The existing downloading software performs no specific processing on the movie file. Instead, the existing downloading software equally segments the movie file (for instance, each 512KB is taken as a basic unit) as segmenting an ordinary file. In order to improve downloading efficiency, a downloading client may simultaneously download data segments of different positions from multiple nodes in a node network. However, this downloading mechanism will result in file positions of downloaded data segments are not consecutive, and according to video encoding theory, non-consecutive data blocks are unable to be played. Therefore, it is usually necessary for the conventional downloading software to totally download a movie before the movie can be played. Thus it is necessary for a user to wait for a long time, and the user can not determine in advance whether the movie content meets the user's demand, and can not preview highlights of the movie ahead of time.

In the existing file segmenting method, video data of each frame in the movie is usually segmented into two units, and it can not be located that the position of the key frame starts from which data segment. Therefore, it is difficult to decode a movie file without being totally downloaded into complete video frames, and then a preview function of the movie file can not be achieved. A user must preview the movie file in turn or watch the movie file after the movie file is completely downloaded, which results in a long wait time; or the movie completely downloaded can not satisfy the user's demand, which results in a waste of downloading time.

Summary of the Invention

In view of above, embodiments of the present invention provide a device for downloading a movie file and a method for downloading a movie file, which can achieve a quickly preview of the movie content, and avoid wasting the downloading time.

The device for downloading a movie file provided by embodiments of the present invention includes: a file parsing module, a file segmenting module, a network downloading module and a preview playing module; in which,

~~the file parsing module is to obtain position information of key frames of a movie file to be downloaded;~~

~~the file segmenting module is to segment the movie file according to the position information of key frames came from the file parsing module;~~

~~the network downloading module connected with a downloading server or a downloading node through a network connection, is to download movie file data according to file segmenting information came from the file segmenting module;~~

~~the preview playing module is to implement the preview playing using the movie file data downloaded by the network downloading module.~~

the ~~The~~ file parsing module is to, according to a type of a movie file to be downloaded, send a first instruction to the network downloading module, and receive characteristic data came from the ~~network~~ downloading module; obtain position information of key frames of the movie file to be downloaded from the characteristic data, and output the position information of key frames to the file segmenting module; and send a second instruction to the network downloading module;

the file segmenting module is to receive the position information of key frames sent from the file parsing module, segment the movie file according to the position information of key frames, and output file segmenting information to the network downloading module;

the network downloading module connected with a downloading server or a downloading node through a network connection, is configured to, after receiving the first instruction, download characteristic data of a file header and a file tail of the movie file; after receiving the second instruction, download movie file data according to the file segmenting information sent from the file segmenting module;

the preview playing module is configured to implement the preview playing using downloaded movie file data.

The preview playing module is further to, according to a position of ~~movie file~~ data being played, send a third instruction to the network downloading module;

The network downloading module is further to download ~~movie file~~ data to be played according to the third instruction came from the preview playing module.

The network downloading module is further to store the downloaded movie file data into a local file.

The network downloading module adopts Peer-to-Peer, P2P, downloading mode, serially downloading mode or preview downloading mode.

The preview playing module serially plays images of key frames in downloaded movie file data.

The preview playing module is further to serially play the movie file utilizing downloaded movie file data.

The method for downloading a movie file provided by embodiments of the present invention includes:

obtaining position information of key frames of a movie file to be downloaded;

segmenting the movie file according to the position information of key frames;

downloading movie file data according to file segmenting information, and

utilizing downloaded movie file data to implement the preview playing.

The obtaining position information of key frames of a movie file to be downloaded includes:

according to a type of the movie file to be downloaded, downloading characteristic data of a

file header and a file tail of the movie file;

obtaining position information of key frames of the movie file to be downloaded from the characteristic data.

The method further includes:

downloading movie file data ~~to be played~~ according to a position of ~~movie file~~ data being played.

The method further includes:

serially playing images of key frames in downloaded movie file data.

The method further includes:

serially playing the movie file utilizing downloaded movie file data.

