Multimedia Communications Homework#2 Due June 4, 2018

This assignment is to practice the RTP protocol. Given a video file, you need to write programs that are able to read the file, packetize it with RTP/UDP/IP and send those packets to a remote receiver host. The receiver host has to reconstruct the video file into the original form (may have to accommodate some packet loss), then use a given video player to play it back (but not immediately). (The video is not compressed, so unless you compress it before transmission, it is not practical to playback the video in real time)

The video piece can be found in the following web site, the one named "Akiyo.cif" with pixel format 352 x 288. The video is compressed with 7-zip, so you have to download and decompress it. Then use this file for your program to test. Of course you could try another video source.

Since the file contains 300 frames which come with a file size larger than 40 Mbytes. Your program has to record the following and list them in the output:

1. Number of packets sent by the source.
2. Number of packets received by the receiver.
3. Time stamp of each frame (the time stamp of the last packet of a frame) sent.
4. The received time of each frame (the last packet of the frame)
5. Collect the inter-frame jitter in the receiving side if any, plot the jitter in curve with jitter (time) in Y axis vs frame number in X axis.
6. The total transmission time of the file. Since YUV file is large, you may compress it using any video compression technique before transmit it. You will earn up to 50% extra credit if you accomplish this part.

You may use the following YUV player to test your received video:
http://sourceforge.net/projects/raw-yuvplayer/?source=typ_redirect
Also you may find an example program for RTP packetization on the class website in e3.
In case you always encounter packet loss, you may try using TCP instead of UDP.