

Downloading and analyzing WMV and MPEG files

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Abstract:

Digital data is readily available in the form of pictures, videos, and over the internet and now on cloud. Therefore, the significance of increasing digital contents demands new challenges to ensure the distribution of the digital content. MPEG stands for MOVING PICTURE EXPERTS GROUP is a standard for video and audio compression for eliminating the noisy signals from the transmitted signals from the satellite. Audio compression is a basic method defined under MPEG-1 and MPEG-4 which by coding techniques compress audio signals to filter out undesired signals. WMV is a video format developed by Microsoft Corporation, designed to handle all types of video content. These files can be highly compressed and can be delivered as a continuous flow of data. WMV files can be of any size and can be compressed to match many different bandwidths (connection speeds). In this paper we will discuss about the tool for downloading and analyzing both WMV and MPEG files simultaneously

Keywords : MPEG, WMV JFreeChart, Java Application

Introduction

Traditional video streaming techniques designed by considering relatively stable traffic links between servers and users perform poorly in mobile environments. Thus the fluctuating wireless link status should be properly dealt with to provide ‘tolerable’ video streaming services. To address this issue, we have to adjust the video bit rate adapting to the currently time-varying available link bandwidth of each mobile user. Such adaptive streaming techniques can effectively reduce packet losses and bandwidth waste. Scalable video coding and adaptive streaming techniques can be jointly combined to accomplish effectively the best possible quality of video streaming services. In the currently developed system, we have developed a java based application with the help of JFreeChart APIs. The application is developed specifically for WMV and MPEG both formats.

MPEG is an acronym for MOVING PICTURE EXPERTS GROUP that was formed by ISO and IEC. It sets the standard for audio and video compression and its transmission. Today in the field of communication compression standards from MPEG-1 to MPEG DASH have been developed that give digital output. MPEG is a first international algorithm for digital audio compression that showed high fidelity. [Manas Arora*,Neha Maurya]

Technologies Used

Java

Java is a programming language and computing platform first released by Sun Microsystems in 1995. There are lots of applications and websites that will not work unless you have Java installed, and more are created every day. Java is fast, secure, and reliable. From laptops to datacenters, game consoles to scientific supercomputers, cell phones to the Internet, Java is everywhere!

Java is an object-oriented language similar to C++, but simplified to eliminate language features that cause common programming errors. Java source code files (files with a .java extension) are compiled into a format called bytecode (files with a .class extension), which can then be executed by a Java interpreter. Compiled Java code can run on most computers because Java interpreters and runtime environments, known as Java Virtual Machines (VMs), exist for most operating systems, including UNIX, the Macintosh OS, and Windows. Bytecode can also be converted directly into machine language instructions by a just-in-time compiler (JIT).

Java is a general purpose programming language with a number of features that make the language well suited for use on the World Wide Web. Small Java applications are called Java applets and can be downloaded from a Web server and run on your computer by a Java-compatible Web browser, such as Netscape Navigator or Microsoft Internet Explorer.

JFreeChart

JFreeChart is a free 100% Java chart library that makes it easy for developers to display professional quality charts in their applications. The JFreeChart project was founded fourteen years ago, in February 2000, by David Gilbert. Today, JFreeChart is the most widely used chart library for Java. JFreeChart's extensive feature set includes:

- a consistent and well-documented API, supporting a wide range of chart types;
- a flexible design that is easy to extend, and targets both server-side and client-side applications;
- support for many output types, including Swing and JavaFX components, image files (including PNG and JPEG), and vector graphics file formats (including PDF, EPS and SVG);
- JFreeChart is open source or, more specifically, free software. It is distributed under the terms of the GNU Lesser General Public Licence (LGPL), which permits use in proprietary applications.

