



**Indian Institute Of Technology Kharagpur.**

# Software Requirement Specification for Video Rental Store(VRS) Software

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## 1. Introduction

The Video Rental Industry is an ever evolving industry that changes with economy, evolution of culture and technology and to remain viable in the business, the clients must be willing to evolve. The aid of the computer and a system that is fully computerized, user-friendly, time efficient and well organized is indeed very useful in realizing this quest.

The owner of a local video store wants to create a new business plan where everything about renting a video (except the picking up and returning of videos) must be done online. Therefore, the new VRS will allow the following functionality online: To search for videos, To become members, To rent videos, To modify membership information, and To pay overdue fees.

The store personnel may use the VRS to process the rented or returned videos, to add or remove videos to/from his store's video inventory and to update video information. The VRS is intended to increase the owner's profit margin by increasing video sales with this unique business approach and by allowing him to reduce the staffing needed in his stores.

## 2. Overall Description

### *2.1.Product Perspective*

A growing video store business called "VRS", is to expand its chain of stores with the rapid growth in the market by providing efficient online service to the client. "VRS" requires an online software system that will manage all aspects of rental, customer and inventory. This requires that this information be stored in a central repository and can be updated and accessed from any store.

When a new customer visits the system, it should be able to search for CDs/DVDs, their categories etc. However, in order to rent a CD or DVD, customer has to subscribe for a membership.

A member can, at a time, take on loan at most two video CDs and one music CD, the details are entered by a store clerk and a receipt indicating the daily rental charge should be printed by the software.

Whenever a member returns his loaned item, the due amount to be paid is displayed. After the amount is paid, the items are marked returned. If the customer loses or damages any item, the full price of the item is charged to him and the item is removed from inventory.

If item is not lent out by anyone for even once over an year, the item is sold at 10% of the purchase price and is removed from the inventory, The manager can, at any time check profit/loss account.

## ***2.2.Product Features***

VRS is global web based marketplace bringing together private individuals to lent or rent Cds and DVDs in VHS or MP4 format. It can always take advantage of the Internet and World Wide Web to radially improve the way they buy and rent the CD/DVDs

The customer Objectives for VRS:

1. Provide them with huge collection of items
2. Enable them to easily search for, find, and rent the items they want.
3. Enable them to rent the items which they could not ordinarily find or afford.
4. Help them to enjoy the music and movies at least price.
5. Make renting more convenient by allowing customers to access the store online.

The Seller Objectives for VRS:

1. Provide them with huge customer base of potential users.
2. Easily target and personalize the market to appropriate potential users.
3. Enable to earn more money on the purchased items by providing good service.
4. Attracting more customers by making search available on internet.
5. Adding more stock to the store on periodic basis.
6. Removing unused stock from the database.
7. Keeping track of customers, and providing them the membership of appropriate type like – Basic/Primary, Intermediate/Standard, Gold, Platinum/Ultimate, and according provide more facilities to the customer.

## ***2.3. Operating Environment***

The product - VRS enabling peering is expected to be deployed it in a real world wide web for global testing, observations, and for performance evaluation. In this regard, existing Web services technologies will be applied in detail to examine the feasibility of leveraging them. The PHP server (e.g. Apache) and protocols (e.g. HTTP) are used to host the pages.

The Server for storing the database is used over Ubuntu system(14.04 or 16.04) is MySQL.

## ***2.4.User Document.***

Along with the software product, a user manual would be written to help people understand the working methodology and usage of the developed prototype system. It would be written for nontechnical individuals and the level of content or terminology would differ considerably from, for example, a System Administration Guide, which is

more detailed and complex. The user manual would follow common user documentation styles capturing purpose and scope of the product along with key system features and operations; step-by-step instructions for using the system including conventions, messaging structures, quick references, tips for errors and malfunctions; pointers to reference documents; and glossary of terms.

**2.5.Definitions, Acronyms, and Abbreviations**

|                             |   |
|-----------------------------|---|
| Admin & Manager             | Personnel staff who is working in a video store   |
| Customer                    | Anyone who interacts with the VRS with becoming a member  |
| Functional requirement      | A service provided by the software system   |
| Member                      | Anyone who registers with the VRS to acquire membership in the video store  |
| Non-functional requirements | A constraint on the system or how the system is developed   |
| Owner                       | The person with administrative power in the VRS   |
| SRS                         | Software Requirements Specification document  |
| Timer                       | An event that causes an action to occur   |
| Video ID                    | Unique number given to each video unit  |
| Video Rental Form           | Printout showing an individual rental by a member. For each rented video, it displays the video ID, video name, and due date. It also shows rental charges. |
| VRS                         | Video Rental System (the system under development)  |

