EC-223 Signals and Systems

BS(CE)-2k20

PROJECT REPORT

Submitted By:

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Course Title:	**EC-223 Signals and Systems 4(3+1)**
Batch / Semester:	Batch 2020 / 4th Semester
Instructor:	Engr. Kaynat Rana
Target PLO:	PLO 9:

Department of Computer Engineering

HITEC University Taxila

Implementation of Moving Averaging Filter using MATLAB

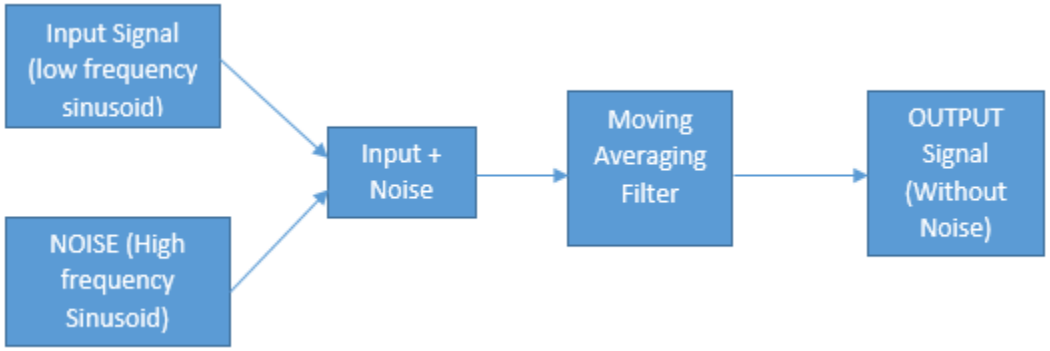
Objective:

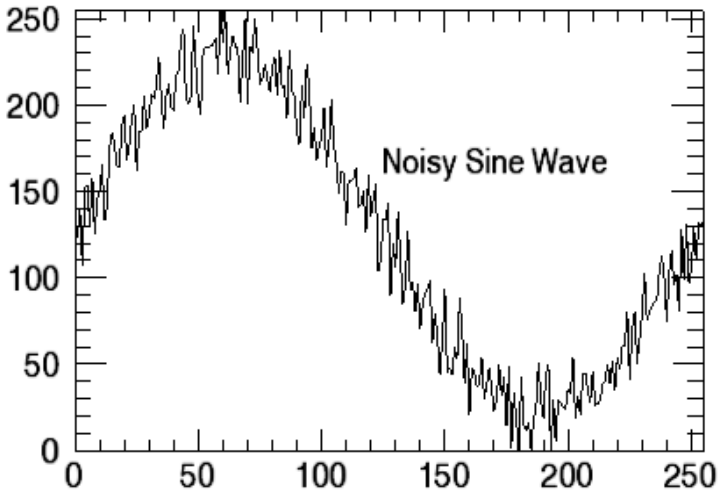
The objective of this project is to remove noise from a sinusoidal signal using an Average Moving Filter.

Software Used:

- **MATLAB**

Theory:

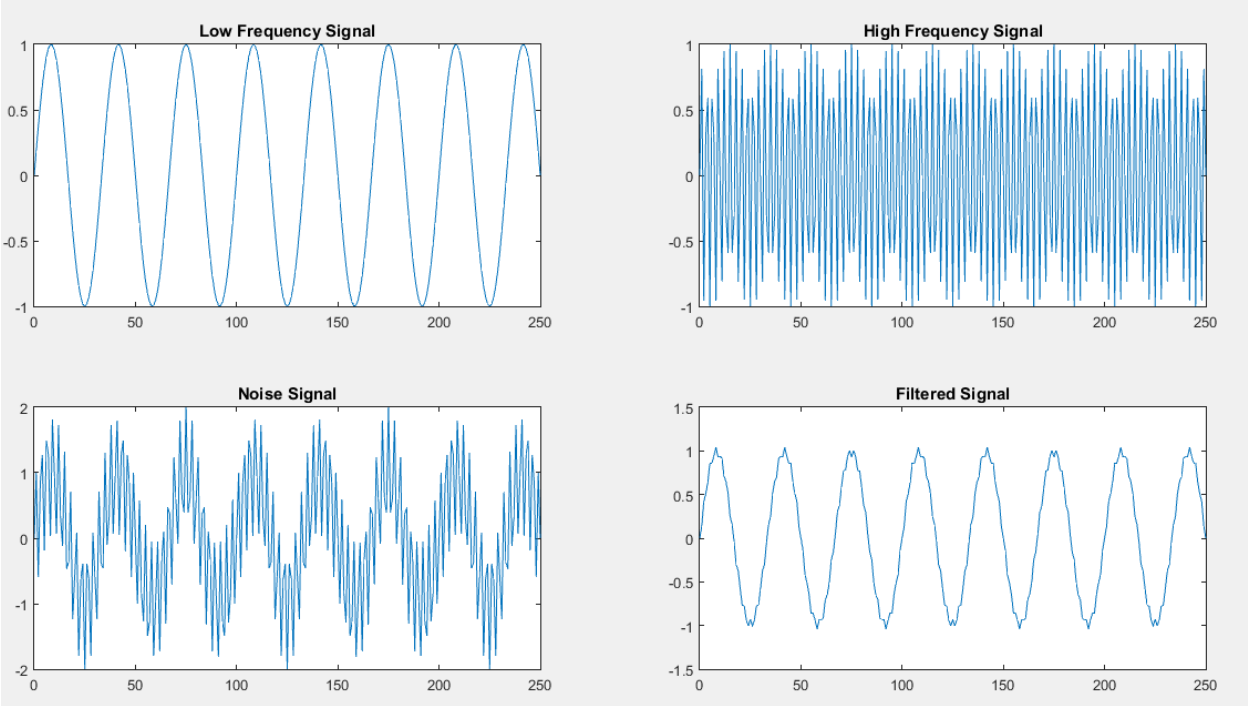




Code:

```
t=0:250;
[m,n]=size(t);

a=sin(2*pi*0.03*t);
b=sin(2*pi*0.35*t);
c=a+b;

out= zeros(m,n);


for i = 2:(n-1)
    out(i) = (c(i-1) + c(i) + c(i+1))/3;
end

subplot(221);
plot(t,a); title('Low Frequency Signal');
subplot(222);
plot(t,b); title('High Frequency Signal');
subplot(223);
plot(t,c); title('Noise Signal');
subplot(224);
plot(t,out); title('Filtered Signal');
```

Output:



Conclusion:

In this project, we have created 2 sin waves, one with low frequency and one with higher frequency. After combining the two waves, we get a noisy signal. We have used Average Moving Filter which takes mean of the signal at every time instance, hence filtering out the noise from the signal.