Code Snapshots

For downloading: In this code a given URL file is being downloaded and size of file is being recorded in a text file for the use of chart.

```
try {
    URL url = new URL(address);
    FileOutputStream file = new FileOutputStream(SaveLocation);
    InfoFile = new FileOutputStream(StaticFile);
    HttpURLConnection httpConn = (HttpURLConnection) url.openConnection();
    int responseCode = httpConn.getResponseCode();
    if (responseCode == HttpURLConnection.HTTP_OK) {
        contentLength = httpConn.getContentLength();
        String SizeFormat = " bytes";
        float fileSize = 0;
        if (contentLength >= 1024) {
            fileSize = contentLength / 1024;
            SizeFormat = " KB";
        }
        if (fileSize >= 1024) {
            fileSize = fileSize / 1024;
            SizeFormat = " MB";
        }
    }
}
```

```
if(fileSize>=1024){
    fileSize = fileSize/1024;
    SizeFormate = " GB";
}

DecimalFormat df = new DecimalFormat();
df.setMaximumFractionDigits(2);
InputStream = httpConn.getInputStream();
timer = new Timer();
timer.schedule(new TimerTask(){
    public void run(){
        TotalTime += 1;
        byte arr[] = infoData.getBytes();
        try {
            InfoFile.write(arr);
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}
```

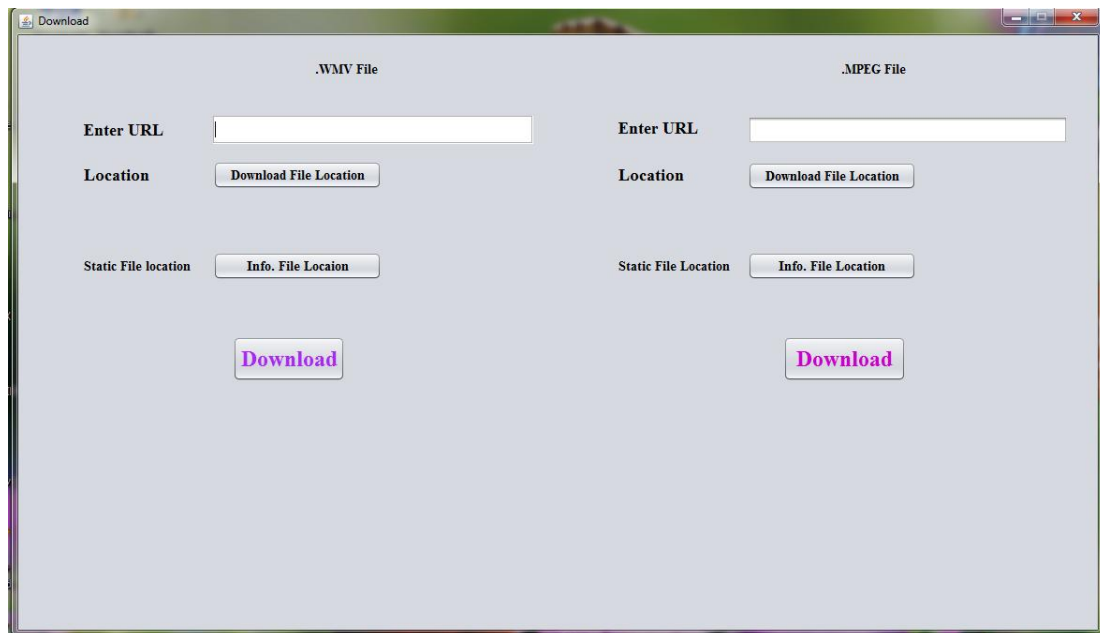
For Chart

```
JFreeChart chart = ChartFactory.createXYLineChart(chartTitle,
    xAxisLabel, yAxisLabel, dataset,
    PlotOrientation.HORIZONTAL, showLegend, createTooltip, createURL);
customizeChart(chart);
File imageFile = new File("XYLineChart.png");
int width = 660;
int height = 220;
try {
    ChartUtilities.saveChartAsPNG(imageFile, chart, width, height);
} catch (IOException ex) {
    System.err.println(ex);
}
JPanel chartpanel = new ChartPanel(chart);
chartpanel.setBounds(0, 0, 660, 220);
jPanel1.add(chartpanel, BorderLayout.CENTER);
private void customizeChart(JFreeChart chart) {
    XYPlot plot = chart.getXYPlot();
    XYLineAndShapeRenderer renderer = new XYLineAndShapeRenderer();
    // sets paint color for each series
    renderer.setSeriesPaint(0, Color.RED);
    // sets thickness for series (using strokes)
    renderer.setSeriesStroke(0, new BasicStroke(4.0f));
    plot.setOutlinePaint(Color.BLUE);
    plot.setOutlineStroke(new BasicStroke(2.0f));
    // sets renderer for lines
    plot.setRenderer(renderer);
    // sets plot background
    plot.setBackgroundPaint(Color.DARK_GRAY);
}
```

