DSP2 Week 9 experiment Report

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EXERCISE 1 – a,b

Attached a file (my_fft.m)

EXERCISE 1 - c

(Source Code)

```
Exercise 1 - c

a = ones(64,1);
[y, count] = my_fft(a)
num_of_mult_in_DFT = 64 * (log(64)/log(2))
```

(Result)

```
count = 384
num_of_mult_in_DFT = 384
```

Exercise 2

a) (Source Code)

```
Exercise 2

n = (0:511)'
x = cos(pi/20.*n) + 3*cos(pi/12.*n)

X1 = my_fft(x)
X2 = fft(x)

magX1 = abs(X1);
magX2 = abs(X2);
angX1 = angle(X1);
angX2 = angle(X2);
```

```
15      subplot(2,2,1);
16      plot(n, magX1);
17      xlabel('k-index');
18      ylabel('Magnitude of X1');
19
20      subplot(2,2,2);
21      plot(n, magX2);
22      xlabel('k-index');
23      ylabel('Magnitude of X2');
24
25      subplot(2,2,3);
26      plot(n, angX1);
27      xlabel('k-index');
28      ylabel('Angle of X1');
29
30      subplot(2,2,4);
31      plot(n, angX2);
32      xlabel('k-index');
33      ylabel('Angle of X2');
```

(Result)