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〔原　著〕

一つのmp3ファイルで多数の再生選択が出来るFlashによるユーティリティ

A Flash-based mp3 utility allowing multiple playback selections within a file

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Abstract:

A Flash-based system called SoundBighter was developed, which allows the user to select sections of an mp3 sound, and then play them as desired with just 1 click to start each section. Up to 10 sections may be selected at any one time. The selections may be as long or short as desired, and may include overlap. The starting and ending position of any section may be adjusted easily if required. The sound file itself may be of any length, from a few seconds to over an hour. Once a set of selections have been made to the user's liking, that configuration can be saved for use later on a local computer or over the Internet. The system was made with language education applications in mind, but offers great flexibility, and so may be useful in other ways also. The main SoundBighter program is a Flash (.swf) file, though a standalone program, which is more convenient when deployment over a network is not required, is also available for use on a local computer (Windows and Macintosh versions are available). The entire system has been made available on the Internet for free download.

Keywords: CALL;　Flash;　mp3 player

1. Rationale behind the project

Nowadays language learners who have access to the Internet can find a huge variety of sound files, mostly in mp3 format, which they can listen to in situ on a webpage, or download to listen to on a computer or mp3 player. In the case of English, there are many websites catering exclusively to the needs of language learners, e.g., 5 Minute English (www.5minuteenglish.com), Randall's ESL Cyber Listening Lab (www.esl-lab.com), Focus English (www.focusenglish.com), to name but three. Also, some broadcasting organizations, such as the BBC (www.bbc.co.uk) and VOA (www.voa.gov), have extensive sections of their websites which are aimed at language learners and teachers. Of course much of the learning material available either does not include sound, or includes sound which is not freely downloadable. Nonetheless, a large variety of sound files to suit all levels of learner are available for download. Ancillary material to aid study, i.e., exercises or scripts, are often provided also. More advanced learners may find material not specifically designed for learners, such as radio broadcasts intended primarily for native speakers, useful. These are often provided in the form of podcasts, which are still basically mp3 files, but make downloading very convenient because new episodes can be automatically downloaded to the subscriber's computer when they become available. Podcasting has become a popular method of distributing audio and video files over the Internet. Though its use is by no means limited to language education purposes,

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it has found wide application in the field.[1,2,3,4]

A learner can make use of a downloaded mp3 file by playing it on a computer or mp3 player. If the learner wants to hear particular sections of the sound again, there are rewind and fast forward buttons to enable this, but it is troublesome and control is not very precise. A learner may want to hear a particular sentence, phrase, or word repeated, but with a file of any appreciable length this is very difficult to do without including unwanted extra sound. Also, to repeat more than once, the process must be carried out again. It is possible to use sound editing software to precisely select a section for repeated replay, or even save that section alone as a separate file, but again the process is time-consuming. On the other hand, a teacher may want to make an exercise or study aid for students in which certain sections of a sound file can be played at will. Even if the teacher takes the trouble to isolate the required sections into separate files, playback will be rather inconvenient for the students.

To address these problems, the SoundBighter system was developed, as there appeared to be no comparable system available.

2. What is SoundBighter?

Briefly, SoundBighter is a Flash-based system which allows the user to select sections of an mp3 sound, and then play them as desired with just 1 click to start each section. Up to 10 sections may be selected at any one time. The selections may be as long or short as desired, and may include overlap. The starting and ending position of any section may be adjusted easily if required. The sound file itself may be of any length, from a few seconds to over an hour. Once a set of selections have been made to the user's liking, that configuration can be saved for use later on a local computer or over the Internet.

The system was made with language education applications in mind, but offers great flexibility, and so may be useful in other ways also. In language education it could, for example, be used to make listening exercises, dividing a longer piece into convenient sections, or focusing on particularly important parts. Or the focus can be narrowed further, even down to the level of individual phonemes, to illustrate points of pronunciation.

