



National University Online Radio Using Shoutcast in Radio Laboratory Work Unit

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ABSTRACT

Today's technological developments, where work can take advantage of existing technologies. Radio is a sound-shaped source of information and nowadays radio has evolved so that it can be accessed through the Internet with streaming media. Streaming radio is not a new technology, but this streaming app is widely implemented by many people. There is a lack of physical radio media among the limited range of broadcasts in an area, limited reach due to weak transmitter frequencies in the area. From the limited range it gives birth to an idea to be able to listen to your favorite radio broadcast anytime and anywhere by utilizing the development of Internet technology as a technique in data compression. In addition, the development of Radio Streaming Media in Indonesia has experienced an increase in which Radio Streaming users from time to time are increasing including application on campus-both public and private campuses. Based on the background that has been outlined, the author will build a Streaming Radio system on the campus of the National University with the Shoutcast method. The results are done by some testers that 93% of online radios can provide up-to-date information, media chats and media requests for listeners and online radios can be accessed well by various users using Internet media via desktop or mobile phone.

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1. Introduction

The need for fast, accurate and accurate information is increasingly needed by the public lately. National University as the Higher Education Institution in conducting public approaches has implemented information technology in a very directed and continuous way. Among the uses of technology that have been running for years are information systems in the form of websites and community radio. Information updates through content on the website are sometimes not fully conveyed to the public because it is still in the form of text and images that still rely on the sense of sight. It cannot be denied if the sense of hearing still has prospects in the delivery of information to date. The existence of conventional radio campus community which is on frequency 107,

Current technological developments, the work can be done by utilizing existing technology. Radio is a source of information in the form of sound that is in Indonesia, in this day and age the radio has evolved to be accessed through the internet with streaming media. Streaming radio is not a new technology, but this streaming application is widely implemented by many people.

There is a physical shortage of radio media including a limited broadcast range in an area, the limitations of this range are due to weak transmitter frequencies in the area [1]. From the limitations of this range gave birth to an idea to be able to listen to favorite radio broadcasts anytime and anywhere by utilizing the development of internet technology as a technique in data compression.

In addition, the development of Radio Streaming media in Indonesia has greatly increased where Radio Radio users are increasing from time to time, including application on campus? campuses both public and private campuses[2].



2. Literature review

2.1 Understanding Radio

Radio is a technology used for sending signals by radiation and modification and electromagnetically. Electromagnetic waves pass by propagating through air and space that is empty of air, because electromagnetic waves do not require a transport medium such as air molecules[3].

Radio has 9 characteristics as follows[3]:

- a) *Theater of Mind*
This characteristic means that the radio has the ability to develop the imagination of listeners.
- b) *Personal*
This characteristic means that the radio can touch the listener personally.
- c) *Sound only*
In presenting this radio information only uses sound media
- d) *At once*
Radio can be accessed quickly.
- e) *Heard once*
Radio listeners can listen at a glance.
- f) *Secondary medium half ears*
Radio listeners can make radio as a friend in conducting activities.
- g) *Mobile / portable,*
Radio physically makes it easy for listeners to carry anywhere.
- h) *Local,*
Radio has a local nature that is over frequency
- i) *Linear,*
Radio has a systematic arrangement.

2.1 Definition of Radio Streaming

Radio Streaming is how the use of a file such as video or audio together in a network on a computer using a data packet and produces output / semi-real-time output. In the streaming process, music will be heard when the computer starts receiving music files.[4].

2.3 Shoutcast

ShoutCast is a freeware that uses radio streaming. ShoutCast can help users in providing a personal Radio Server using available software. ShoutCast consists of two (2) components, namely:

- a) ShoutCast server application that can be connected by a streaming listener.
- b) In sending MP3 streams to the ShoutCast server using the ShoutCast Source for Winamp plugin. In this plugin there are several parameters used for configuring the destination server port, and password.

The audio output format can be heard by many softwares such as RealPlayer, Winamp Quicktime and Windows Media Player

3. Research methods

The radio streaming server application is Shoutcast. Shoutcast can run on Windows or Linux. Streaming radio has the following way of working, DNAS (Distributed Network Audio Server) can receive broadcasts from sources originating from the Shoutcast source DSP Plugin and listening software such as Winamp and Realplayer. And for the next stage the broadcast will be forwarded / forwarded to the radio listener via the internet. In conducting this research, the researcher made observations to collect data ?? necessary data

The following are the steps ?? steps in conducting research:

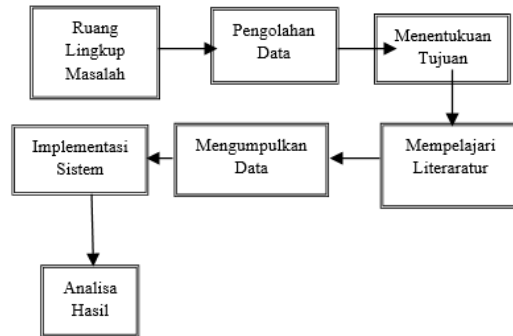


Fig 1. Research Process Flow

- a. The scope of the problem
Within the scope of this problem the researcher determines the limits of the research problem.
- b. Data processing
In conducting data processing, the author analyzes the problems found.
- c. Determine the Purpose
Determine the goals with targets to be achieved, especially those that can overcome the problems that occur
- d. Study Literature
In building a system, researchers conduct a collection of related research / literature review to be studied in order to achieve the specified goals.
- e. Collecting data
In collecting data the researcher made observations by direct observation at the National University
- f. System Implementation
Implementation of the system aims to make it easier to prove / apply the results of the analysis that has been done.
- g. Analysis of Results
Analysis of the results obtained from the results of the implementation of the system that has been done.

