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3.1

```
dconvdemo
```

```
Error using evalin
Undefined function 'Lab5' for input arguments of type 'char'.
```

Answer questions and attach screenshots in the Lab Report

3.2

```
clc;clear;close all
load echart.mat

bdiffh = [1, -1];

imshow(echart)
m = 65; % 147, 221
yy1 = conv( echart(m,:), bdiffh );
```

Plot the input and output in the same figure using subplot

```
subplot(2,1,1);
imshow(echart);
nn = 1: length(echart(m,:));

% subplot(2,1,2);
% stem(nn - 1, echart(m,:));
```

```
% mm = 1: length(yy1);

subplot(2,1,2)
stem(yy1)
```

Find the width of "E"

Find the length of a dense cluster of rises and drops in the filtered response.

```
find(yy1)
```

3.3.2

```
clc;clear;close all
```

Part a

```
xx = 255*(rem(1:159,30)>19);
bb = [1, -1];
yy = firfilt(bb, xx);

% Plot x and y using subplot
subplot(2, 1 ,1 );
plot(xx);
subplot(2, 1, 2);
plot(yy);
```

Part b

Explain the effect of the first-difference operator on this input signal.% The operator finds the rises and drops and uses a 1 to indicate a rise and a -1 to indicate a drop.

Part c

Find length of xx and yy xx is 159 long and yy is 160 long

```
% How are they related?
%Y signal is longer because it is convolved with a signla of length 2 and
%have boundary cases making it slightly longer.
```

Part d: find the edges

```
threshold = 100;
d = abs(yy) > threshold;
```

Part e: find edges indices

```
edge_index = find(d);
num_edges = length(edge_index);
```

3.4

```
dltidemo
```

Answer questions and attach GUI screenshots for the lab report

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