MESSAGE
PACKING & UNPACKING

Arthur Pai

MESSAGE PACKING

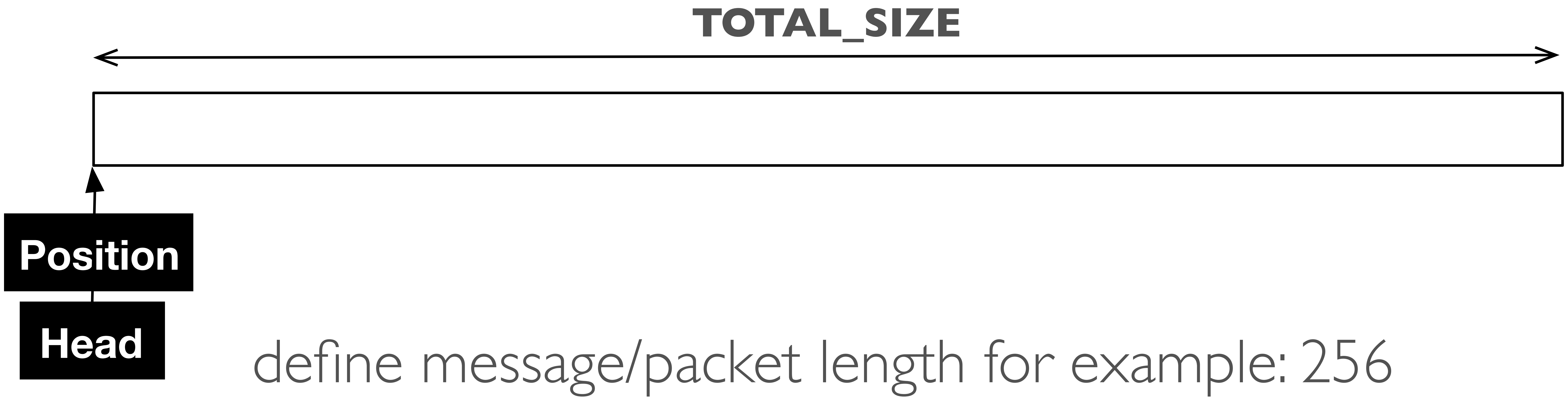
Message ID	Data 0	Data 1	Data 2	Data 3

Message ID

use constant integer as ID

for defining the structure of transferring data

