2012/12/18 Software Studio Lab9

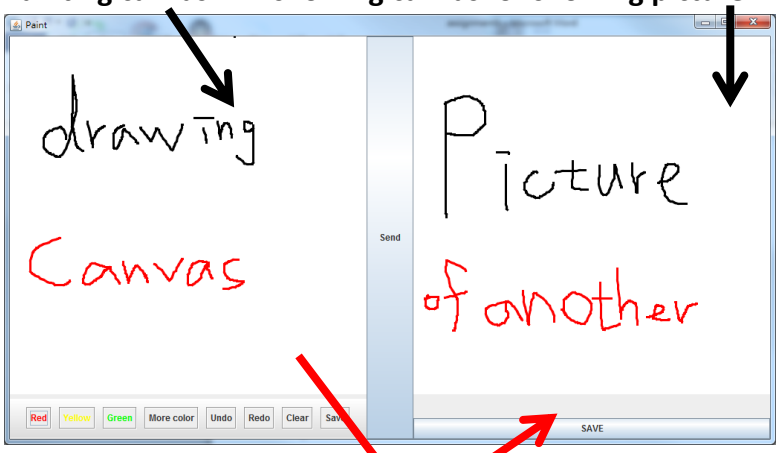
Honor Code

Any cheating will be handled seriously in compliance with the university rules. All assigned work is expected to be individual, except where explicitly written otherwise (e.g., term project). You are encouraged to discuss with your classmates; however, what you hand in should be your own work.

1. Simple sketch-mediated communication. Image-based transmission (80%)

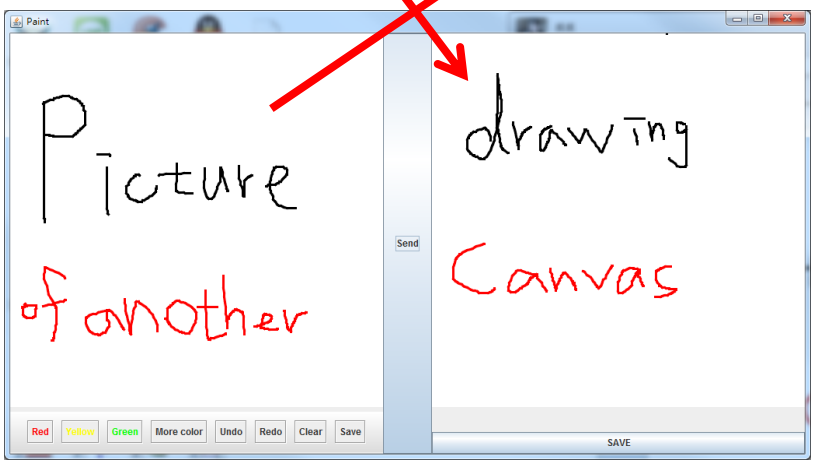
Sketch-mediated communication refers to the idea of using sketching as a way to improve human-human communication. One key idea is that sketching is more flexible than language and can potentially benefit communication by providing an extra visual communication channel. Here you will implement a simple Painter for sketching and using computer network to send the sketch image to another person. Your system needs to provide server side and client side. Both sides contain a painting canvas and a showing canvas for displaying the image from another client.

Painting canvas **showing canvas for showing picture which from another side**



Server

Send picture



Client

In the painting canvas you should provide the following GUI elements：

I. Palette for choosing different colors of the pen.
II. Saving the image drawn.
III. Clearing the painting.
IV. Sending the image drawn to another participant

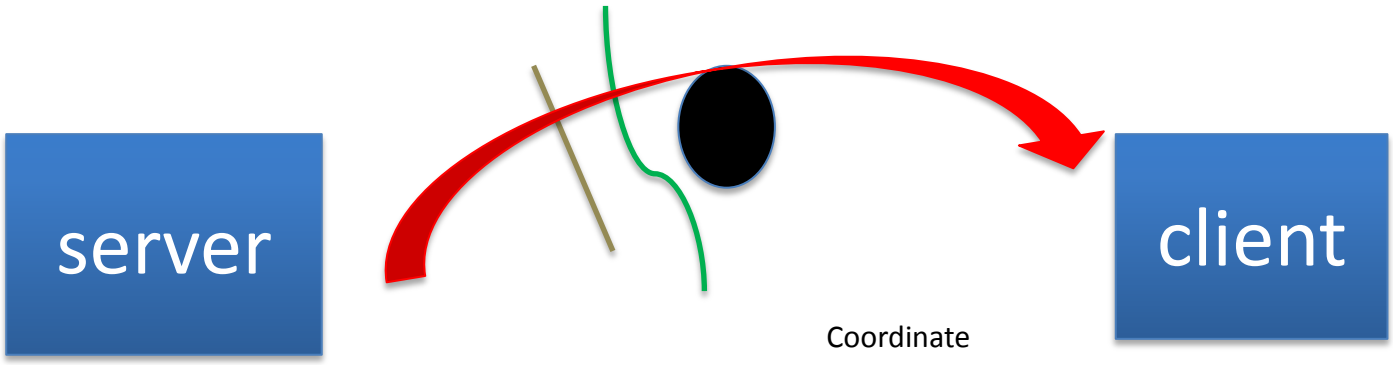
In the showing canvas you should be able to：

I. Showing the picture from another participant
II. Saving the picture from another participant

In image-based transmission, your implementation should transmit whole image data for addressing the requirements.

2. Simple sketch-mediated communication. Instruction-based transmission (20%)

In this part, the requirements are same as the previous question. The only difference is that, rather than transmitting the RGB image, the system will transmit higher-level instructions instead.. The instruction-based approach is typically more efficient as it does not need to transmit anything for pixels that are not updated. This approach is also more open to application as it maintains the underlying representation of sketching that can be used to reproduce the sketch. For example, if your sketch contains a line form (x1, y1) to (x2, y2), you just send the operation (e.g., line) and coordinates of this line to another person. For free-form sketching, you can record the trajectory of paintbrush and send the trajectory to another person. You can define your own data format for transmission for transmitting information of mouse position, trajectory, coordinate and graphic object.



To ,each question of this assignment, you need to provide two runnable jar archives, one for the server side and one for the client side. So there should be a total of four jars. Please differentiate question 1 and question 2 clearly.

注意事項：

1. **Deadline: 2012/12/30 23:59 (12/31 00:00~23:59 交者，成績*0.8)**
2. 交作業時，請按照以下格式標示清楚題號：
   請在各題的資料夾放入**整個 project 資料夾、export 後的 2 個 runnable .jar file、Readme.txt. 因此每題應各有兩個 jar files 以及各自的 Readme.**
   再將這些資料夾一起壓縮成”**ID_Lab9.zip**”，
   將壓縮檔上傳至 http://lms.nthu.edu.tw/ 軟體實驗的**作業**區
3. 每個.java 檔內，第一行請用註解加上學號、姓名及題號。
4. 程式碼務必要有**註解**，說明你解題的方法。(此項也列為評分標準之一)
5. Readme 請包含執行步驟(條列式)、遇到的困難及解決方法。