Novel Approach to User Appreciated Media Management Over FM Radio

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Abstract – Conventional FM Radio and Internet Radio systems broadcast songs, news and other programmes which are beneficial to the average user. However, a big drawback with such systems is that they have no scope for user interaction. Also, the user has no say in the programs being broadcasted. Hence we propose a novel approach to manage and store user interests and preferences over the internet for FM Radio services, be it traditional FM Radio services or Internet Radio. To simulate the working of the aforementioned system we assume that a user has 3 favourite songs and he wished to listen to it at a later time. He can use the said service and record his preferences which are stored on a database. An alert message is sent to the user, every subsequent time the song is being played in any FM radio station. Our approach can be extrapolated towards managing other types of data and user preferences too including webinars, conferences and podcasts however the scope of implementing the services is beyond that of our project.

Keywords – Website, Database, phpMyAdmin, XML, CSS.

INTRODUCTION

We are proposing a novel idea where in, the user bookmark or add reminders which are sent to him/her when the user requested media is broadcasted. The system can be comprehended by the help of the following diagram. Over here, Instead of each radio station having its own database of audio material, we develop a master server which holds all the songs or media in general. When the radio station needs to play the songs it connects to the server and in turn accesses the database present in the server to play the songs. Hence this system now is fully equipped to handle and maintain a working knowledge of all the stations and the songs being played in them. Secondly, we need a system which enables user to request or add request tickets to songs present on the database which are broadcasted. To put this functionality into effect, we propose to employ three methods.

• Website Access
• Voice Based Request redressal
• SMS Based Bookmarking Service

Out of the aforementioned three methods we simulate the first method ab-initio. So in order to envisage website based user bookmarking system, we dedicate a secondary table in our database exclusively to manage user accounts. Also, we develop a content management system which includes user login credential capturing and request rendering.

System Requirements:

Webserver:
We use a type of server called WAMP server. WAMP stands for Windows, Apache, MySql and Php. It’s a completely self-sufficient web hosting suite which helps users create websites. Some of the salient features of WAMP server are as follows,

• Wamp Server is a Windows web development environment. It allows you to create web applications with Apache2, PHP and a MySQL database.
• Manage your Apache and MySQL services

Database Engine:
Database can be created by using different software. First we decided to create a database using MS Access. But that model did not have provision of User Addition Interface. Also database size was huge, because songs were stored in the database. Hence, This required the radio stations to maintain a fault tolerant 24x7 high bandwidth connection with Master Database.

Current model is built using phpMyAdmin. Database size is extremely small because the songs were referenced using relative links. Since song was referenced, the database bandwidth requirements were brought down by 55 percent.

Website Creation:
Website is hosted on Web Server and has a list of Registered Stations listed according to frequency of operation. It connects with Secondary database for maintaining user details and requests. The front end is responsible for collecting input in various forms from the user and processing it to conform to a specification the back end can use. The front end is an interface between the user and the back end. In our project Front End is XML with Cascading Style Sheets and backend is Apache Web server with Php.
Anyone to create a website, they follow the flow diagram illustrated below

1. Requirement Gathering
2. Analysis of Results
3. System Design
4. Implementation
5. Deployment and Monitoring

1. Requirement Gathering

Every major project is first built on the drawing board before it is realized on a grand scale. Hence when we decided to start the project we got down to the basics. What we need to implement and in what time frame.

Hence the requirements can be broadly classified into Admin/User Page, Technology to be used, and Client Conformation. Here, we do not delve into client conformation because we have no plans to make a formal launch of the product into the market. So therefore what we gathered from the brainstorming sessions were, the website needs to be an easy to use and intuitive page which enables user interaction with our system and also facilitate request retrieval and servicing. Also, we need to decide on what software we need to use in order to achieve this.

2. Analysis of Results

After the data is collated and collected in one primary databank it is then analysed for potential anomalies and loopholes which may exist. Hence we do not delve into client conformation because we have no plans to make a formal launch of the product into the market. So therefore we gathered from the brainstorming sessions were, the website needs to be an easy to use and intuitive page which enables user interaction with our system and also facilitate request retrieval and servicing. Also, we need to decide on what software we need to use in order to achieve this.

