SMARRT [NP] OS - AN EDUCATION PACKAGE
WITH TEXT TO SPEECH & SPEECH TO TEXT APPLICATION

S.Annamalai, P.Madhavan

Sensior system Architect, KK INFOTECH[1], Sensior system Architect, KK INFOTECH[2],
samict12@gmail.com,kkinfotechmaddy04@gmail.com

ABSTRACT− *This paper SMARRT [NP] an Education Operating System / Smarrt OS targeting towards a linux based Operating System, it is fully open source, it is portable, means user can use this OS anywhere at any machine without installing, simply by carrying it in portable drives user can use. To deliver E-learning Materials includes basic concepts, analysis, video lectures and simulation of concepts. To provide the standard of performance expected from the learners, information to be learned, and exercises that allow learners to evaluate their performance. All these process are fully developed and covert into bundle. That bundle is integrated into this operating system. The person who is impaired in hearing will not be able to understand what other's speaking in a hand held devices, which makes them depressed and they aims to answer as a normal person. To overcome the above said difficulty an application for those is aimed, that is, Voice recognition software which translates anything the person says on the other end into readable text for the differently able person. So why not convert speech from an incoming call to text so I can read it? The user is offered the possibility of communicating with the incoming phone call using text-to-speech and speech-to-text capabilities. If receiving a phone call in a loud restaurant or quite meeting, you might be able to choose the ability to answer using text messaging. The text would later be then turned into speech for the caller to hear, and the caller's verbal responses would likewise be converted back into text. This application is very important for millions of people having hearing disability. They make it possible for hearing people to enjoy immediate communication and give them independence to have a real time conversation and exchange information.*

1. INTRODUCTION

SMARRT[NP] Operating System is a Live operating system based on Linux. Live means it runs from an external media without anyneed for permanent installation. SMARRT[NP] Operating System boots from USB mass storage devices such as Flash Drive keys as well as from regular hard drives and CD/DVD discs. Simply plug your device in and boot from it. Entire SMARRT[NP] Operating System operating system resides in a single directory, making it easier to organize with your other data. SMARRT[NP]Operating System provides KDE4, Konsole desktop environment already preconfigured for the most common tasks. Included are applications and tools for data recovery, multimedia playback, instant messaging, web and more. SMARRT[NP] Operating System has ram support activated by default,

which is a new technology for automatic RAM compression. Thanks to it, SMARRT^{NP} Operating System runs on computers with as low as 48MB of RAM (in text mode). You can put SMARRTNP Operating System on wide range of different file systems, including EXT (ext2,ext3,ext4), btrfs, and even FAT and NTFS. When SMARRT^{NP} Operating System is started from a read-only media such as CD/DVD, it keeps all system modifications in memory only, and all the modifications are lost when you reboot. On the other hand, if you run SMARRT^{NP} Operating System from a writable device such as USB Flash Drive, it stores all changes there, so all your configurations and modifications are restored next time you boot, even if it is on a different computer. This feature is known as Persistent Changes.

1.1 Existing System

The Existing Linux Based Operating System is little more complicated for new users, means the user should have CUI knowledge. Though, it provides with more controls and commands, user have to spend some time to getting in to Linux in order to use it for the right purpose. It is very difficult to install and work. It is complicated to add new application which we need to install and also it needs online support for some

application, and user must have terminal knowledge to install. It is difficult to find the solutions for the problems.

1.2 Proposed System

The proposed system SMARRT^{NP} an Educational OS is easy to access and install. It supports all programming language. It allows the user to add new application or module. It is fully open source Operating system. It occupies very less size to boot and install. It is portable and can boot at any system or laptop. It contains multimedia content provides e-learning materials and user can add their own E-Learning materials. Those materials are building by open source language "php". E-Learning materials are entirely interactive. User can not only read learn and also test their skills through these materials. This SMARRT^{NP} is easy to trouble shoot.

