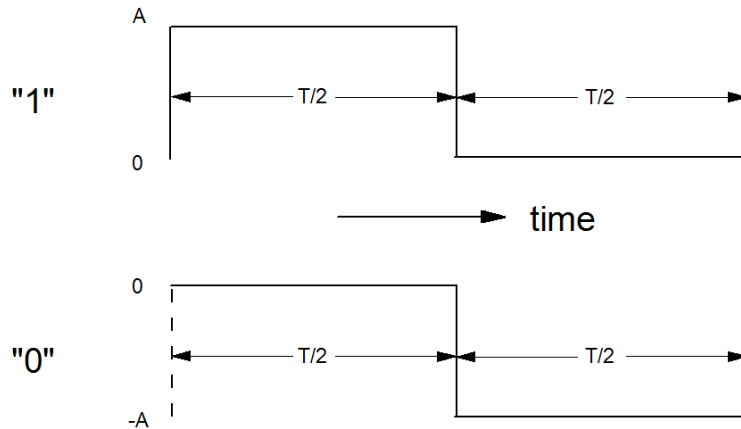


EE3101 Communication Engineering

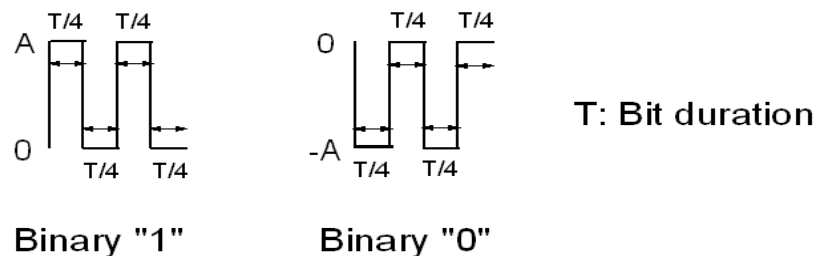
Tutorial 2

- (1) In power spectral density calculation as in section 1.2 of the lecture notes, what is the problem of using discrete impulses with separation T , amplitudes A and $-A$ to represent the following coded waveforms for “1” and “0” respectively?



Suggest a way to use discrete impulses to represent the above code waveforms for “1” and “0”.

- (2) Find the power spectral density of the following line coding.



- (3) (a) What is the storage capacity of a standard CD and DVD (single-layer)?
- (b) If a CD (VCD) and a DVD is able to deliver ~1hr and 2hrs movie respectively, (i) what is the corresponding data rate in Mb/s?; and (ii) what is the corresponding 1st null bandwidth if 8-level line coding is used?
- (4) (a) Use dB to represent the following S/N values:
(i) 2; (ii) 15; (iii) 150
- (b) What are the dB values if the above data are voltage gain?