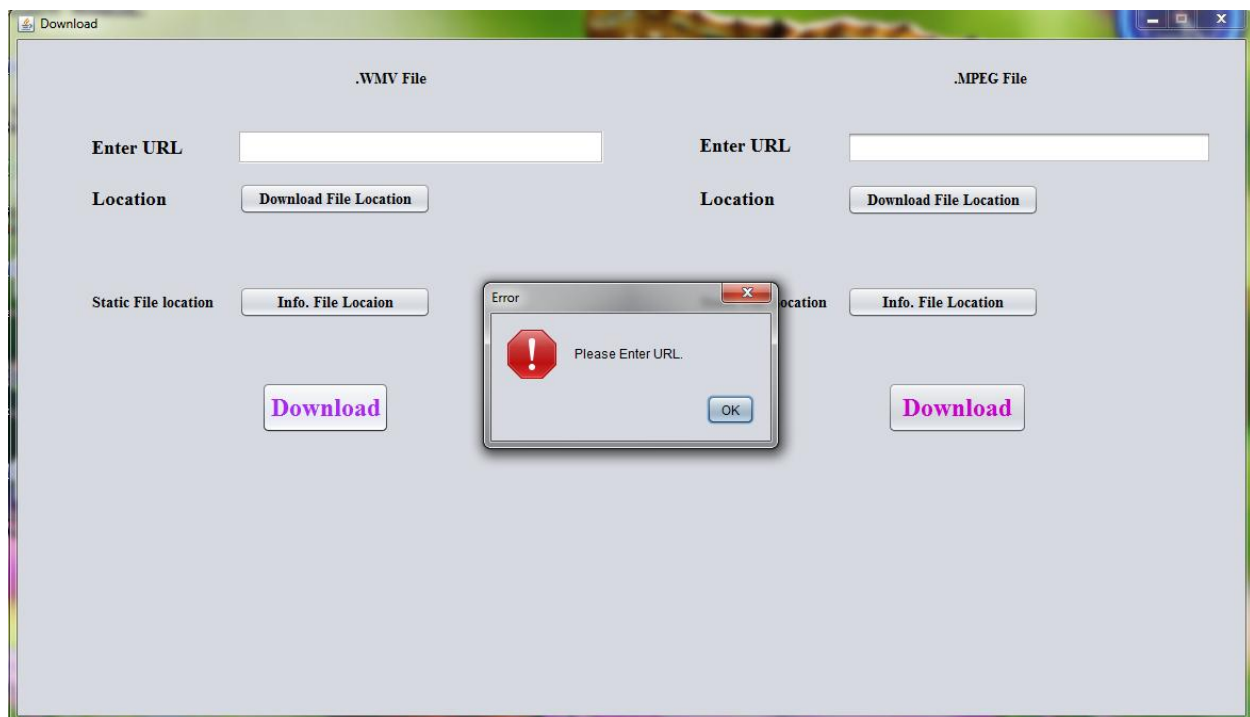
```
// sets paint color for the grid lines  
plot.setRangeGridlinesVisible(true);  
plot.setRangeGridlinePaint(Color.BLACK);  
plot.setDomainGridlinesVisible(true);  
plot.setDomainGridlinePaint(Color.BLACK);  
}
```

ScreenShots

1. Simple UI



2. Submission without URL



3. Single Downloading



4. Downloading both types of files simultaneously



References

- Aman Gupta(2013), Performance Analysis of Various Video Compression Techniques, International Journal of Science and Research (IJSR)
- Dinesh Goyal et al(2013), Performance Analysis of WMV Video Streaming in a Cloud, International Journal of Computer & Organization Trends –Volume 3 Issue8
- Manas Arora, Neha Maurya(2013), Audio Compression in MPEG technologies, International Journal of Scientific and Research Publications, Volume 3, Issue 12,
- Shobha. D Jalikoppa(2014), AMES-Cloud: A Framework of Adaptive Mobile Video Streaming and Efficient Social Video Sharing in the Clouds, International Journal of Scientific Engineering and Research (IJSER)
- <http://www.jfree.org>
- <http://www.tutorialspoint.com/>
- <https://www.java.com>
- <http://www.webopedia.com/>