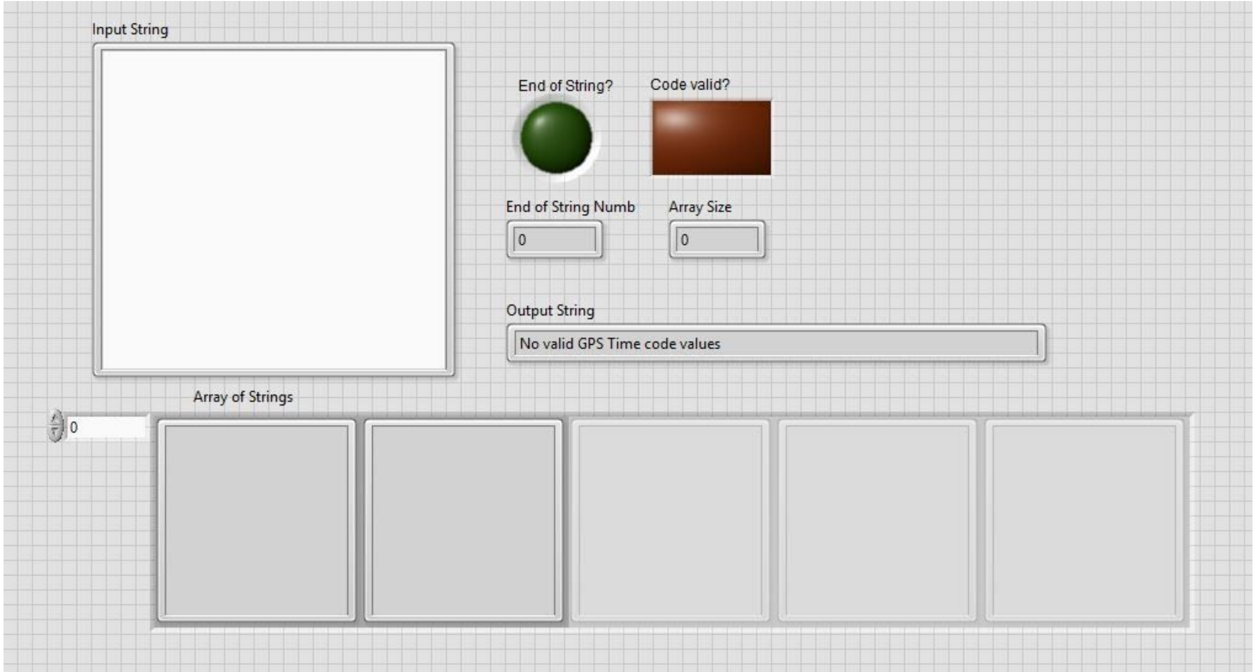


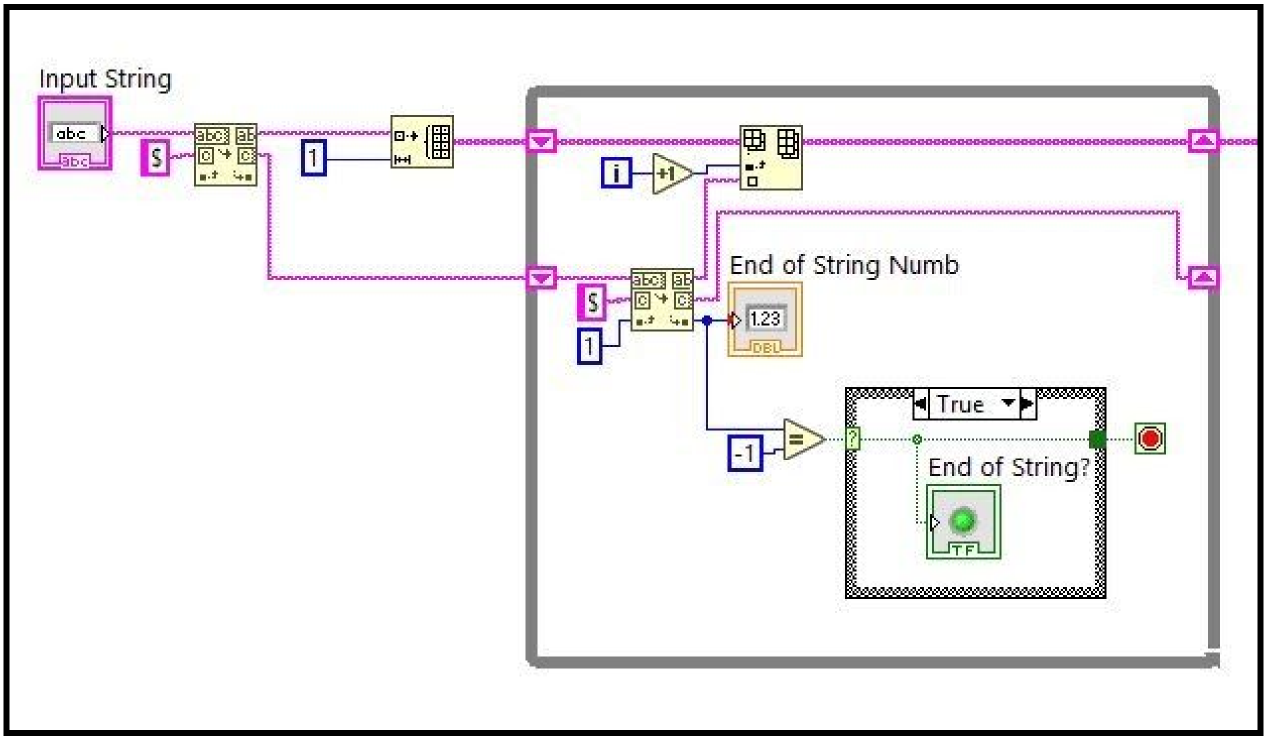
End of String Numb: 0

Array Size: 0

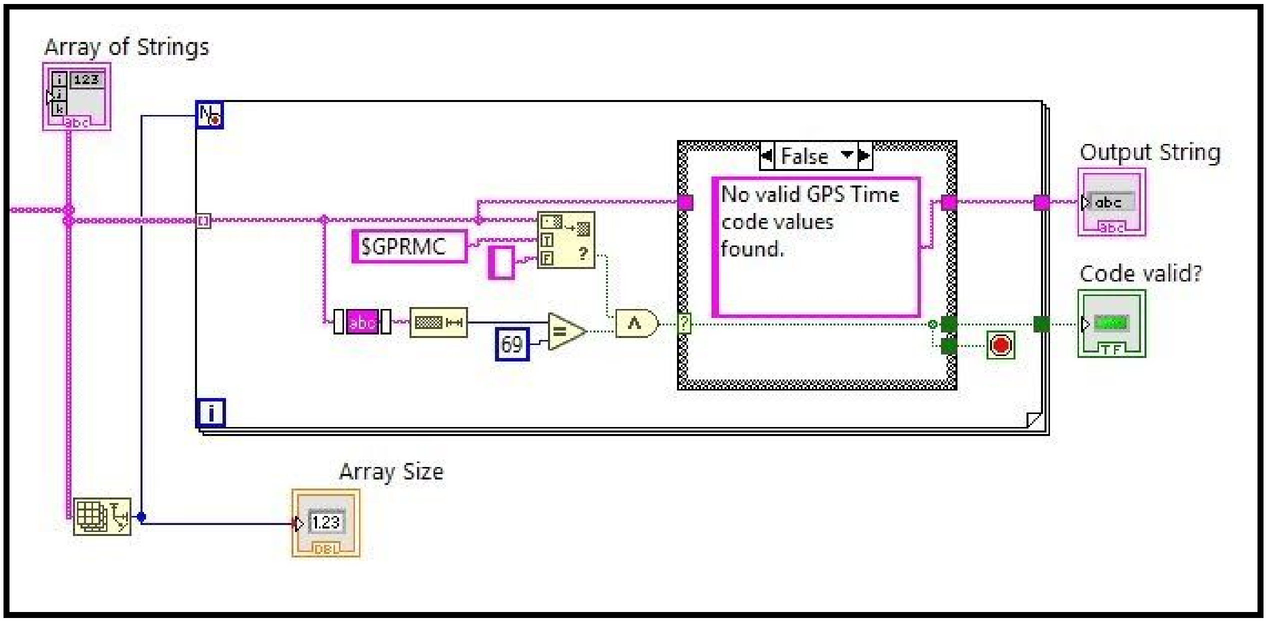
Output String: No valid GPS Time code values

Array of Strings index: 0

The VI 39 GPS Array to String has a slightly misleading title. Inputted to the VI is in fact, a string, the string being the combination of all of the GPS time codes that were collected. This string is split into individual strings in an array, starting with the $ symbol. 39 GPS Array to String parses through the array to find a valid GPS string and either outputs that string, or returns a false, indicating that the VI 35 NEW GPS Interrupt RS232 Read must be run again.



The VI starts by receiving the input GPS codes. The string is split at a $ sign where anything before the $ is sent to initialize array, and the rest of the string is sent to the while loop. Once the while loop starts, the string is again split at a $ sign. The string before the match is appended to the array, and the array is sent back to the start of the loop via a Shift Register. To ensure that the array isn't over written, the string is appended to the array at the index of the Loop Iteration plus 1. The string at the match is also returned to the while loop via a Shift register. Once the string is split and there is no string after the match, the Split String function returns -1, which ends the while loop.



The second portion of the VI takes the array and outputs the array itself and the size. The size of the array is sent to the next For Loop as the amount of iterations. The For Loop starts by taking one of the array strings. The string is sent to a Match True/False String function, which returns True if the string contains the characters $GPRMC or False if it contains anything else. The string is also stripped of any whitespace, and the length of the string is found. If the length is equal to 69 characters, the boolean value from the Match True/False function is combined with the length equal boolean value with an AND gate to determine if the string is a valid GPS code. If it is, the For Loop is forced to end, and the string and a True boolean value are outputted. If the string is not valid, the loop restarts with the next array value until a valid code is found, or no code is found. If no code is found, 35 NEW GPS Interrupt RS232 Read starts over.