Theory assignment 1 (15 marks):

Draw circuit diagram and write a code for rolling display of following text in a 7 digit (7 segment display).

1. Use the Freedom board pin configuration, and choose suitable IO pins
2. Use common anode 7-segment LED for drawing the circuit, and use 470ohm resistors. Clearly indicate which IO pins are used, how many are used.
3. The rolling display has to be the following (at a time, one row is displayed in the 7 digit display)

b	A	t	C	h		2
A	t	C	h		2	0
t	C	h		2	0	2
C	h		2	0	2	2
h		2	0	2	2	
	2	0	2	2		b
2	0	2	2		b	A
0	2	2		b	A	t
2	2		b	A	t	C
2		b	A	t	C	h
	b	A	t	C	h	

Then start again from Row-1

4. The full text should fade out (decrease in intensity), before the next shifted text is shown. Use the PWM functionality to control the intensity of all displays.
5. Write the full C code and submit it along with the circuit diagram. Give proper comments for the different regions of the code. (Note: starting a line with // will make the line commented in C, and will not execute the line)