**2.6.References**

<http://www.jaysonjc.com/programming/how-to-write-a-software-requirements-specification-srs-document.html>

<http://www.cse.msu.edu/~cse870/IEEEExplore-SRS-template.pdf>

<https://www.slideshare.net/steve2434/video-rental-system>

<https://www.visual-paradigm.com/tutorials/data-flow-diagram-example-video-rental-store.jsp>

<http://www.cs.fsu.edu/~baker/swel/restricted/templates/vrsClassDiagram.pdf>

**3. Functional Requirement**

This section provides requirement overview of the system.Various functional modules that can be implemented by the system will be -

**3.1 Description**

**3.1.1 Registration**

If customer wants to buy the product then he/she must be registered,

unregistered user can't go to the shopping cart.

### **3.1.2 Login**

Customer logs in to the system by entering valid user id and password for the shopping.

### **3.1.3 Changes to Cart**

Changes to cart means the customer after login or registration can make order or cancel order of the product from the shopping cart.

### **3.1.4 Payment**

For customer there are many type of secure billing will be prepaid as debit or credit card, post paid as after shipping, check or bank draft. The security will provide by the third party like Pay-Pal etc.

### **3.1.5 Logout**

After the payment or surf the product the customer will logged out.

### **3.1.6 Report Generation**

After all transaction the system can generate the portable document file (.pdf) and then sent one copy to the customer's Email-address and another one for the system data base to calculate the monthly transaction .

### **3.1.7 Purchasing new Stock**

This is handled by Manager of the VRS, who can add the new stock whenever stock is below the minimum requirement.

### **3.1.8 Removing Un-used Stock**

This is handled by Manager of the VRS, who can remove un-used stock from the shop and make its sale up to 10% of their purchase price.

### **3.1.9 Checking Profit/Loss**

The manager of VRS, can anytime check the balance sheet of system.

### **3.1.10 Delivery of Product**

This is handled by Admin of VRS system, depending upon customer's requirement of delivery address, it can send the product through its own delivery service, or may take help of third party vendor to facilitate courier service.

### **3.1.11 To Provide Additional Services to higher class customers**

Depending upon the sale recorded under a customer, the system can automatically categorize the customer into (Basic, Intermediate, Gold, Platinum) different categories, and depending upon the type, they will be given different benefits from VRS system like, renting more number of audio/video cds at a time, discount on rent, etc.



### **3.2 Technical Issues**

This system will work on client-server architecture. It will require an internet server and which will be able to run PHP application. The system should support some commonly used browser such as IE etc.

## **4. Interface Requirement**

Various interfaces for the product could be-

1. Login Page
2. Registration Form
3. Customer can search depending upon different categories like – (Type of Cd/Dvd, Genre, Actors/Directors)
4. There will be a screen displaying information about product that the shop having.
5. If the customers select the buy button then another screen of shopping cart will be opened.
6. After all transaction the system makes the selling report as portable document file (preferably .pdf) and sent to the customer's E-mail address.

### **4.1. User Interface**

#### **4.1.1. Login**

The user/admin/manager can provide login id and password to access the system.

It contains, Login Id, Password fields, Login and Reset Buttons.

#### **4.1.2. Registration**

The customer can become a member of VRS system to rent a CD/DVD

It accepts Name, Contact, Email, Contact Address from user and After accepting the payment of 1000/- Rs, it processes the information to store into database and provides user with userid and password for future communication.

#### **4.1.3. Search**

Any user can search for the CD/DVD according to some filter criteria like – Genre, type, year, title, rating, etc.

It contains the list view of available cd/dvds for the user.

#### **4.1.4. Add to Cart**

When customer selects the product, it can add to cart

#### **4.1.5. Rent**

After selecting all the cd/dvds customer can request for rent.

#### **4.1.6. Return**

When customer returns the CDs, a GUI – accepts the information about returned CD/DVD and generates the required payment.

#### **4.1.7. Receipt.**

After accepting the bill, VRS system generates the bill containing bill details like – Customer Name, Rented CD/DVDs , Rent Date , Returned date , Bill Amount.

### **4.2. Hardware Interface**

The System must run over the internet, all the hardware shall require to connect internet will be hardware interface for the system. As for e.g. Modem, WAN – LAN, Ethernet Cross-Cable.

### **4.3. Software Interface**

The system is on server so it requires the scripting language like PHP .The system require Data Base also for the store the any transaction of the system like MYSQL etc. system also require DNS(domain name space) for the naming on the internet. At the last user need web browser for interact with the system.