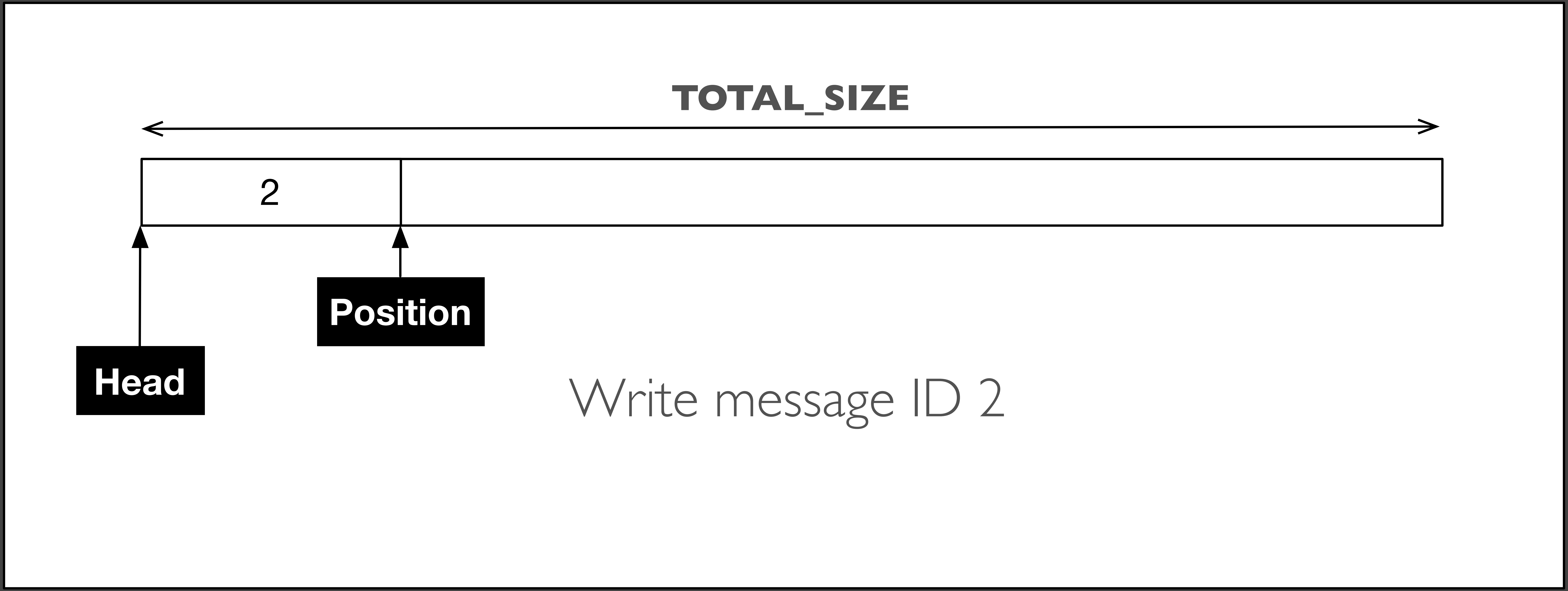
MESSAGE PACKING



define message/packet length for example: 256

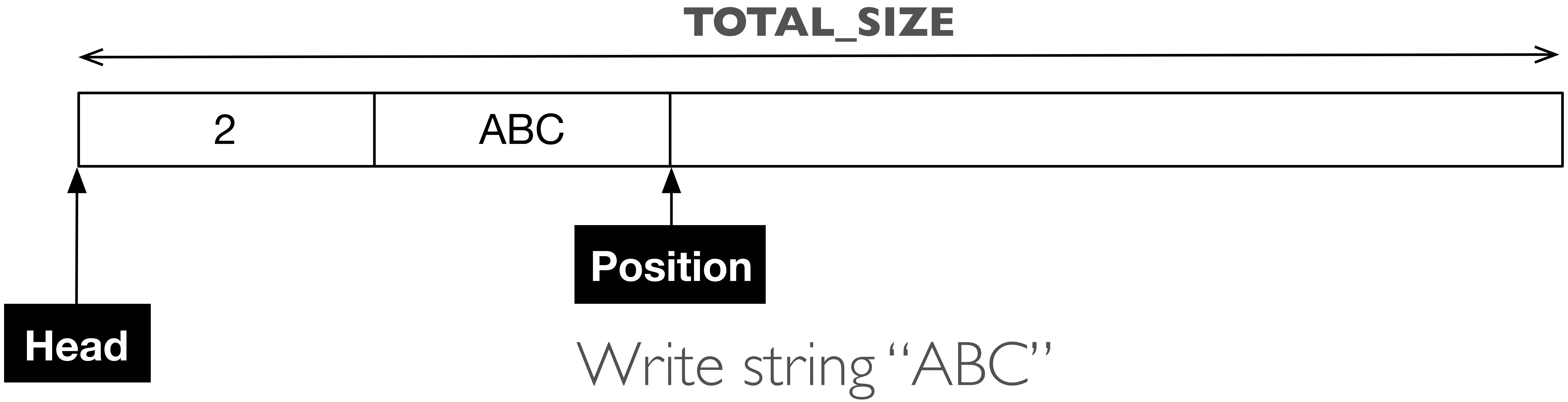
```
byte[] bytes = new byte[ TOTAL_SIZE ];
```