3. Operation

The main interface is shown in Fig. 1. At the top there are some color-coded semi-circular markers. In all there are 10 sets, left and right, or start and end, numbered from 0 to 9. The numbers and colors have no particular significance, but are simply for identification. Any set can be used in exactly the same way as any other set. Some of the markers are already positioned on the line below, which represents the sound in an mp3 file. The markers can be dragged onto the line, where they will become active. They can be dragged freely to new positions at any time. Clicking on a start or end marker will play the sound from marker to marker. If a start marker's corresponding end maker has not been placed on the line, the sound will play to the very end, and in the same way if an end marker's corresponding start marker is inactive, playback will start from the beginning. Apart from dragging, a marker's position may be adjusted by clicking on the up or down arrows on the time display underneath, which always refers to the most recently clicked marker (shown by the color in the "Currently active" box on the left). By this method it is possible to make

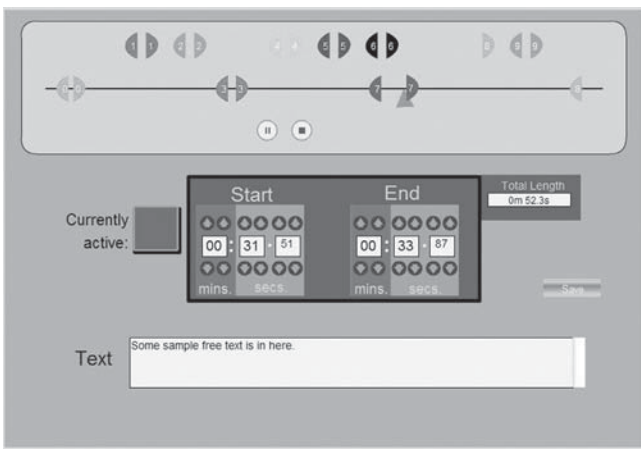

Figure 1. The main SoundBighter interface

much finer adjustments than by dragging. If you set some selected sections you would like to keep for later use, you can save that configuration using the "Save" button. The small triangle beneath the line indicates the current playback position.

The main SoundBighter program is a Flash (.swf) file *SB.swf*, though a standalone program which is more convenient is also available for use on a local computer (Windows and Macintosh versions are available). With Flash, it is used as shown schematically in Figure 2. The sound to be used must be as a file called sound.mp3 (only mp3 format is allowable) in the same folder as the SoundBighter html and Flash files (*SB.html* and *SB.swf* in the figure). In practice, it is convenient to name the html file *index.html* so that it need not be included in the URL. The file *saved.txt* is for holding the details of a saved configuration, which are automatically loaded into *SB.swf*. This configuration also includes any text typed into the Text box, so explanations etc. can be put here instead of, or in addition to, the surrounding html file. If *saved.txt* is empty or absent, the program will start up with all markers in their inactive position. The user can now adjust the marker positions freely and then press the Save button if saving of the configuration is required. When using over a network, it is possible to go as far as producing the text for pasting into the file *saved.txt*, but it cannot be pasted directly in because the file exists in a folder on the server. So for making exercises for network use, the entire operation will be carried out on a local disk, and the files then uploaded to the network. The manual copying and pasting of the text is a little troublesome, but is made necessary by security restrictions in Flash which prevent it from freely writing to a local disk.

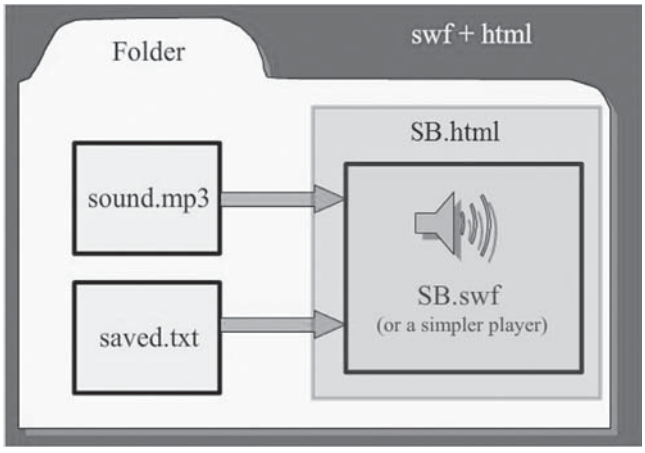

Figure 2. File structure of the network version of SoundBighter

In fact, advances in Flash since the system was constructed have now made it possible to work around the restriction in writing to a local disk, but such capability has not yet been incorporated into the system. Instead, an alternative way to make hard disk operation smoother is already part of the system: standalone Windows and Macintosh (OS X) applications which can be used in place of the SB.html/SB.swf combination. These applications were developed, based on the original Flash SoundBighter application, using Zinc, version 2.5 (http://www.multidmedia.com/software/zinc/). They operates exactly the same as *SB.swf* except that pressing the Save button is all that is needed to save the configuration to *saved.txt* (this file will also be automatically created if it doesn't already exist). The schematic overview in this case (Fig. 3) is slightly different from before:

