

Discussion Questions for “GUIs”

1. In CS-140, we depend on the portability of the Java Virtual Machine to allow all of us to develop Java code on our own laptop and desktop computers. If we had to use BU computers instead, how much extra network traffic is required to send a 1920 x 1080 pixel screen, where each pixel has three color values between 0 and 255, and in order to keep the screen and specifically any motion on the screen uniform, needs to be refreshed 60 times a second. Can you think of any ways to reduce this network traffic?
2. Using the X11 X Window System paradigm, each X client gets a rectangular section of the screen. What happens when one client’s section of the window overlaps with another client? How does the X Server decide which window gets priority? Does this priority affect the flow of events from the X client to the X server? Does it affect the flow of events from the X Server to the X client?
3. In the lecture, I show the X Client as being local. Can the X server be on a remote machine? If so, how much network traffic will be required? How does this compare with the network traffic required to maintain a display (as in question 1.)
4. Have you ever overloaded the event loop? You can notice that the event loop is overloaded when you type text, and there is a delay from the time you hit the key until the time it appears on the screen. Have you ever run into a situation where the event queue got full so that what you typed *never* appeared on the screen?