MESSAGE PACKING



Write message ID 2

MESSAGE PACKING



TOTAL_SIZE

2

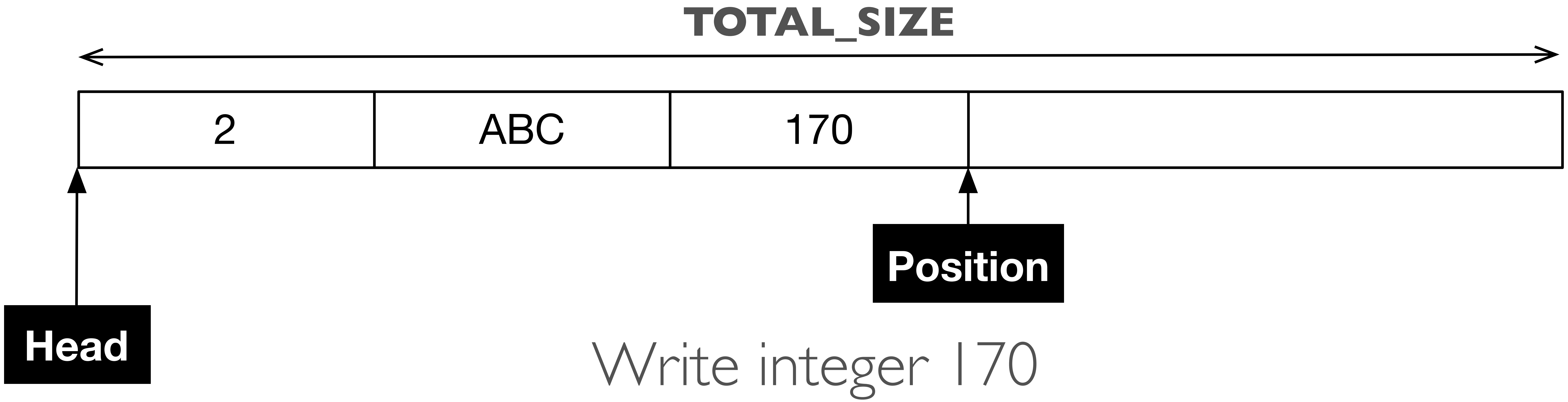
ABC

Position

Head

Write string “ABC”