#### **4.4. Communication Interface**

Setting up the server into server mode requires that there will be open ports for accepting connections from the clients. The connection between the client and the server uses Connection oriented communication, via TCP/IP—Transfer Control Protocol/Internet Protocol, implements reliable delivery of messages. Connection-oriented communication makes programming easier because the protocol includes mechanisms for detecting and handling errors and an acknowledgment mechanism between client and service.

Apart from client-server communication, it is also required that our application must build the communication with the central data-store, which is also connected through IP address to the PHP scripts, and the client's request are sent to MySql in the form of queries to fulfill the request and modify the database for future purpose.

### **5. Non Functional Requirement**

#### ***5.1. Performance Requirement***

1. Prominent search feature - The search feature should be prominent and easy to find for the user. In order for a user to find the search feature easily – like searching a particular movie, or searching a specific genre or director etc.
2. Usage of the result in the list - the results displayed in the list view should be user friendly and easy to understand. Selecting an element in the result list should only take one click. Required in order to for a user to use the list view easily.
3. Response Time - the fastness of the search scale - The response time of a search is obtained from 1000 searches during testing.

Required - No more than 2 seconds.

WISH - No more than 1 second.

4. Searching a Client – For the administrator's perspective it is also required to search for particular client for checking history of orders or for any specific reason, which must be formulated in a convenient manner.
5. Tracking User Id and/or Password - The user may lose credentials for login, which should be track able by some means.

#### ***5.2. Security Requirement***

The system use SSL (secured socket layer) in all transactions that include any confidential customer information.

The system must automatically log out all customers after a period of inactivity.

The system should not leave any cookies on the customer's computer containing the user's password.

The system's back-end servers shall only be accessible to authenticated administrators.

Sensitive data will be encrypted before being sent over insecure connections like the internet.

### **5.3. Software Quality Attributes**

#### **5.3.1. Availability**

The system should be available at all times, meaning the user can access it using a web browser, only restricted by the down time of the server on which the system runs. In case of a hardware failure or database corruption, a replacement page will be shown. Also in case of a hardware failure or database corruption, backups of the database should be retrieved from the server and saved by the administrator. Then the service will be restarted. It means 24 X 7 availability.

#### **5.3.2. Reliability**

The system provides storage of all databases on redundant computers with automatic switchover.

The reliability of the overall program depends on the reliability of the separate components. The main pillar of reliability of the system is the backup of the database which is continuously maintained and updated to reflect the most recent changes.

Thus the overall stability of the system depends on the stability of container and its underlying operating system.

#### **5.3.3. Maintainability**

A commercial database is used for maintaining the database and the application server takes care of the site. In case of a failure, a re-initialization of the program will be done. Also the software design is being done with modularity in mind so that maintainability can be done efficiently.

#### **5.3.4. Portability**

The application is HTML and scripting language based. So the end-user part is fully portable and any system using any web browser should be able to use the features of the system, including any hardware platform that is available or will be available in the future.

An end-user may use this system on any OS; either it is Windows or Linux.

The system shall run on PC, Laptops, and PDA etc.

## **6. Dependencies**

One assumption about the product is that it will always be used on web browser, so system must have a browser (IE or chrome etc) and another assumption is that the Internet connection in all systems must be available in some way.

To install the application, there must be a server available over Unix(Ubuntu) and for database support, it must have MySql.

## 7. Limitations

1. The user must subscribe a membership for using the VRS store service, for which it must provide a contact information or email-id, for authentication (like user-id or password)
2. Since this software will be for the chain of stores of VRS, if the user requires home-delivery at remote locations, there is possibility of third party vendor, required for delivering the service, and for re-collecting the product. This third party service will be required to be tracked to report to the respective user.
3. If the server is down for any reason, the service will be unavailable to the customer.
4. If user does not have enough bandwidth internet connection, then user cannot avail this service.

## 8. Acceptance Criteria

Following Conditions must be met before shipping this software to the client of VRS system

| Criteria   | Status for Acceptance of Software |
|--|-----------------------------------|
| 1. MySql Server  | Mandatory                         |
| 2. Good Speed Internet   | Mandatory                         |
| 3. Server with Moderate Amount of Memory and Good throughput   | Mandatory                         |
| 4. Third party Vendor for shipping   | Not mandatory                     |
| 5. Host with Network setup and Browsers installed  | Mandatory                         |
| 6. When the application is well tested on sample data before product delivery  | Mandatory                         |
| 7. SLA Agreement signed by both the parties stating all terms and conditions between VRS system owner and software provider. | Mandatory                         |