1.amplitude scaling

clc;

clear all;

close all;

x=input('enter the sequence x=')

n=input('the index of the sequence n=')

a=input('the scaling factor a =')

y=a.\*x;

subplot(2,1,1);

stem(n,x);

subplot(2,1,2);

stem(n,y);

time shifting

clc;

clear all;

close all;

x=input('enter the sequence x=')

n=input('the index of the sequence n=')

k=input('the shifting factor k =')

n1=n+k

subplot(2,1,1);

stem(n,x);

subplot(2,1,2);

stem(n1,x);

folding

clc;

clear all;

close all;

x=[1 2 3 4 2 -3 1]

n=[-2 1 0 1 2 3 4]

m=-fliplr(n);

y=fliplr(x);

subplot(2,1,1);

stem(n,x)

subplot(2,1,2);

stem(m,y);

sampling

x =

1 2 3 4 2 -3 1

n =

-2 1 0 1 2 3 4

>> x=[1 2 3 -1 2 3 4]

x =

1 2 3 -1 2 3 4

>> downsample(x,2)

ans =

1 3 2 4

>> upsample(x,2)

ans =

1 0 2 0 3 0 -1 0 2 0 3 0 4 0

>> upsample(x,3)

ans =

Columns 1 through 20

1 0 0 2 0 0 3 0 0 -1 0 0 2 0 0 3 0 0 4 0

Column 21

0

>> upsample(x,2,1)

ans =

0 1 0 2 0 3 0 -1 0 2 0 3 0 4

>> downsample(x,2,1)

ans =

2 -1 3

>> downsample(x,2,3)

Error using updownsample>parseUpDnSample (line 55)

Offset must be from 0 to N-1.

Error in updownsample (line 17)

phase = parseUpDnSample(str,N,varargin{:});

Error in downsample (line 33)

y = updownsample(x,N,'Down',varargin{:});

>> downsample(x,4,2)

ans =

3 4

>>ADDITION

>> x1=[4 3 2 -5 3 2 7 8]

x1 =

4 3 2 -5 3 2 7 8

>> n1=-3:4

n1 =

-3 -2 -1 0 1 2 3 4

>> x2=[3 -1 2 4 3 2 1 1 -2 -3 4]

x2 =

3 -1 2 4 3 2 1 1 -2 -3 4

>> n2=-5:5

n2 =

-5 -4 -3 -2 -1 0 1 2 3 4 5

>> x1(3)

ans =

2

>> x1(3)=-3

x1 =

4 3 -3 -5 3 2 7 8

>> x=x1+x2

Matrix dimensions must agree.

>> find(x1>2)

ans =

1 2 5 7 8

>> min(n1),min(n2):max(n1),max(n2)

ans =

-3

ans =

-5 -4 -3 -2 -1 0 1 2 3 4

ans =

5

>> y1=zeros(1,length(n))

y1 =

0 0 0 0 0 0 0

>> y2=y1

y2 =

0 0 0 0 0 0 0

>> find(n>=(min(n1)))

ans =

1 2 3 4 5 6 7

>>