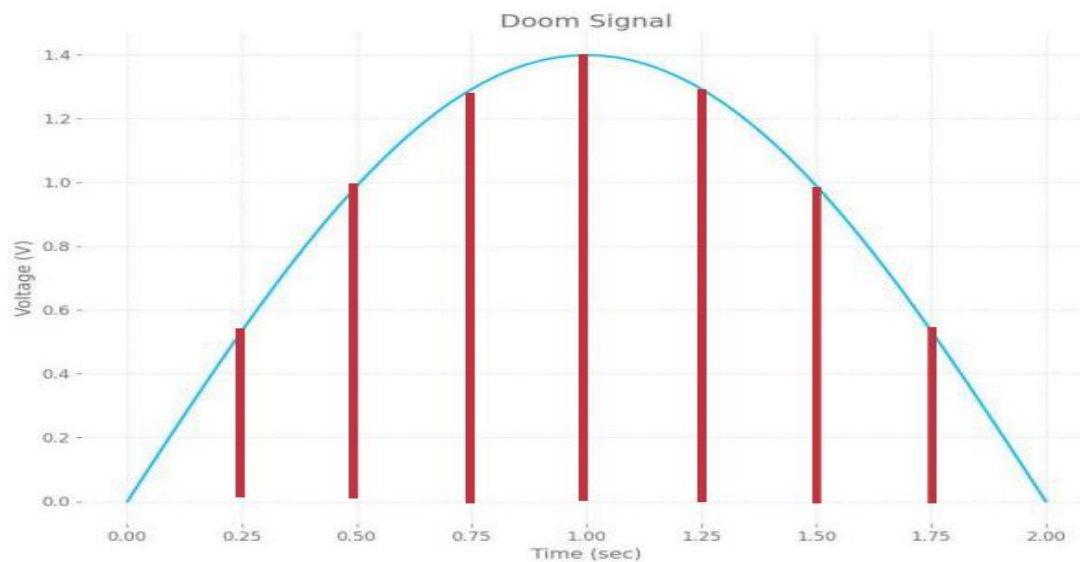


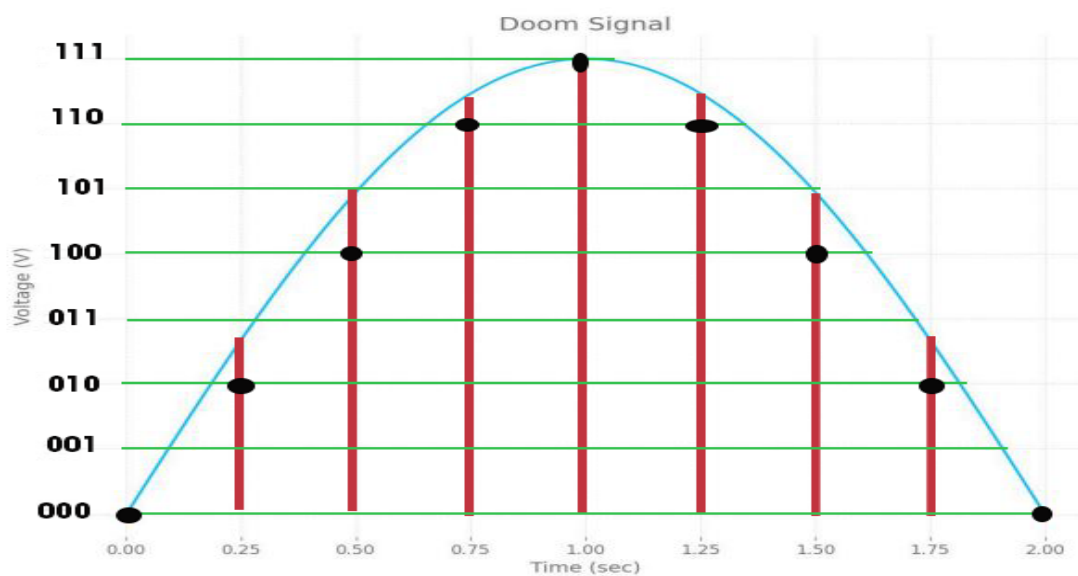
Task 5.2: Digital world:

3-bit encoder with Sampling Time = 0.25sec

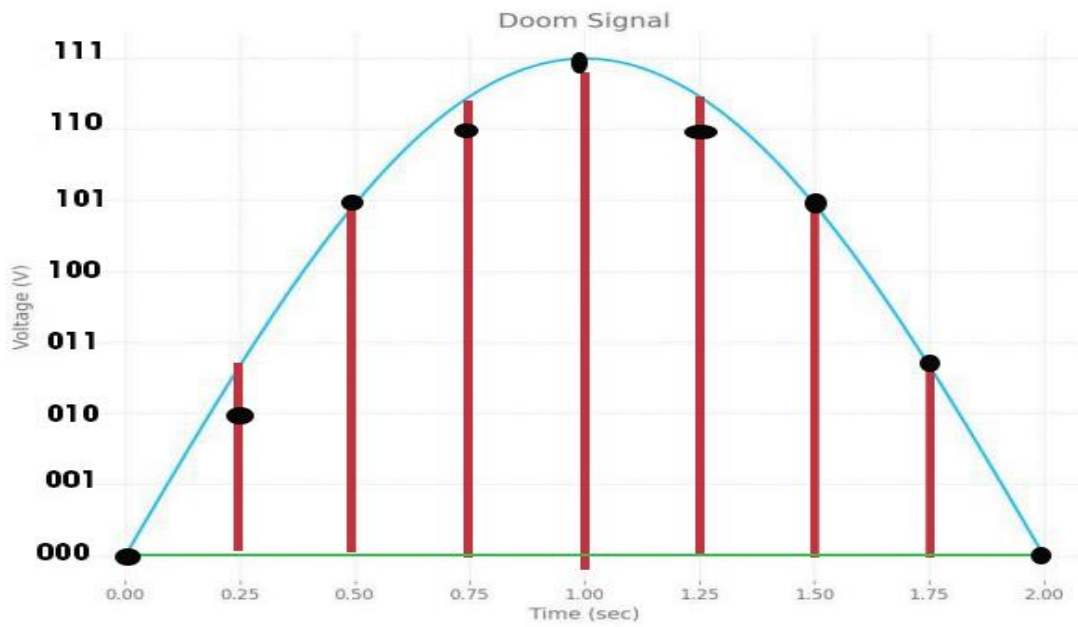
Sampling



Quantization



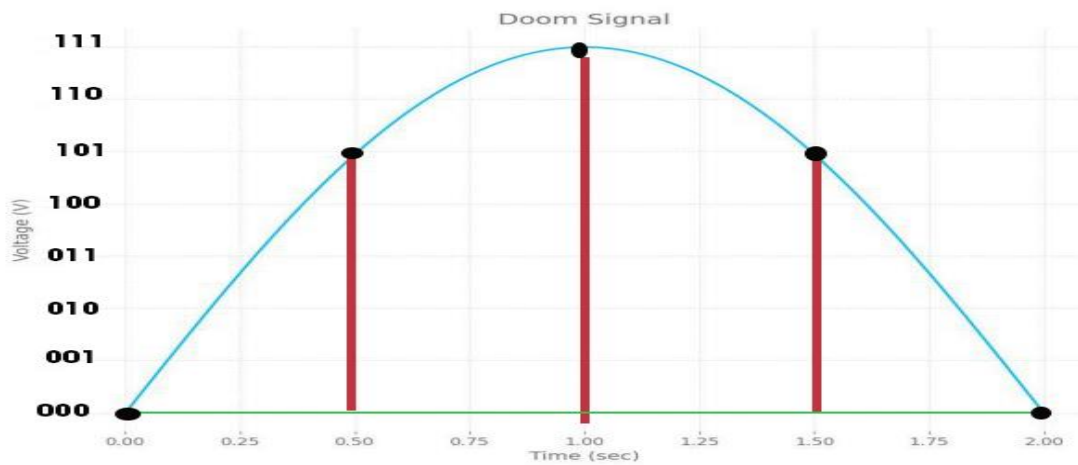
