**Erie Movie Store (E-Movie Store): Business Requirements Specification**

**Learning Objective:**

The purpose of the project is to build skills in developing and managing the software engineering process with special attention to Design process. The project is sufficiently complex to demonstrate most of the software development lifecycle phases and Object Oriented concepts and will not burden the development team with a lot of programming and testing efforts.

**System Overview:**

The software to be developed is to be used by a manager, clerks or a customer of E-Movie Store chain that rents movies and games. E-Movie Store owns ten stores. Each store has a unique store ID. The accessibility can be through dedicated terminals at an E-Movie Store or over the Web.

Some functionality should be available only to the manager. However, the manager may perform all clerk functions if he/she chooses to do so.

To be able to rent from the E-Movie Store, a customer must have an account. A clerk issues a card which contains a unique customer ID. Movie tapes and game cartridges are rented for a specified rental period for a specified rental charge. Each copy has a unique ID number. Each store should have at least two copies of each item.

To rent one or more items, the customer brings it/them to a clerk, who scans barcode of the customer card and tape/cartridge. (A future improvement may use RFID attached to the tape/cartridge.) When all items have been scanned, the system should calculate the total charge owed and the clerk will collect it from the customer and print a list of the items with the return dates in red.

Tapes and cartridges being returned can either be handed to a clerk, or they can be placed in the return box in the store, or they can be inserted into a return slot in the wall of the store if the store is closed. In any case, a clerk must scan the barcode of each tape/cartridge that has been returned into the system. (Since no scanner will be available, numeric input from the keyboard will be used for this project).

The application must run on systems similar to those in the lab at Behrend. Java is used for implementation.

**Business Requirements:**

The requirements below should be completely incorporated in the development stages and demonstrated during the last week of the course. The system should provide users with the following.

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1. Manage list of customers

1.1. Create a new customer’s account which includes

1.1.1. Name

1.1.2. Home Address

1.1.3. Home Phone

1.1.4. E-mail

1.1.5. Credit card information

1.2. Modify information stored about a customer

1.3. Only a manger can delete a customer

2. Accept a customer reservation for a title for which all copies are currently rented or placed by a customer over the web. The reservation to be filled later on a “first come, first served” basis.

2.1. Enter a reservation for a specific title.

2.2. Place a newly-returned item “on hold” for the first customer who has a reservation for it.

2.3. Cancel a reservation. This may be performed (though the web) or requested by the customer at any time, or may need to be done if the customer for whom an item is being placed on hold cannot be contacted within 2 days or doesn't want the item (in which case it is put on hold for the next customer on the list, or returned to general stock if there is none.)

3. Manage rental and return of movie tapes and game cartridges.

3.1. Update a rent-status for one or more copies of tapes and/or cartridges to a customer.

3.2. Update a return status of one or more tapes and/or cartridges.

3.3. Report the status of a specific tape or cartridge (title, status [on shelf; returned; rented– if so, to whom and when due; on hold - if so for whom].)

4. Manage records of outstanding late charges owed by a customer.

4.1. Add a late charge if a customer returns a tape or cartridge late. The charge is computed and added automatically to customer’s account.

4.2. The outstanding charges can be collected directly from the customer during next rental and the account is updated accordingly.

4.3. If the charges are above $20, they should be collected before the new rental is processed.

4.4. Charges can be inquired and displayed for each customer.

4.5. The customer can pay by either of

4.5.1. Visa credit card,

4.5.2. Mastercard credit card

4.5.3. Debit card.

4.6. Credit card information must be approved from the regional control computer of the chain; otherwise the transaction is canceled and terminated.

4.7. Approval must be obtained from the bank for Debit card transactions.

4.8. Only a manger can cancel a specific late charge.

5. Manage list of titles of movies and titles of games available for rental

5.1. Only a manager can add a new title

5.2. Only a manager can delete a title

5.3. Inquire about a particular title

5.3.1. general information about it,

5.3.2. availability of a copy for rental.

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6. Only a manger can manage inventory of individual tapes/cartridges available for rental.

6.1. Add one or more copies of newly acquired tapes or cartridges.

6.2. Delete a lost, damaged, or no longer needed tape or cartridge.

7. A manger can make the following changes (for his/her store) that should apply to subsequent rentals, but not to ones that are currently outstanding:

7.1. Set the rental rate for a particular class of item (movie or video game.)

7.2. Set the rental period for a particular class of item (movie or video game)

8. The system will transmit all transactions log to the regional control computer after each successfully completed rental.

8.1. The log entry should include: the store ID, the customer ID, Tape/cartridge ID, the renting and the return dates and time.

9. The system will transmit an "out of inventory" alert to the regional control computer when there is only one copy of the tape/ cartridge available in the store.

9.1. The alert message consists of: the store ID, Tape/cartridge ID, and the desired quantity.

10. Only a manger can produce customers report with the following information about each customer:

10.1. Name and contact information

10.2. Total number of tapes/cartridges the customer currently has out

10.3. Information about currently overdue tapes or cartridges.

10.3.1. There should be one line of information for each item, including title and the return date.

10.3.2. Information about fines currently owed.

10.3.3. There should be one line of information for each fine, including the title of the item that was returned late, the issued return date, the actual return date, and the amount of the fine.

10.3.3.1. If the customer owes one or more fines, the total amount of all fines should be shown.

10.4. The manager can specify the report to be generated for

10.4.1. all customers of his/her store, or

10.4.2. only for customers that have one or more overdue items, or

10.4.3. only for customers that owe one or more fines.

One purpose of this report is to allow management to pursue delinquent customers.

11. Only a manger can produce inventory report about his/her store showing the following information for each title

11.1. Name and other basic information.

11.2. Total number of copies currently owned (should equal the sum of next three items, which should also be reported)

11.3. Number of copies currently rented out

11.4. Number of copies on hold for some customer

11.5. Number currently in stock

11.6. Number of reservations pending for the item

The purpose of this report is to help management decide whether to request more copies of a given title to be available on the shelf in his/her store or to decline some copies when interest in renting a title declines.