at the subscription.

CyberVideo has a vast catalogue of DVDs. Only a part of them are placed in the different AL2000 and are changed on a regular basis. The catalogue is updated whenever new DVDs are bought by CyberVideo.

Provided functions

Thanks to the AL2000, clients can

- Rent a DVD
- Credit a card
- Get the history of their operations (rented DVDs)
- Get some piece of information (money left on the card, ...)
- Consult the list of movies that are
 - loaded in the AL2000 (available or not)
 - available movies in the AL2000
 - in the catalogue of CyberVideo company, but not loaded in the AL2000.

For each movie, a summary of the main actors and the movie maker is presented

- Use the search function (by actors, director, theme, ...).
- Ask for a movie not loaded in the AL2000
- Consult the top renting of the week or the month

AL2000 administrators can remotely:

- list the available DVDs in a specific AL2000
- configure the welcome screen (with adds, sales, ...)
- collect statistics about the usage of the different AL2000 (number of renting, the average duration of renting, the average cost of renting, ...)

Subscription

A client can ask for one or several subscription cards. Each card is associated with a credit card (which will be debited in case of a problem). Subscription cards can be credited in the AL2000 with any credit card. The minimum amount that can be credited is 10 euros. There is no validity limit on the card. Every operation must be stored for one year.

Renting constraints can be specified on a subscription card. For instance, renting some types of movies like western or peplum can be forbidden. This is very useful for children. Constraints can also be specified on the number of movies that can be rented in a week.

The renting history related to a card has to be maintained (so parents can consult the list of DVD rented by their children on their card).

Some commercial offers can be proposed: for instance, if a subscriber rents more than 20 DVDs in a month, he receives a credit of 10 euros on his card.

Thanks to his subscription card, a user can also express the wish to see a given movie, available in the catalogue but not in the AL2000.

Returning DVD

To return a DVD, one has to insert the card used for the renting and, then, the DVD in the DVD slot. AL2000 has to check that the right DVD is returned. If this is not the case, the DVD is ejected, and the renting is not updated.

If DVD is OK, AL2000 computes the number of days of the renting and debits the card accordingly. If a subscription card is negative, the card is frozen, and the client is required to credit his card as soon as possible. If the card is not credited within one month, the credit card is automatically debited of the due amount plus costs.

When returning a DVD, the client can declare it is damaged. In this case, the DVD cannot be rented anymore and will be verified by CyberVideo (as soon as a technician passes).

If a DVD is not returned within a deadline (15 days for instance), the price of the DVD is automatically debited of the credit card (the one used for the renting or the one associated to the subscription card).

Constraints

AL2000 have to be autonomous. Some maintenance activities can be done remotely through the internet connexion. The AL2000 box can only be opened by technicians from CyberVideo. An AL2000 box can contain up to 100 DVDs. Every month, a technician from CyberVideo updates the DVDs available in the AL2000 box. The new selection includes recent DVDs and the top choices of the subscribers.

AL2000 has to show high availability. They should be running all the time, except for one hour every month to load new DVDs and unload old ones. If an AL2000 gets out of order during a transaction, this one has to be appropriately cancelled: the client must not be billed if it has not received a DVD. Similarly, a client must not go away with a DVD if it has not been rented.

AL2000 has to be easily usable. The user must have facilities to know where he is in the renting process at any time during the operation. Also, he must have possibilities to backtrack at any time. Renting a movie must be doable in less than 5 minutes if the client knows what he wants.