4. Results and Discussion

4.1. Program Testing

- a. Main page



Picture 2. Main Page

This page serves to display the first appearance when opening the Online Radio Website.

- b. About page



Fig 3. About page



This about page serves to display the information of the owner or creator of this online radio website.

- c. Streaming page

Streaming

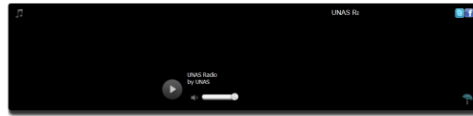


Fig 4. Streaming page

- d. Broadcast Schedule page

Jadwal Siaran

#	TANGGAL	JAM	MATERI	PENYIAR
01	2020-04-24	- 09:00-13:00 - 13:00-16:00	- Cerita Pagi - Penutupan	- Aldiana - Raflian
01	2020-04-25	- 09:00-10:00 - 10:00-00:00 - 00:00-14:00 - 14:00-15:00 - 15:00-17:00	- Cerita Pagi - Musik Dini - Cerita Siang - Materi Ceria - Akhir Berita	- Aldiana - Raflian - Aldiana - Raflian - Aldiana

Fig 5. Broadcast Schedule Page

This broadcast schedule page functions to display the broadcast schedule page. So users can see all broadcast schedules.

- e. News Page

Berita Terkini



SpAcer

SpAcer, adalah yang memiliki cita-cita menjadi seorang penyiar radio tapi belum terwujud karena suatu alasan? jangan sedih, spAcer kini bisa jadi penyiar tanpa harus belajar broadcasting! Yap, siapapun kini bisa memiliki radio sendiri secara online. Caranya lagi, stasiun radio online, mu bisa diakses di mana saja dibandingkan dengan radio FM kebanyakan yang dapat didengar berdasarkan frekuensinya. Untuk mewujudkannya, spAcer hanya cukup memanfaatkan situs Caster.fm dan software SAM Broadcaster. Nggak perlu repot-repot harus mendirikan tower pemancar dan studio khusus dengan peralatan lengkap, spAcer hanya butuh koneksi internet, notebook/PC, software SAM Broadcaster dan microphone. Tertarik

Fig 6. News Page

This news page functions to view all the news that is on the National University's online radio website.

- f. Request page

Yeay! kini Kamu bisa request lagu yang kamu mau disini nih

Masukan nama kamu:

Kamu mau request lagu apa? Tulis apa nih yang pernah kamu dengar dengan lagu ini?

[Send Request](#)

Fig 7. Request page

This request page works for users who want to request a song and give a message or greetings that will be read by online radio broadcasters.

- g. Chat page

Chat Room

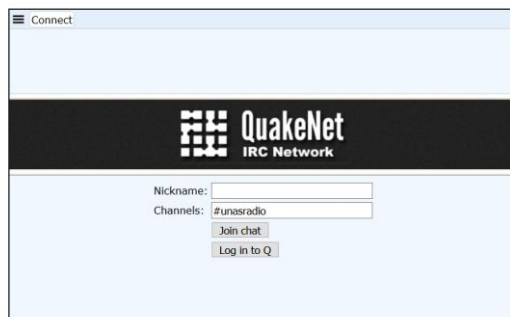


Fig 7. Chat page

This chat page serves as a medium of communication between users who are listening to the National University's online radio.

4.2. Black Box Testing

Tests carried out on systems that are designed are by black box testing as in the following table.

Table 1
Testing Table

No	Test page	Test Method	Expected results	Status
1	Main page	1. The user opens the system page	Successfully opened	Success
2	About page	1. Open the About Menu 2. Showing about	Successfully displayed the About page	Success
3	Streaming page	1. Open the Streaming Menu 2. Play Streaming Radio Online	Successfully streamed	Success
4	Broadcast Schedule	1. Open the broadcast schedule Menu 2. Displays the broadcast schedule	Successfully displayed broadcast schedule	Success
5	News	1. Open the news Menu 2. The system displays the latest news	Successfully displaying the latest news	Success
6	Request	1. Open the Request Menu 2. The system displays the request form 3. Make a request	The listener has successfully made a request	Success
7	Chat page	1. Open the Chat Menu 2. The system displays the Chat page 3. Chat	Chat successfully	Success

5. Conclusion

Online Radio uses Shoutcast at the National University Radio Laboratory Work Unit, successfully implemented and can be accessed smoothly and quickly and accurately, and can be accessed anytime and anywhere using the Internet. So that there are no more obstacles / problems regarding the range of transmitters of the National University Online Radio that are less extensive.

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