A Survey of Educational Portal Using Raspberry PI

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Abstract – The Lecture Recording System (LRS) provides the automatic recording of course lectures, including demonstrations and student presentations, for an entire term. The LRS can be installed in every classroom and all the systems are connected in a network. The network is controlled by the local server which is connected to the public server. The web server will get the access to the files in the public server, so that the files can be accessed by the user with the help of webpage interface.

Index Terms – Lecture Recording System.

1. INTRODUCTION

Lecture recording plays an important role in online learning and distance education. This Project facilitates the students to re-listen the lectures that are taken in the classroom.

The students can download an offline copy of the lectures to their computers or mobiles so that they can hear it with the help of their local media players.

This will be helpful for the students to prepare for their examination even when they are absent for the particular session.

2. PROPOSED SYSTEM

The proposed system consists of raspberry pi which records the lecture in the audio form and the audio file is sent over the network.

The recording is done with the help of Bluetooth audio microphone which is paired with the raspberry pi.Raspberry pi supports network access, this feature is used to send the audio packets to the cloud.

The files can be directly accessed by the dedicated webpage. The user can directly download the audio file or he/she can play it by using the dedicated audio player plug-in.

The objective of the project goes by the effective processing of the audio data from the bluetooth audio device (SBH20), and

to establish a reliable connection between the Raspberry Pi to the local server.

Also the system is designed in the way that the audio quality is also improved.

2.1. Advantages

The present communication systems such as WiMAX, Bluetooth are also providing real time communication but it has range problem as well as they are not very secure. The wireless technologies have gained lots of importance because of high speed, security and low-cost.

3. EXISTING SYSTEM

The Cloud Gate System is used to capture audio packets from the classroom session and to push the packet in real time to the server. In the server the packets are packed and made as a voice file.

The purpose of Cloud Gate is to have offline voice files of classroom session for the student to listen and management to audit. This system would also help students who have missed the class to listen to the classroom from home.

Faculty/Presenters would login to the system through a softphone screen. Softphone always keeps a channel connected to the server until the session is alive.

4. THE RASPBERRY PI

The Raspberry Piis a series of credit card–sized single-board computers developed in England,with the intent to promote the teaching of basic computer science in schools and developing countries.The hardware is the same across all manufacturers.Several generation of Raspberry Pi's have been released.

The next step is to establish connection between Raspberry pi. We have used the technique of MAC address tracking. The Raspberry pi extracts the MAC address of the A2DP device

with the help of JAVA script. Then the Raspberry pi Sends the MAC address to the server.

In the server a database of MAC address with the name of the user is stored. The server revert back the name of the user to the raspberry pi. This provides a facility of authentication which prevents the illegal accessing of database.
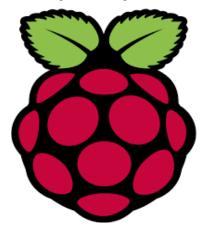

Fig 3.1 Raspberry Pi Logo

The operating systems included with NOOBS are:

- Arch Linux ARM
- OpenELEC
- OSMC(formerly Raspbmc)
- Open source digital media center
- Pidora (Fedora Remix)
- Puppy Linux
- RISC OS– is the operating system of the first ARM-based computer

5. OTHER OPERATING SYSTEMS

The Raspbian Server Edition is a stripped version with fewer software packages bundled as compared to the usual desktop computer oriented Raspbian.

_ PiBang Linux – is derived from Raspbian.

_ Raspbian for Robots – is a fork of Raspbian for robotics projects with Lego, Grove, and Arduino.

- Xbian
- OpenSUSE
- Raspberry Pi Fedora Remix
- Gentoo
- CentOS

- Slackware ARM

5.1. Problem Definition

The Raspberry system should be able to load the soft phone software and allocate required IRQs and also place the other IRQs properly as request channels for pushing the packets and capturing would be simultaneously requesting for processing.

Since the processor is handling high volume request and good quality of recorded audios are expected as output, only personal PCs and Laptops are supporting this now.Currently in Raspberry PI the recording is unclear and audio is choppy too, as the Raspberry system is not able to handle multi-tasking or multiple requests and it disconnects itself from the server resulting in non-availability of recorded files.

6. CONCLUSION

The most basic is web page and small-scale file hosting, where files can be uploaded via File Transfer Protocol (FTP) or a Web interface. The files are usually delivered to the Web "as is" or with minimal processing. Many Internet service providers (ISPs) offer this service free to subscribers. Individuals and organizations may also obtain Web page hosting from alternative service providers. Personal web site hosting is typically free, advertisement-sponsored, or inexpensive. Business web site hosting often has a higher expense depending upon the size and type of the site.

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