Coding



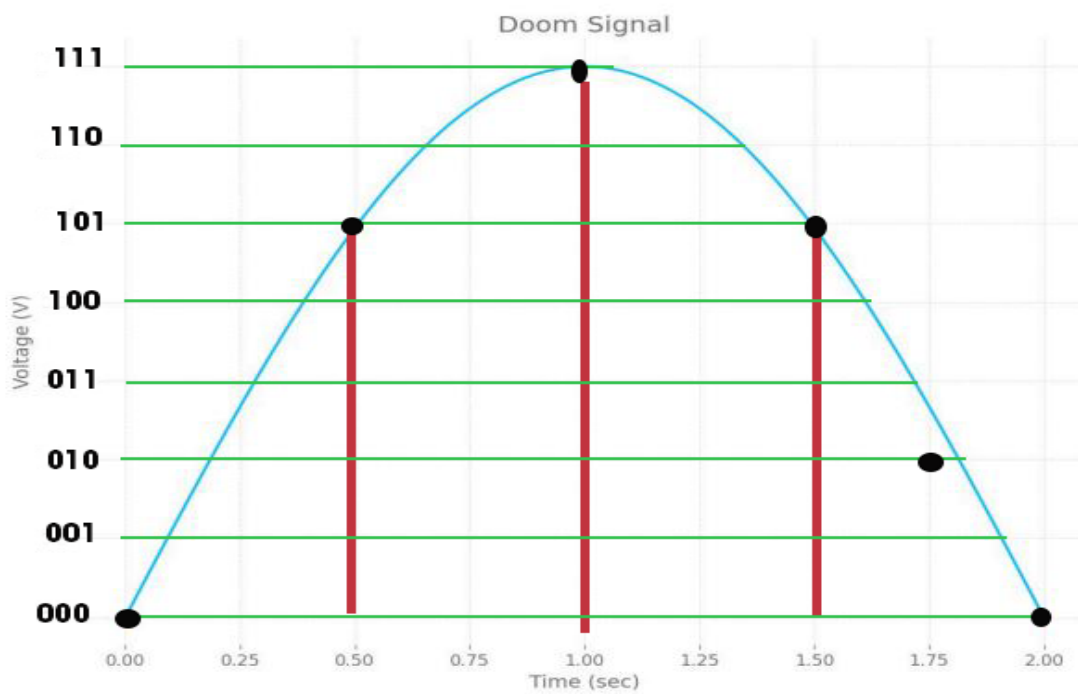
Bit sequence=000010101110111110101010000

3-bit encoder with Sampling Time = 0.5sec.