2. Analysis of Results

After the data is collated and collected in one primary databank it is then analysed for potential anomalies and loopholes which may exist. Hence after much deliberation and trial and error, we have decided to use phpmyadmin and XML based website design to meet our requirements. Before we finalized our tools, we encountered various problems in areas like system design using ASP.NET/ColdFusion/HTML and MS Access Integration etc.

3. System Design

The entire system can be broadly classified into GUI design and database design.

- GUI Design

The GUI was built based on the classes and entities model. In popular jargon, the total no of pages required for easy user navigation was calculated and plotted out. Also, miscellaneous pages required for database connection and access were also discussed. After the basic layout of the website was defined, the onus was emphasized on Database design. The main tool used for designing the webpage was Dreamweaver.

- Database Design

Initially we designed a database in MS Access; however integration with php was extremely tough. Moreover, the database in MS Access was built using absolute links rather than relative links. Hence, the physical size of the database grew by leaps and bounds. So therefore we decided to forgo MS Access and decided to implement the said database using phpmyadmin. This proved to be successful.

4. Implementation

We created a database with phpmyadmin. The database had 6 tables namely, user, user request, movie, Songs, Fm song, FM station. Each of the table had a unique function. For example the user table contained details about the user and his mobile number and the email id used during registration. The Movie Table stored the names of the movies stored in the database and each movie is assigned a unique id. Similarly with respect to the songs table, it had all the details of the songs which are associated with the movies. Each song has a unique id with is linked with the corresponding movie id. There are three other tables called Fm Station, Fm Request and User Request. As the name suggests each table contained the FM stations, the request details of the users who have requested songs and also the Users who have requested the songs.

Once the Module Wise Implementation is done, each and every component is checked for errors and redundancies. If any are found, they are corrected and updated.

5. Deployment and Monitoring

Initially during the testing phase, we deployed the website on the local WAMP server under the local host domain. However, for actual demo purposes we have bought a domain in the name of www.agaradhi.ind.in and registered it. We have also bought 1 GB of independent server space as hosting space for our website. We use an interactive tool called cpanel for the website monitoring and maintenance.
CPanel is a UNIX based web hosting control panel that provides a graphical interface and automation tools designed to simplify the process of hosting a web site. CPanel utilizes a 3 tier structure that provides functionality for administrators, resellers, and end-user website owners to control the various aspects of website and server administration through a standard web browser.

**Website Snapshots:**

1. User Login
2. New user registration
3. User request

**DATABASE SNAPSHOTs**

1. SNAPSHOT of the WAMP Homepage
2. SNAPSHOT of the local host deployment page
3. SNAPSHOT of the database used for the webpage
CONCLUSION AND FUTURE SCOPE

The system basically consists of a user interface which also doubles up as a website. The Website has provisions for creating user accounts for different users so that they can login and place their request. Once the request is placed each request is assigned a request ID in the database and once the request is serviced the entry is marked with grey. Also, the entry in the database is marked with a flag which shows that the request has been serviced.

The user also has the option of selecting songs online wherein he/she is shown a list of songs and a list of radio stations. He/She can login and bookmark their favorite songs. Thanks to the ‘MyRequests’ Page, the users can also keep a track of their earlier requests. The contact us also provides a medium through which users can interact with the developers of the site for updating and bug fixes pertaining to the website or the service model.

- This model can also be enhanced to include Radio Stations Guide which provides a weekly schedule of programmes.
- Also, an application can be built for Android and iOS Smart Phones.
- Bookmarking of media gets easier due to the integration of app based bookmarking service.
- Webcasting of media content and subsequent bookmarking.
- Seamless Integration over all common platforms.
- Inclusion of Cloud Server Technology making wires redundant.
- High Bandwidth Services can be used instead of conventional services to speed up the system.

REFERENCE

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