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Date 11/26/2024

“Marie's Sender And Receiver Full code”

Both Marie Marie's Sender and Receiver Full code script can be implemented In MARIE simulator in following website <https://marie.js.org/>

Sender Code:

Input / Read first byte

Store Byte1 / Store in memory location Byte1

Input / Read second byte

Store Byte2 / Store in memory location Byte2

Input / Read third byte

Store Byte3 / Store in memory location Byte3

Input / Read fourth byte

Store Byte4 / Store in memory location Byte4

Load Byte1 / Load first byte

Add Byte2 / Add second byte

Add Byte3 / Add third byte

Add Byte4 / Add fourth byte

Store Sum / Store the sum in memory

Load Zero / Load 0 into the accumulator

Subt Sum / Subtract the sum to get 1's complement

Add AddOne / Add 1 to get 2's complement

Store Checksum / Store the checksum

Output / Output the checksum

Halt / End the program

Byte1, DEC 0

Byte2, DEC 0

Byte3, DEC 0

Byte4, DEC 0

Sum, DEC 0

Checksum, DEC 0

Zero, DEC 0

AddOne, DEC 1

Receiver Code:

Input / Read first byte

Store Byte1 / Store in memory location Byte1

Input / Read second byte

Store Byte2 / Store in memory location Byte2

Input / Read third byte

Store Byte3 / Store in memory location Byte3

Input / Read fourth byte

Store Byte4 / Store in memory location Byte4

Input / Read checksum byte

Store Checksum / Store in memory location Checksum

Load Byte1 / Load first byte

Add Byte2 / Add second byte

Add Byte3 / Add third byte

Add Byte4 / Add fourth byte

Subt Checksum / Subtract checksum from the total

Store Sum / Store the result (Sum)

Load Sum / Check if sum is zero

Skipcond 400 / Skip next instruction if AC == 0 (Sum == 0)

Jump Error / If not zero, jump to Error

Load ValidMsg / Load "Data is valid" message code

Output / Output message

Halt / End the program

Error, Load ErrorMsg / Load "Error" message code

Output / Output message

Halt / End the program

Byte1, DEC 0

Byte2, DEC 0

Byte3, DEC 0

Byte4, DEC 0

Checksum, DEC 0

Sum, DEC 0

ValidMsg, DEC 1 / Code for "Data is valid"

ErrorMsg, DEC 2 / Code for "Error: Retransmit Data"
