SKJDAS Documentation (s30174 SKJ Project 1)

Implemented

- Execution by “java DAS <port> <number>
  If a UDP socket can be opened on that port, then program enters MASTER mode (line 38)
  If not, it enters SLAVE mode (line 77)

  If the execution command is incorrect, the appropriate usage help will be shown

- Slave mode
  Sends a <number> on localhost:<port> using UDP socket
  Exits

- Master mode
  Waits for a message (packet)
  Converts it to appropriate int value (by removing 0s and parsing via BigInteger)

  - Value 0
    Computes and prints average value to console and broadcasts it using broadcast() to the port <port>

  - Value –1
    Prints –1 to the console, terminates the MASTER and broadcasts –1 using broadcast() to the port <port>

  - Else adds the received value to the memory

- Broadcast() function implemented in a way of scanning threw all NetworkInterfaces, checking if they are a loopback interface, if not goes through its InterfaceAdresses to get all the possible NotNull broadcast addresses. Then it constructs 4 byte packet on port <port> with message <msg>, sets its destination to broadcast address and sends it using socket of a MASTER

Difficulties

- I think the difficult part was to implement broadcast
- Parsing negative integers and integers from bytes in general was a bit tricky