MESSAGE PACKING



TOTAL_SIZE

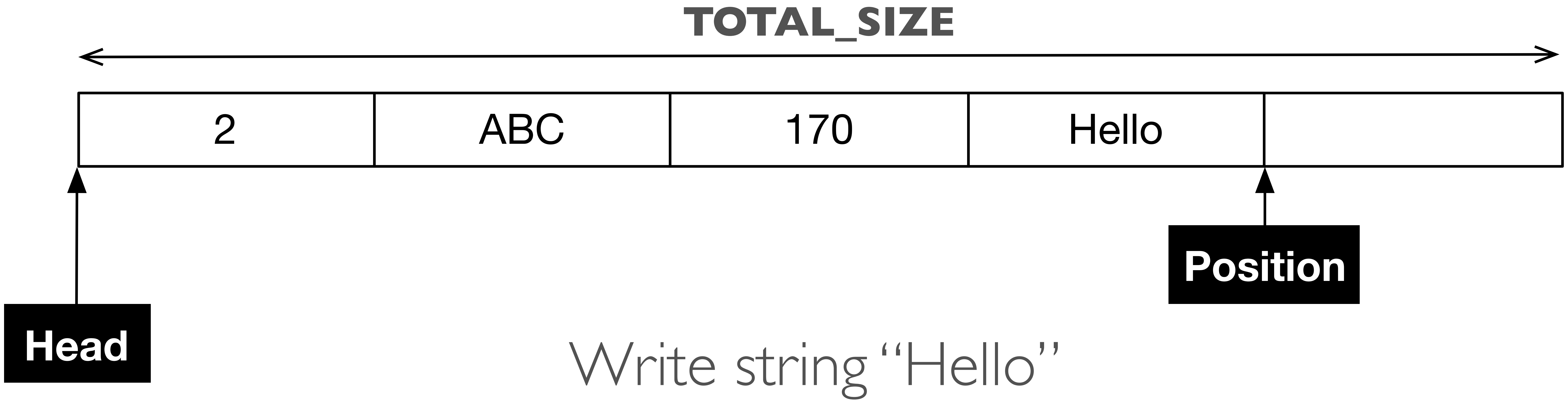
2	ABC	170	

Head

Position

Write integer 170

MESSAGE PACKING



TOTAL_SIZE

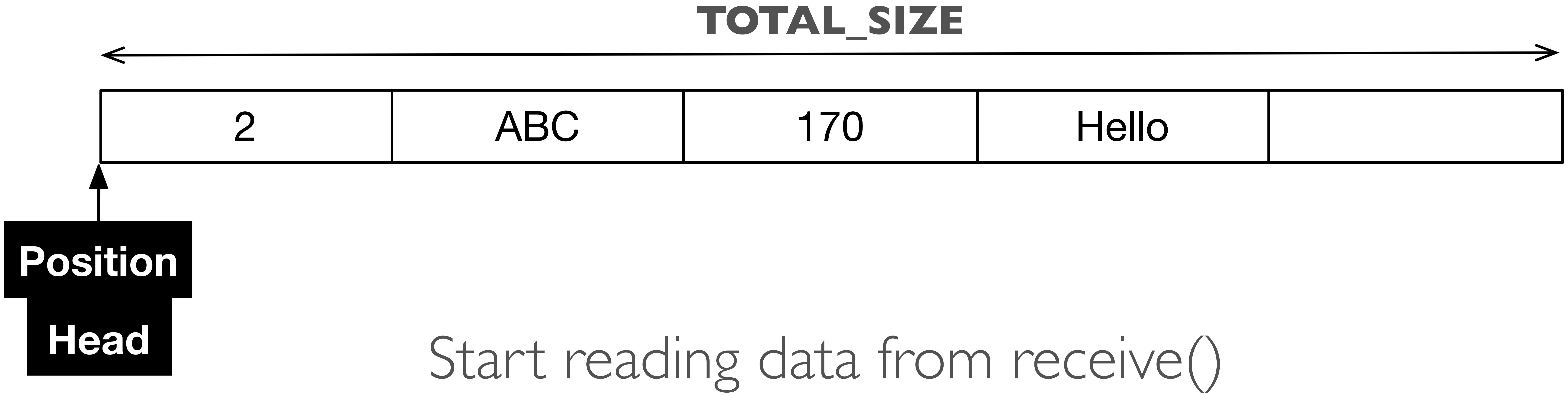
2	ABC	170	Hello	

Head

Position

Write string “Hello”

MESSAGE UNPACKING



TOTAL_SIZE

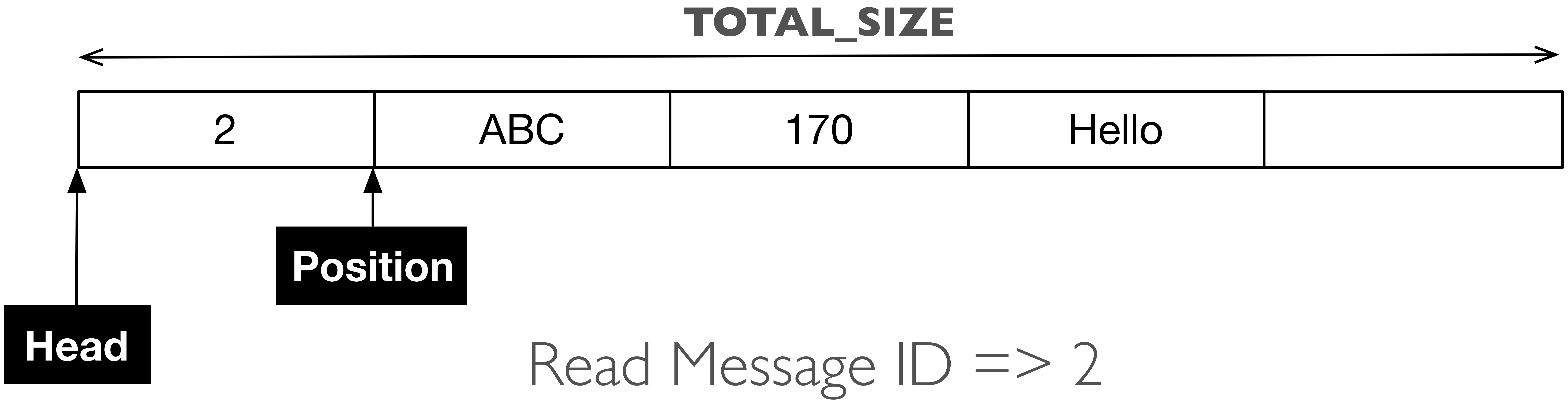
2	ABC	170	Hello	

Position

Head

Start reading data from receive()