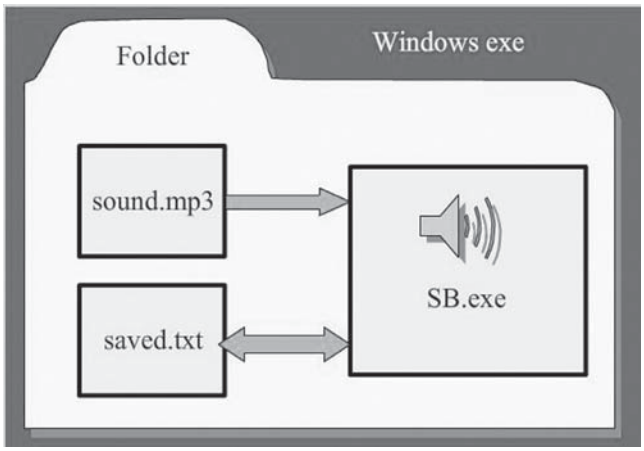

Figure 3. File structure of the Windows standalone version of SoundBighter

For use over the Internet, of course only the html/swf system can be uploaded to the server, but the standalone application can be used locally to set up

the saved.txt files for later uploading.

However, *SB.swf* is not necessarily the kind of interface one would want to use in many cases, e.g., listening exercises. The adjustable markers may be not just unnecessary and distracting, but prone to being accidentally moved, which could totally disrupt the point of the exercise. After the required sections have been set up, the *saved.txt* file can be deployed using a simplified swf file with basic playback only, using numbered buttons. Some alternative swf interfaces are also included as part of the system. Figure 4 shows the simplified basic vertical and horizontal playback-only interfaces supplied which can be integrated into an html page. For better integration the size and background color can be changed, or the background may even be made transparent, by adjusting the html. Details of how to do this, and links to download the entire system, are available at http://www.mylesobrien.com/sb.

Figure 4. Simplified vertical and horizontal interfaces for SoundBighter

4. Discussion

SoundBighter is intended as a tool with broad application primarily in, but not limited to, language learning. As such, it is not based upon any particular theory of language acquisition or educational philosophy, but can be compatible with many of them, depending on how it is used by a teacher or learner. For instance, a teacher can employ it in a task-based or content-based way according to preference, and in the hands of a keen learner, it has the potential to be a powerful aid to the currently popular concept of learner autonomy.[5] So, it fits naturally into the present so-called "post-methods era".[6] More specifically, it can be said to go some way towards attaining a practical implementation of the"Wafers-Like Audio Learning Object" (WALO) laid out in theory by Cebeci and Tekdal,[7] though falling well short of that lofty ideal in the level of functionality and sophistication. But it may probably be said to achieve what Robin[8] refers to as a "better wrapper" (p. 110) for the material. While Robin stresses authenticity of language, in the contrastingly more abstract field of phonetics, SoundBighter may also be usefully applied. It could serve as a helpful adjunct to the Flash applications of Brett,[9] by enabling learners to hone in themselves on phonemes in authentic speech. To use the terminology of Levy and Stockwell,[10] rather than a tutor, it is a tool or "enabling" device. (p. 24)

While SoundBighter has many useful features, its biggest disadvantage as the tool it is intended to be may be that it is somewhat inconvenient to use because of the need to manually group the corresponding swf, html and saved.txt files into a separate folder before deployment, and so it may be daunting for technology-shy users. A more streamlined and automated deployment process, quite feasible using the latest Adobe Flash CS4 and Adobe AIR, should be considered for the next version. A method of synchronously displaying the script of the sound being played (or other relevant text), could also be a useful addition.

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