# Practical Work (challenge task): Observer Pattern

May be handed in at any time in the semester

Worth 3 bonus marks

Note: This exercise is good for you, but is not compulsory. The three marks will be added to your total for lab work, up to the possible maximum (i.e. it is not possible to get more than 100% for the labs).  Understanding the Observer pattern will help with the major assignment.  Also, if you attempt this exercise you are welcome to get feedback about it as if it were being assessed.

1. Implement an Observer/Observable pair that allows the observable to listen for observers on the network.  Register observers that make contact and send them a message to print to their screen every 20 seconds.

2. Make the Observable into a quiz presenter that retrieves a set of questions from opentdb.com and sends them on to its observers, followed by the correct answer 30 or so seconds later.

Hint: use a networking library to send and receive messages on the network; don’t try to process raw sockets.