**Lab3**

Explain what is meant by the stream abstraction. What is the relationship between streams and the observer pattern?  What are streams useful for modelling and when might you use them in Rich Web development?

An abstraction is when you have a concept that you describe something in a way that isn’t what it is in the literal sense but is useful. While in programs, it seems like data is flowing into or out of the object. It’s not really happening that way on the inside at all. On the inside, the data you’re moving is being put into/pulled out of a buffer in a discreet way. So, the steam abstraction is away to get all information a user is looking for.

Reactive programming is the general paradigm behind easily propagating changes in a data stream through the execution of a program. It's not a specific pattern or entity per-se, it's an idea, or style of programming. it's the concept that when x changes or updates in one location, the things that depend on the value of x are recalculated and updated in various other locations with a minimum of fuss. Traditionally, you've near always seen the above pattern where x is a GUI event, and that's where the observer pattern comes in - it provides a common method for providing a "trigger" to allow information to be updated whenever such a change is made. In that way, it provides a simple to allow the basic concept of reactive programming to happen in OO programming. Streams are useful for modelling ill types of data and it is used in rich web application to model data types.