2.SYNTHESIS

Smarrt OS is a Live operating system based on Linux. Live means it runs from an external media without any need for permanent installation. Smarrt OS boots from USB mass storage devices such as Flash Drive keys as well as from regular hard drives and CD/DVD discs. Simply plug your device in and boot from it. Entire Smarrt OS operating system resides in a single directory /Smarrt/ on your device, making it easier to

organize with your other data. When Smarrt OS is started from a read-only media such as CD/DVD, it keeps all system modifications in memory only, and all the modifications are lost when you reboot. On the other hand, if you run Smarrt OS from a writable device such as USB Flash Drive, it stores all changes there, so all your configurations and modifications are restored next time you boot, even if it is on a different computer.

3.OVERVIEW OF SMARRT [NP] OS

3.1 SMARRT [NP] OS ON USB DEVICE OR HARD DISK

In order to run Smarrt OS from USB device or from hard drive, you should download Smarrt OS as a ZIP archive. When downloaded, extract the ZIP archive directly to your disk's root directory. It will create a single folder /Smarrt/ on your device. When done, one more step is required in order to make the drive bootable: navigate to /Smarrt OS/boot/ directory on your USB device or hard disk and locate bootinst.bat file there. This file contains boot installer program, so just run it by double clicking at it, it will make all the necessary changes to your device's master boot record so your computer's BIOS could actually understand how to boot Smarrt OS from your disk. Next follow the same procedure like if you were booting from CD - reboot your computer and choose to boot from the USB drive or hard disk in your computer's boot menu. Again, you may need to consult your BIOS documentation to find out how to boot an operating system on your computer from your desired device.

3.2 E-learning

Many organizations and institutions are using e-learning because it can be as effective as traditional training at a lower cost. Developing e-learning is more expensive than preparing classroom materials and training the trainers, especially if multimedia or highly interactive methods are used. However, delivery costs for e-learning (including costs of web servers and technical support) are considerably lower than

those for classroom facilities, instructor time, participants' travel and job time lost to attend classroom sessions. E-Learning materials provides video lectures, simulation etc., these developed E-learning materials can be integrated into this operating system.

3.3 Module

Automated Text-to-Speech (TTS) Apps

IDEA, the most recent amendments to the Education for All the Handicapped Children's Act, mandates that standard curriculum materials be accessible to students with special needs. Using TTS apps with digital forms of standard curriculum content as well as assessment materials can help students who read below grade level due to a physical, learning, or cognitive disability. Print-based classroom materials such as books, handouts, activity sheets and tests can present a barrier to students who are bright but read below grade level. In the same way that ramps instead of stairs help those with physical disabilities, digital text combined with TTS software instead of conventional print can help those with reading disabilities. To begin making your curriculum print materials accessible for use with TTS apps:

- Convert existing computer documents of classroom handouts to TXT or RTF files for use by students with TTS apps. (See Acquiring Digital Text and read the Existing files on your computer section for detailed information about this process.)
- Have students take tests via tab. Convert existing tests to digital form or create new tests using a Tab. Many TTS apps programs speak what the user types, so students taking these tests can get support with completing test answers in addition to hearing the test questions.
- Look for supplemental classroom materials on the Internet. There are many repositories of books on the Internet where you can download a digital file of the book for use in your classroom. (See Acquiring Digital Text and look at Downloading text files from the Internet for a list of these repositories and information about downloading these files.)
- Request digital files of textbooks your school district purchases from the publishers of those books. Your request will be most effective if made when your district is making the purchasing decision.
- Scan textbooks into digital form if you are unsuccessful getting the publisher to supply your

district with those files. (See Converting Print Materials to Digital Text Using a Scanner for detailed

information about this process.)

Designing classroom lessons that use digital materials enables

students with various learning styles and needs to access these

same materials equally. Because digital media is inherently

flexible, you can adjust the media to the needs of the student.

They use digital text and TTS support.

4. CONCLUSION

This paper made a clear and simple overview of working of text to speech system (TTS) and speech to text system (STT) in step by step process. There are many text to speech systems (TTS) and speech to text system (STT) available in the market and also much improvisation is going on in the research area to make the speech more effective, natural with stress and emotions. We expect the synthesizers to continue to improve research in prosodic phrasing, improving quality of speech, text, voice, emotions and expressiveness in speech and to simplify the conversion process so as to avoid complexity in the program.

ACKNOWLEDGMENTS

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