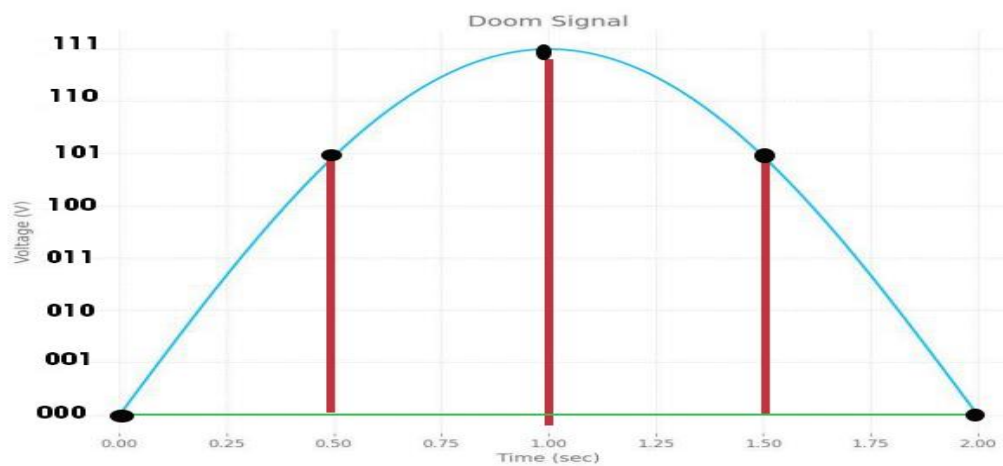
Sampling



Quantization



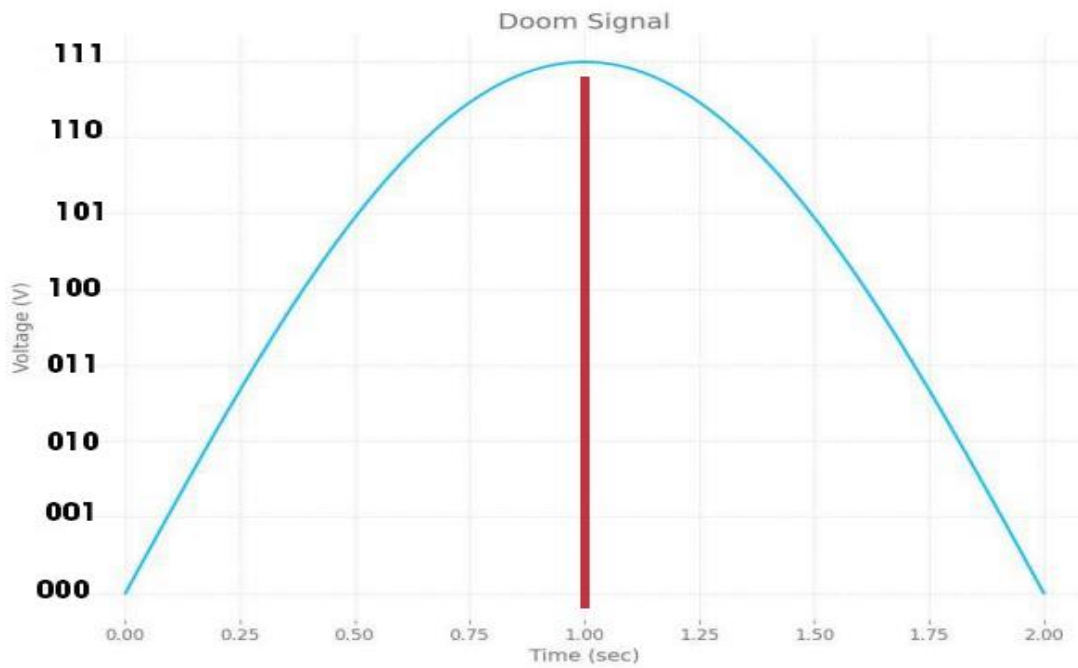
Coding



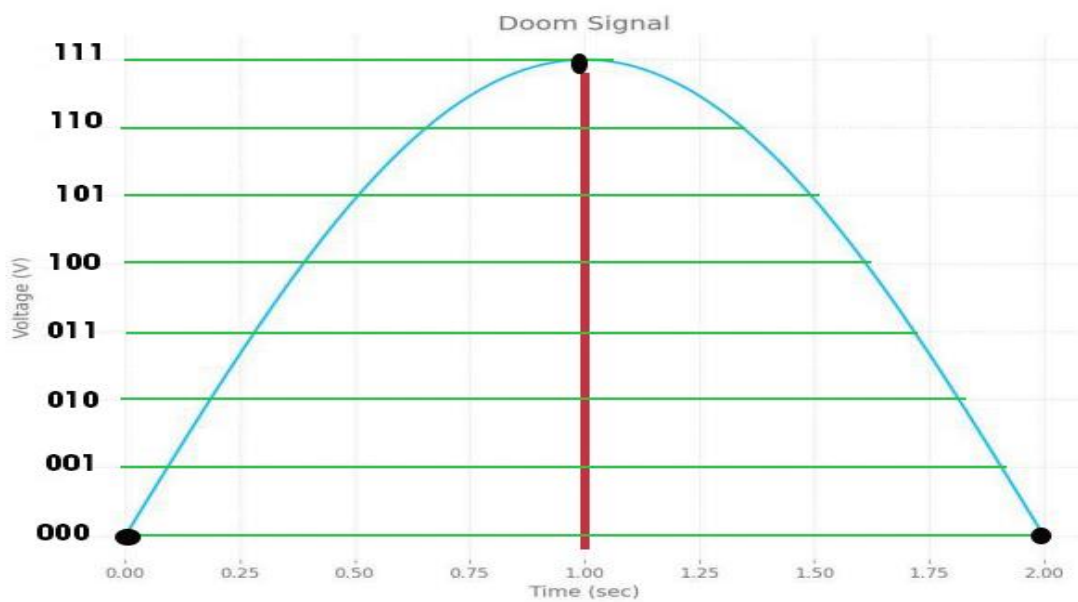
Bit sequence=000101111101000

3-bit encoder with Sampling Time = 1sec

