Small Scale Project

**Shannon Capacity/ Highest possible bit rate**

Course Title : **Data Communications**

Course Code : CSE-350

Section : 03

Submitted To

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Date of Submission: 29-09-2020

#include<stdio.h>

#include<math.h>

int main()

{

unsigned long long int band\_width;

double s\_power=0,n\_power=0;

int N;

printf("Number of signal components: ");

scanf("%d",&N);

double s[100],n[100];

printf("Signal Power Noise Power \n");

for(int i=0; i<N; i++)

{

scanf("%lf %lf",&s[i],&n[i]);

s\_power=s\_power+s[i];

n\_power=n\_power+n[i];

}

double SN=s\_power/n\_power;

printf(" %lf \n",SN);

printf("Band Width: ");

scanf("%llu",&band\_width);

double C=band\_width\*log2(1+SN);

printf("\nC = %lf \n",C);

printf("C = %.4lf \a\n",C/1000000);

return 0;

}