MESSAGE UNPACKING



TOTAL_SIZE

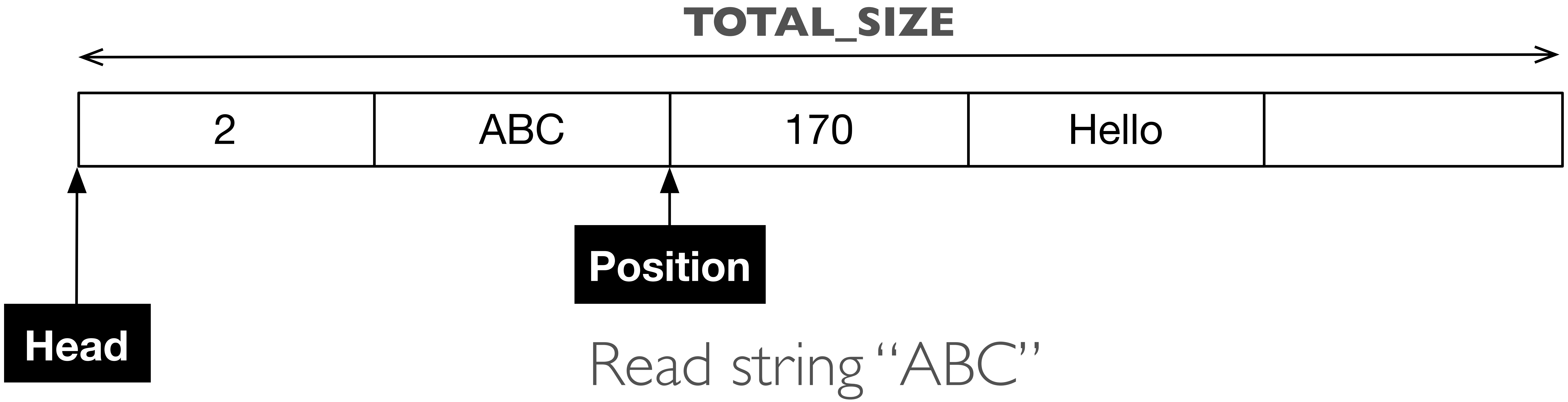
2	ABC	170	Hello	

Position

Head

Read Message ID => 2

MESSAGE UNPACKING



TOTAL_SIZE

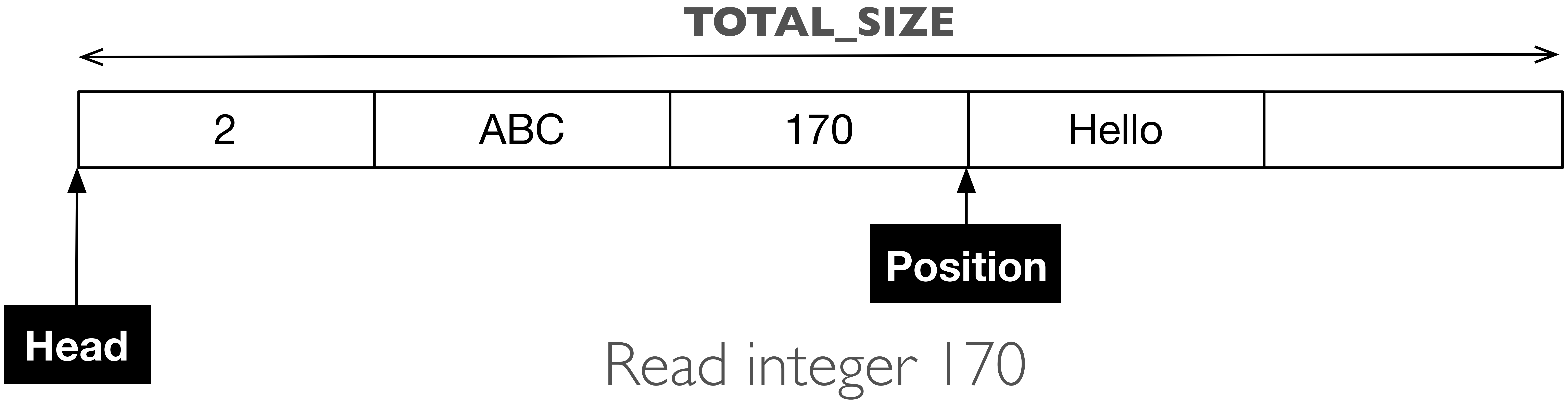
2	ABC	170	Hello	

Position

Head

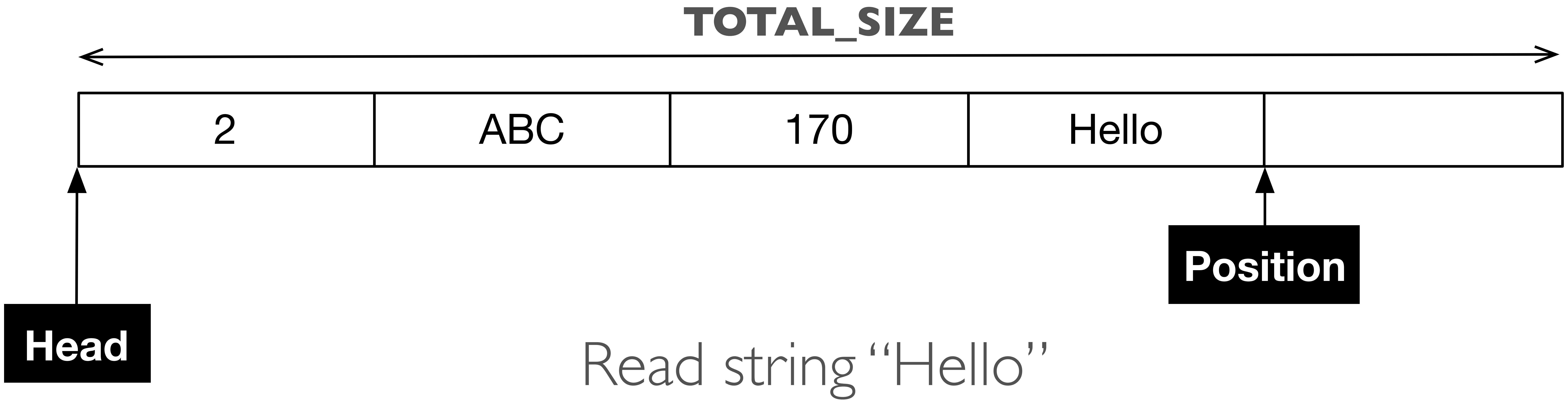
Read string "ABC"

MESSAGE UNPACKING



Read integer 170

MESSAGE UNPACKING



TOTAL_SIZE

