# Networks
# Project 2b
## Network Layer, Flood Routing

## 1 Implementing flooding

Begin with the code from Project 2a. Use your previous `RandomNetworkLayer.java` as a starting point for a new code file, `FloodNetworkLayer.java` in which you'll implement *flooding*.

In this new routing implementation, when a packet arrives, the `FloodNetworkLayer` should determine whether the packet is destined for this host, and if so, deliver the data; if the packet is destined for another host, it should **resend the packet on all links**.

The set of methods within `FloodNetworkLayer` that need your attention are:

- `createPacket()`: The packet header may need to be modified to carry data needed for flooding purposes.
- `processPacket()`: Likewise, processing a received packet must handle any changes to the header layout and contents. Here is where packets not destined for this host must be forwarded through **all** links.
- `route()`: **This method should never be called.** An error should occur if this method is invoked, because there's no routing choice to be made.
- `send()`: This method need to be overridden. The standard `send()` relies on `route()` to choose a single link, but flooding requires a different behavior, so `send()` must be specialized.

**A few key considerations:**

- Resending of the packet should not become a runaway process; the resending needs to be limited to avoid overwhelming the network.
- By default, duplicate packets may arrive at the destination. These multiple arrivals are acceptable.
- As an **extra challenge**, you may devise and implement a method that avoid the delivery of duplicates at the destination; the receiving host will identify later arrivals and discard them.[1]

[1] This extra challenge is indeed *extra*: you will not be graded on it, but it would be good practice with the concepts!

## 2 How to submit your work

Go to GradeScope for our course, where you can submit your work. Notice that **you should only submit** `FloodNetworkLayer.java`. *Don't submit the other source code or class files.*

**This assignment is due on Sunday, Dec-03, 11:59 pm.**