Matlab Workshop

FINAL PROJECT

ELECTRONICS, BIOMEDICAL, AEROSPACE

► You're required to make a bit stream (0,1)'s only of 2000 bit, then convert it to a USB protocol as follows:

► 1- add start byte to the stream (00000001)
2- Convert the data to the NRZI (Polar non return to zero), and this is done by changing the previous bit if the current bit is zero and keep the same value as long as the current bit is one, ex:00110101 will become 10001100
3-add bit stuffing (if there are 5 one's, follow it by a zero)
4-add 3 zeros every 32 bit (4bytes) to know that it's an end for a packet of 32 bit.

► After all these processes, check weather to total bits number is divisible by 32 or not, if not fill the last packet till the total number is divisible by 32.

► (a file named data.txt is uploaded with the slides so you can copy the data and paste it in an array)

► **Bonus**
instead of copying the bits, read the text file and after finishing it write in another new txt file with the new data stream.