2	ABC	170	Hello	

Position

Head

Read string “Hello”

6a
packing data &
converter to big-endian order

練習15分鐘

MORE ABOUT MESSAGE PACKING / UNPACKING

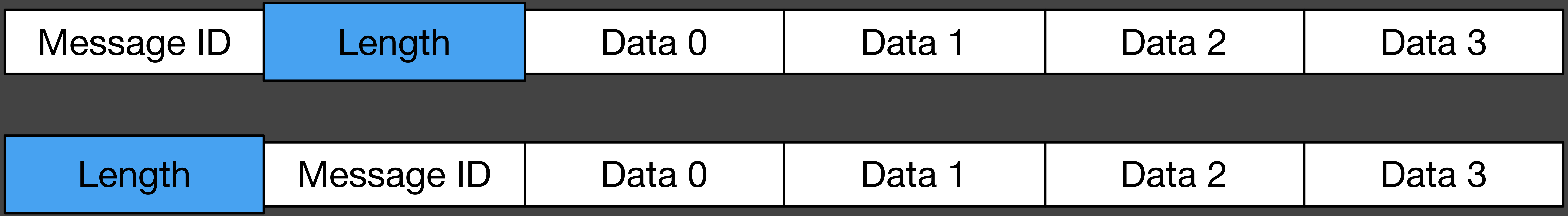
Message 1	Message 2	Message 3	Message 4

There’s different meaning in

Logic “Message” and “Network Packet”

We might also need to know how many messages in a packet

Length?



