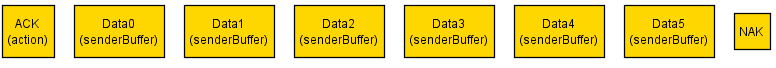
**TEAM POTATO**

**Milestone 2**

In this milestone, we were asked to model acknowledgements from the receiver after a packet has been sent. If the transfer was successful, an ACK acknowledgement is sent. If the transfer was not successful, a NAK acknowledgement is sent, and the previous packet is resent.

Below is the trace for successfully transferring 6 packets in 8 states (i.e. there is one NAK), and another trace where the data is not successfully transferred because it runs out of states.

**State 0**



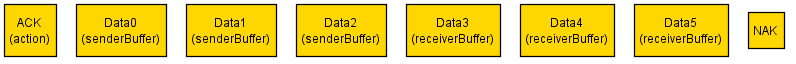
**State 1**



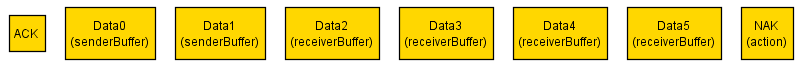
**State 2**



**State 3**



**State 4**



**State 5**



**State 6**



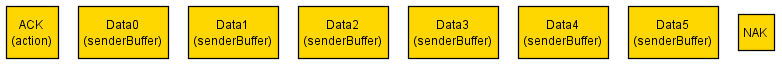
**State 7**



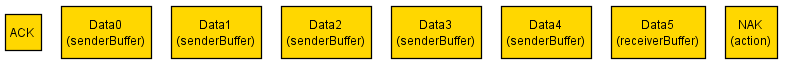
|  |  |  |  |
| --- | --- | --- | --- |
| **State** | **Send Buffer** | **Receiver Buffer** | **Acknowledgement** |
| 0 | 0,1,2,3,4,5 | - | ACK |
| 1 | 0,1,2,3,4 | 5 | ACK |
| 2 | 0,1,2,3 | 4,5 | ACK |
| 3 | 0,1,2 | 3,4,5 | ACK |
| 4 | 0,1 | 2,3,4,5 | NAK |
| 5 | 0,1 | 2,3,4,5 | ACK |
| 6 | 0 | 1,2,3,4,5 | ACK |
| 7 | - | 0,1,2,3,4,5 | ACK |

Now we move on to the trace where the data is not successfully transferred.

**State 0**



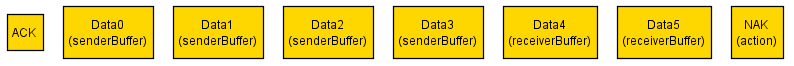
**State 1**



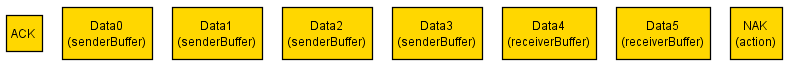
**State 2**



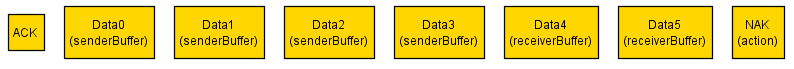
**State 3**



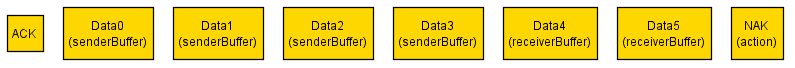
**State 4**



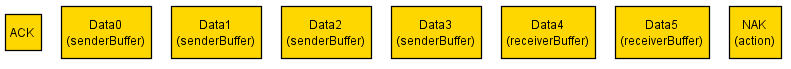
**State 5**



**State 6**



**State 7**



|  |  |  |  |
| --- | --- | --- | --- |
| **State** | **Send Buffer** | **Receiver Buffer** | **Acknowledgement** |
| 0 | 0,1,2,3,4,5 | - | ACK |
| 1 | 0,1,2,3,4 | 5 | NAK |
| 2 | 0,1,2,3,4 | 5 | ACK |
| 3 | 0,1,2,3 | 4,5 | NAK |
| 4 | 0,1,2,3 | 4,5 | NAK |
| 5 | 0,1,2,3 | 4,5 | NAK |
| 6 | 0,1,2,3 | 4,5 | NAK |
| 7 | 0,1,2,3 | 4,5 | NAK |

With this model of data transfer, all data will be successfully transferred if it is given enough time to do so. However, if there is some timeout mechanism (i.e. after 4 NAK’s the sender stops attempting to send data), then data transfer may fail.