1. **2D Heat Equation**

**Question**: How would you increase communication and computation overlap?

**Answer**: What we are currently doing is asynchronously sending interior borders of the 2D equation to neighbor processes and receiving the exterior borders from neighboring processes. Then we advance the interior of the local block and wait for send and receive of the border values to complete. So, we are actually overlapping communication and computation by asynchronously sending and receiving data while doing computations. Further, we can increase this overlapping by sending and receiving multiple borders to neighboring processes. So, the data which worth multiple time steps (say 3 time steps) is communicated at a time. Communications of multiple time steps worth data will take place while system is busy in computing heat equations for non-border values.

1. **Matrix Multiplication**

**Question:** How would you increase communication and computation overlap?

**Answer:** We can use non-blocking sending and receiving functions for communicating data across processors. This will save the time which it takes to wait on the sending and receiving data across processors.