Digitalization of Cable TV Subscription
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Abstract:
In a system where exist thousands of cable T.V viewers and to operate the process of cable T.V subscription cable operators have to keep record of the cable data through this application would help to digitalized the process of cable T.V subscription and leverage it to increase more subscriptions. Currently there is no such system to manage the cable subscription process. The application uses various specialized techniques to achieve the proposed goal. This may be done by several ways among which web scrapping, semantic annotation and web scrapping plays an important role. Web mining helps us to find similar results from the web and therefore obtain information from the pattern which are located at servers web scrapping is used to retrieve information from web service. Various methodologies like password hashing and other encryption tools are used to ensure top most security of the system.

Keywords: Semantic Annotation, Web Scraping, Web mining.

I. INTRODUCTION

Cable-management system are introduced with single aim in the mind of easing the need of the cable operator to go door to door and fill out forms which includes details of the customer and their choice of channels and packages such a thing would save time as well as efforts of both cable operators as well as the viewers. In current system the whole process is carried out manually which creates overload for the cable operators to maintain documents and records. The proposed system is developed to tackle these issues which slows down the process. The interface and design of the system is kept minimalistic for the cable operators to interact with the system effectively. While developing this system. With the rapid development of the Internet, we have developed the system to keep in track with modern needs. Cyber attacks, malware have become one of the major cyber threats nowadays. Like any software performing critical actions, cable operator management system is integrated and automation. It has been designed keeping in mind the requirements of the clients. Cable operators will incorporate channels in their app for to their customers for that they charge some money monthly. To effectively manage their customers and number of users this software provides automation. In this system they can maintain their staff member’s details and their customer details. The proposed system helps them meet their business goals. Cable Operators once they divide their areas into micro parts then they can assign their staff members to take care about their micro part areas. The admins are rights to register the users into the system. The cable operators are allocated a particular area from where they can perform the operations. This system helps them carry out the operations in a smooth and functional way. Cable operators function in a systematic way to ensure smooth functioning of the overall process.

II. LITERATURE REVIEW

The following research articles are selected for review, keeping in mind the traditional and conventional approaches of digitalization of cable TV Subscription. Recently, many researchers have worked on improving the performance of management software using data analytics algorithm, such algorithm studies our data and gives meaningful information which can be used to further process.

J. Wight[1] proposed a development of a subscriber management system for the digital age. In this article, author described a critical question about the need to create a new subscriber management system. The remit of the team was to investigate whether an existing SMS had the design and facilities to meet the requirements of Orbit. The basic criteria was for a modern system, that could easily be integrated with all our other computerised systems in romeand in which in addition could be easily modified as the demands of orbit change[1]. A thorough investigation of existing systems was undertaken but unfortunately no system was found that fitted our criteria. They found some excellent systems out there. Some well featured systems, some written in well-structured 4th generation languages. However, there were problems with all existing systems, falling into two basic categories. Many systems were based on old technology although some were in the process of releasing new versions. These systems tended to be stand-alone systems with little if any integration with external systems such as telephone switches, authorization computers or media scheduling systems. Such requirements had just not existed when their original program was written. Flexibility of these systems was also the issue as these systems were initially designed by taking into consideration a particular cable company[1]. The essence of cable T.V management is to make the most amount of progress toward the goal with the least amount of effort. A key way to do that is to make a system which is interactive and easy to use for the cable operators as well as the common users. The communication between them should be easy and clear. Initially, idea was formulated about how to define the main models of the app which acts as a functional component are the users and admins. The next step was defining the authorization of the models. The admins are
authorized to create plans as well as channels. The users on other hand were authorized to only create packages. Digitalization of cable T.V subscription is the need of the hour to pave way for the digitalized ecosystem, it changes the way we operate the cable service system. Directions have been assigned by telecom regulatory authority of India (TRAI), regarding the implementation of subscriber management system has issued directions to multi system operators (MSO) and to the local cable operators providing cable T.V services in their respective location. There have been cases in which it has been revealed that the service providers who are supplied the channels or package connectors do not know about the exact subscriber base to which they are providing services. The main management is unsecured and inefficient due to lack of information regarding latest management tools. There is a lack of critical information like details, billing data, subscriber’s information.

### III. PROPOSED SYSTEM

The current system leverages the tech available for management of the Cable TV Operator. This system uses PHP as a backend and html and bootstrap as a front end. This system is built with taking into consideration the architecture of the web and its advantages to serve a huge amount of customers. Its easy access for every one makes it a great platform to serve the cable managing system. Web architecture ensures top most security of the critical data such as user’s subscription information, plan detail, channel’s details and passwords. It is mostly preferred over desktop interface due to its versatility to run on every device.

![Figure 1. Proposed System Architecture](image)

An entity relationship diagram depicts the relationship between the various entities. Entity acts like a model which is used to describe or store our information.

![Figure 2. ER diagram of an App](image)

#### a) User module

This module defines how the software would function at an end user side. Emphasis is given on creating an interactive design which makes it easy for the user to interact with the system. User module deals with the data the user has selected for the display and also his choice of plan. The users can perform various activities as follows:

- User can create its own plans which he would like to consume on daily basis.
- Module logs the history of the operations the user has performed in recent time.
- Send queries of an individual user to the admin.

It has a messaging system wherein he delivers a message or can communicate with the admin whenever he wishes too.

![Figure 3. User dashboard.](image)

#### b) Admin module

The admin module works as a pivotal component in a system. This proposed system uses both authentication and authorization to give users sense of security while operating the app. The admin modules perform following activities:

- Incorporates channels according to new channel list channels according to the list given by the cable.
- Adds the pricing list of new/existing channels and its pricing when required.
- Creates users and allows user to customize their own plans or select any one from the existing plan.
- Deactivate an user in case of due payment for a long time.

![Figure 4. Admin Dashboard](image)
c) Recommendation Systems

Traditionally system has been designed to function in a specific way so suffice the need of the user. Proposed system recommend the best plan for the user based on user information of the user. This helps the user to Select the plan which may lead him to his best interest.

Recommendation is done in two ways:

1. Top three most subscribed plan

This feature will help user to customize or select existing subscribed plan.

2. Users age factor:

This feature categorizes plans into sections taking into consideration user’s age. For example kids, adults and senior citizen.

IV. RESULTS AND DISCUSSION

This section involves the entire cable management system circuit. All the components are connected and screenshots are attached.

Following are the screenshots in an orderly manner:

![Figure 5. Recommendations for a user](image)

![Figure 6. All channel list with pricing](image)

<table>
<thead>
<tr>
<th>Type of Resolution</th>
<th>Price ranging</th>
<th>channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>360p</td>
<td>150-450</td>
</tr>
<tr>
<td>HD</td>
<td>720p</td>
<td>799-1000</td>
</tr>
</tbody>
</table>

Comparison between high definition and standard definition available for channels.

IV. CONCLUSION

The system proposed in this paper can efficiently save a large amount of time and efforts of cable operators by managing channel subscription effectively. Traditional management systems are replaced with conventional and efficient system to minimize the wastage of time. Human efforts are minimized as the system is completely automated. A unique feature of proposed system is the recommendation part which suggests users customized plans according to his/her age. With further implications of machine learning models, the current system can be used to predict the user data and actions to give accurate results. User authentication can be carried out with help of face recognition system. In future recommendation part can be more precise with the help of different user parameters.

V. REFERENCES

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