Message ID	Length	Data 0	Data 1	Data 2	Data 3
Length	Message ID	Data 0	Data 1	Data 2	Data 3

We usually need “Length”

to indicate how long the message is

EXERCISE 1

1. Unpacking data
2. Converter from big-endian order
3. Add Length to package

完成 // TODO 的區塊

Length ?	Message ID	Data 0	Data 1	Data 2	Data 3

https://github.com/ispan-umvr09/chat-room/tree/feature/exercise1

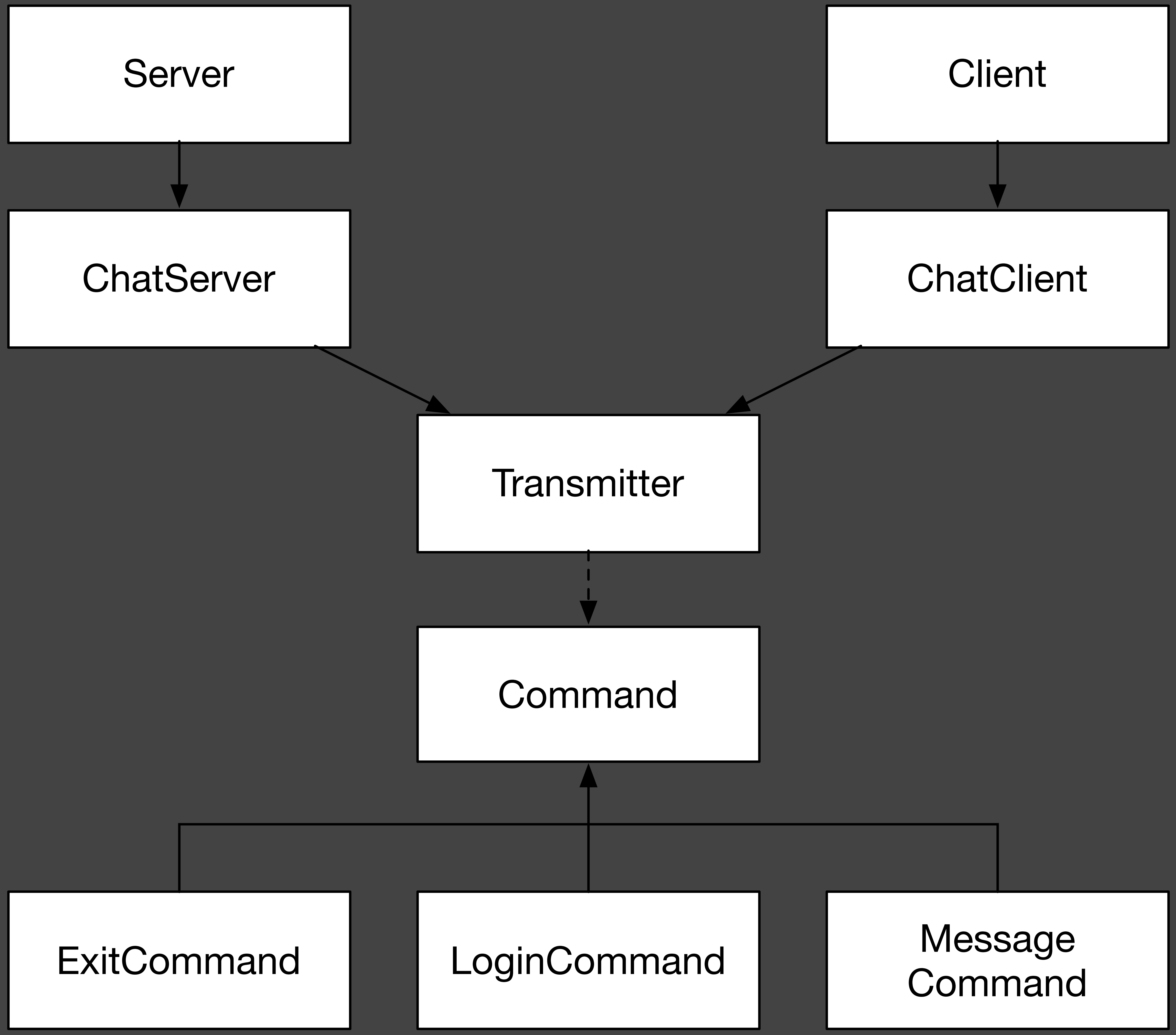
Switch Protocol to

Struct/Buffer format

or

JSON format

Switch Protocol to Struct/Buffer format



6b
extract Command series class

練習10分鐘

6c
extract Transmitter class

練習10分鐘

6d
add exit command

練習 10分鐘

6e
add OnMessage delegate for unity

練習10分鐘