Study of signal frequency, spectrum, bandwidth, bit rate, quantization using MATLAB.

Report 2

DATA COMMUNICATION [D]

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20-42595-1

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CODE:

```
%id - AB-CDEFG-H
%id - 20-42595-1


A1=51;
A2=29;
C=4;
F=1;
fs=40e3;
t=-0.01:1/fs:0.01;
x1=A1*cos(2*pi*(C*100)*t);
x2=A2*cos(2*pi*(F*100)*t);
x=x1+x2;
subplot(2,1,1)
xlabel ('Time (t)')
ylabel ('Amplitude (x)')
title ('Original Signal')
hold on
plot(t,x);
bandwith = obw(x,fs)
L = 6-1;
delta = (max(x)-min(x))/L;
i = round((x-min(x))/delta);
xq = min(x)+i.*delta;
subplot(2,1,2);
xlabel ('Time (t)')
ylabel ('Amplitude (x)')
title ('Quantized Signal')
hold on
stairs(t,xq)
```

OUTPUT:

```
bandwith = 348.2280
```