

## **Homework #9**

(Due on 10 January 2013)

**Name and characterize three classes of multimedia applications. Give one application example for each class.**

**Discuss the usage of UDP vs. TCP to stream multimedia.**

**What is jitter and how does it impact the playback of multimedia content? Which client-side mechanism can be used to compensate for jitter?**

**Assume a multimedia application streams data with a constant bit rate of 2Mbps. The network delay is between 0 and 2 seconds. How long does a client have to wait before it can begin to playback the stream and how much data does it have to buffer.**

**What is the goal of adaptive playout delay? Give a brief overview of the steps involved.**

**What is the role of RTCP? How can it be used to synchronize RTP streams?**

**Illustrate how a voice call is established using the Session Initiation Protocol.**