As can be seen from the above technical solutions provided by the present invention, the technical solutions includes a file parsing module, a file segmenting module, a network downloading module and a preview playing module. The file segmenting module segments a movie file according to position information of key frames parsed by the file parsing module; the network downloading module downloads file data according to file segmenting information; the preview playing module implements a rapidly preview of movie content using downloaded file data. The technical solutions provided by the present invention helps users quickly know about the outline of the movie, achieves the purpose for previewing content segments in which a user is interested in advance, and avoids a waste of downloading time.

Brief Description of Drawings

Figure 1 is a schematic diagram illustrating system architecture of existing general downloading software;

Figure 2 is a schematic diagram illustrating a structure of a device for downloading a movie file;

Figure 3 is a flowchart illustrating a method for downloading a movie file;

Figure 4 is a schematic diagram illustrating a structure of a RMVB file.

Detailed Description of the Invention

In general, there are two types of video encoding frames, namely, I-frame and

Claims

1. A device for downloading a movie file, comprising: a file parsing module, a file segmenting module, a network downloading module and a preview playing module; wherein,

~~the file parsing module is to obtain position information of key frames of a movie file to be downloaded;~~

~~the file segmenting module is to segment the movie file according to the position information of key frames came from the file parsing module;~~

~~the network downloading module connected with a downloading server or a downloading node through a network connection, is to download movie file data according to file segmenting information came from the file segmenting module;~~

~~the preview playing module is to implement the preview playing using the movie file data downloaded by the network downloading module.~~

~~2. The device according to claim 1, wherein~~ the file parsing module is to, according to a type of a movie file to be downloaded, send a first instruction to the network downloading module, and receive characteristic data came from the ~~network~~ downloading module; obtain position information of key frames of the movie file to be downloaded from the characteristic data, and output the position information of key frames to the file segmenting module; and send a second instruction to the network downloading module;

~~wherein~~ the file segmenting module is to receive the position information of key frames sent from the file parsing module, segment the movie file according to the position information of key frames, and output file segmenting information to the network downloading module;

~~wherein~~ the network downloading module connected with a downloading server or a downloading node through a network connection, is to, after receiving the first instruction, download characteristic data of a file header and a file tail of the movie file; after receiving the second instruction, download movie file data according to the file segmenting information sent from the file segmenting module;

the preview playing module is configured to implement the preview playing using downloaded movie file data.

2~~3~~. The device according to claim 1~~2~~, wherein the preview playing module is

further configured to, according to a position of ~~movie file~~ data being played, send a third instruction to the network downloading module;

wherein the network downloading module is further to download ~~movie file~~ data to be played according to the third instruction came from the preview playing module.

3~~4~~. The device according to claim 1 ~~2~~ or 2~~3~~, wherein the network downloading module is further to store the downloaded movie file data into a local file.

4~~5~~. The device according to claim 3~~4~~, wherein the network downloading module adopts Peer-to-Peer, P2P, downloading mode, serially downloading mode or preview downloading mode.

5~~6~~. The device according to claim 1~~2~~, wherein the preview playing module serially plays images of key frames in downloaded movie file data.

6~~7~~. The device according to claim 1 ~~2~~ or 5~~6~~, wherein the preview playing module is further to serially play the movie file utilizing downloaded movie file data.

7~~8~~. A method for downloading a movie file, comprising:

obtaining position information of key frames of a movie file to be downloaded;

segmenting the movie file according to the position information of key frames;

downloading movie file data according to file segmenting information, and

utilizing downloaded movie file data to implement the preview playing.

8~~9~~. The method according to claim 7~~8~~, wherein obtaining position information of key frames of a movie file to be downloaded comprises:

according to a type of the movie file to be downloaded, downloading characteristic data of a file header and a file tail of the movie file;

obtaining position information of key frames of the movie file to be downloaded from the characteristic data.

9~~10~~. The method according to claim 7 ~~8~~ or 8~~9~~, further comprising:

downloading movie file data ~~to be played~~ according to a position of ~~movie file~~ data being played.

10~~11~~. The method according to claim 7 ~~8~~ or 8~~9~~, further comprising:

serially playing images of key frames in downloaded movie file data.

11~~12~~. The method according to claim 7~~8~~, further comprising:

serially playing the movie file utilizing downloaded movie file data.