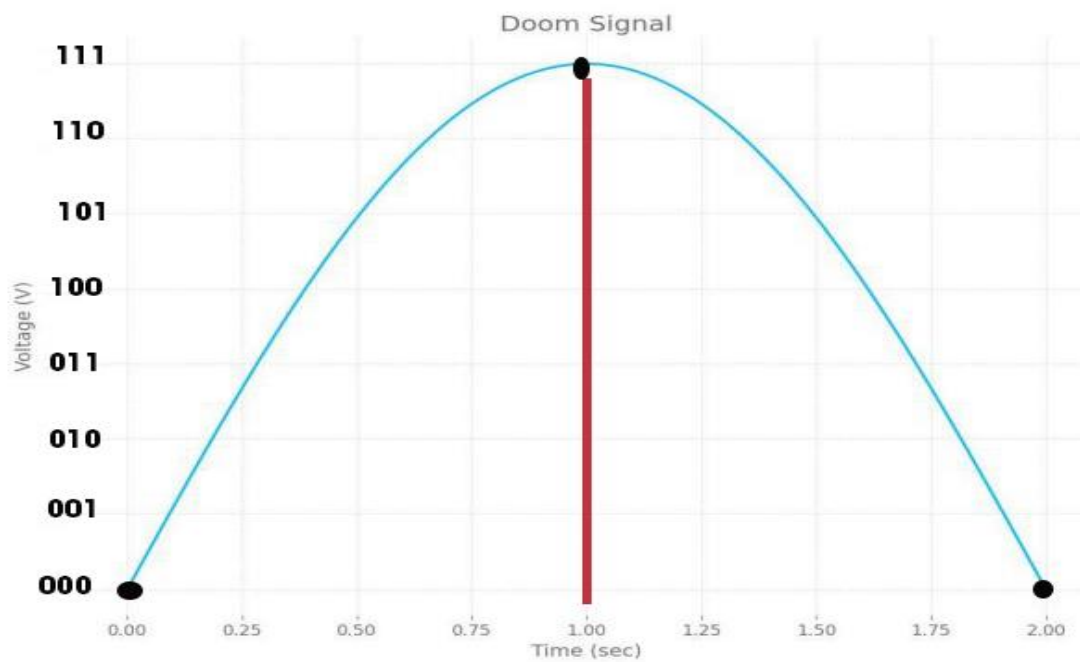
Sampling



Quantization



Coding

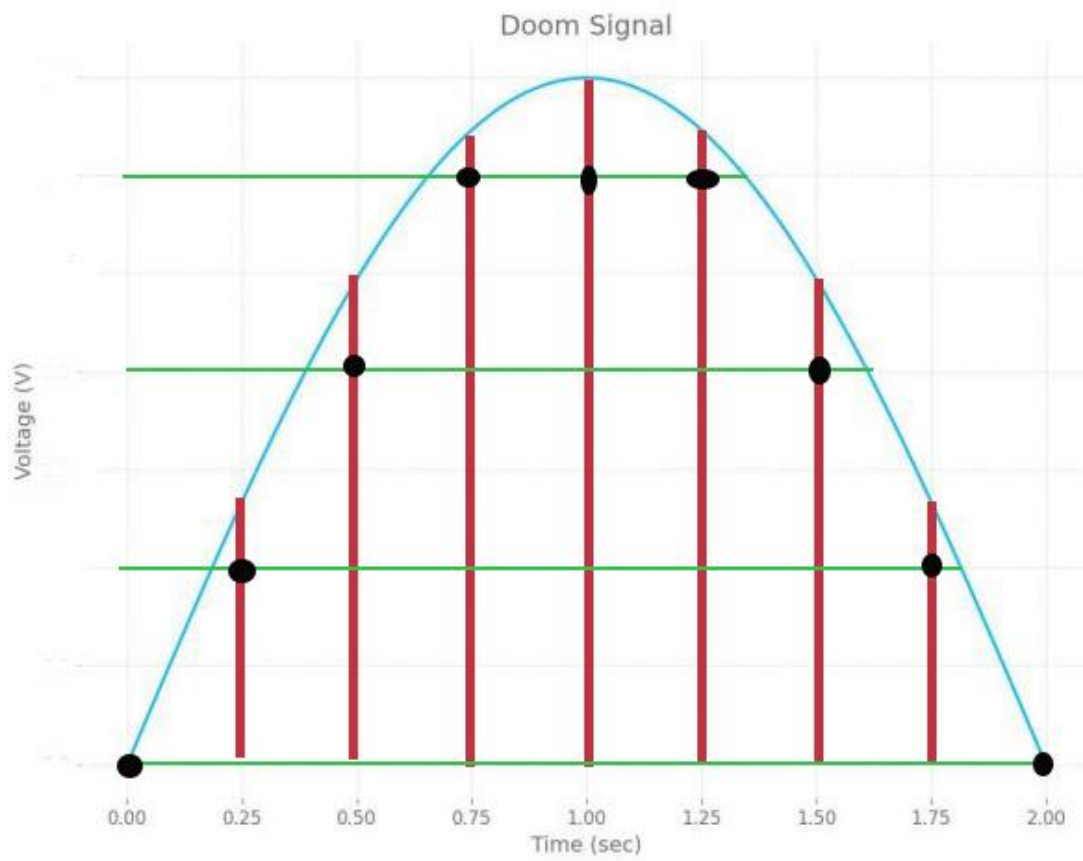


Bit sequence=000111000

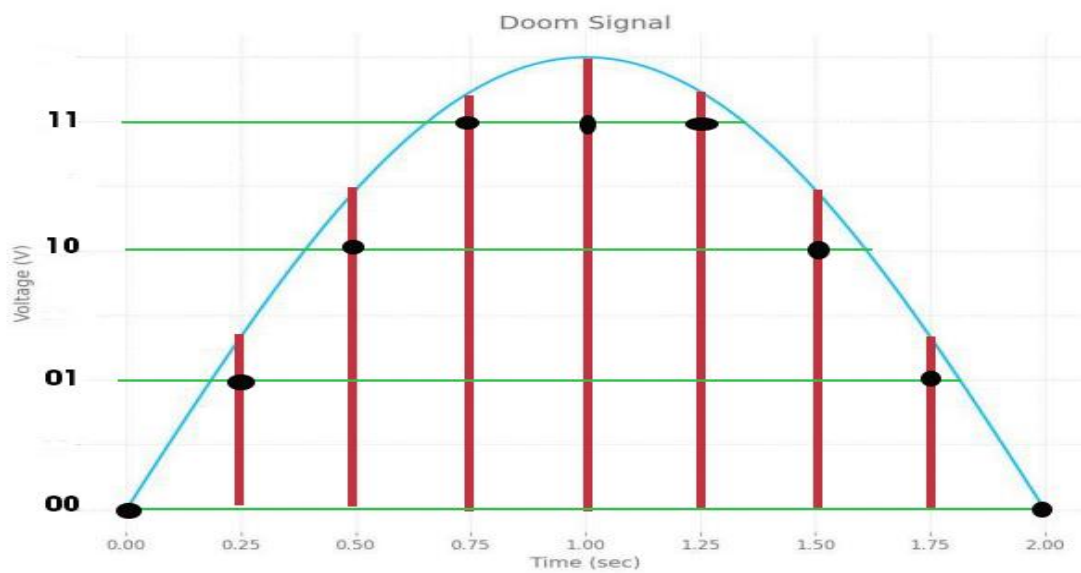
2-bit encoder with Sampling Time = 0.25sec.



Quantization



Coding



Bit sequence=00011011111100100

Conclusion:

1-when decrease sample time the accuracy increase and loss information decrease

2- Higher bit resolutions allow for finer quantization levels and increased signal fidelity. (level= 2^{bits})