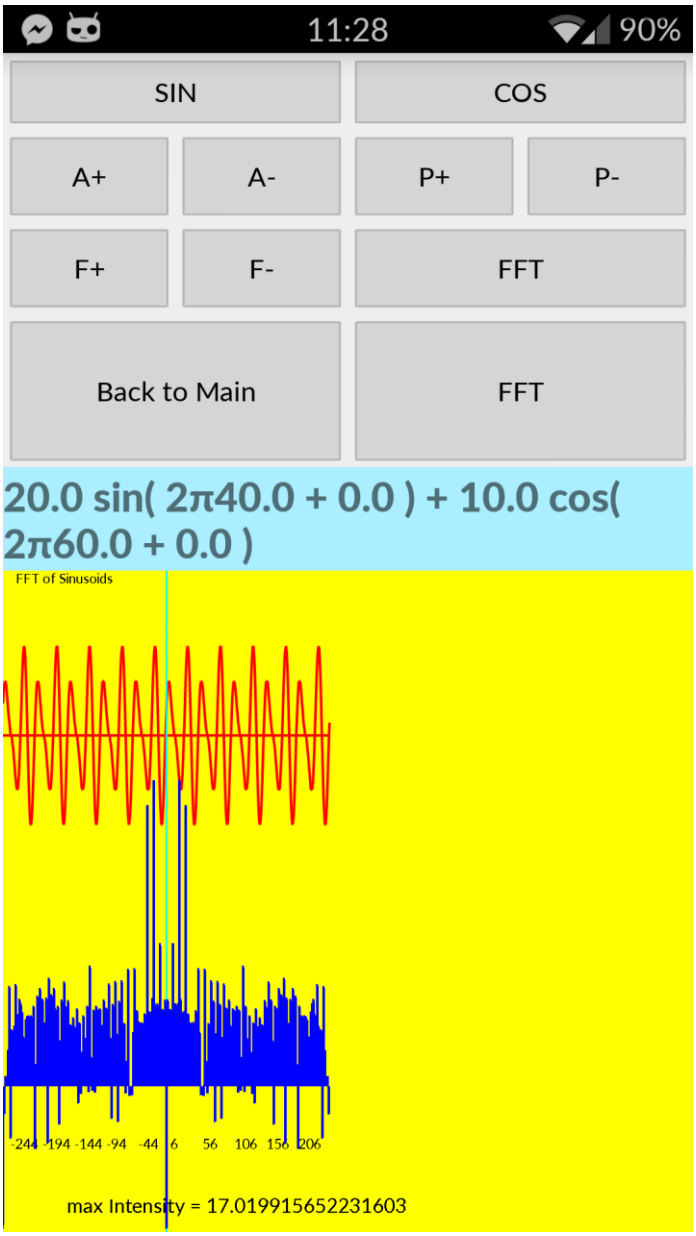
11:28
90%
SIN
COS
A+
A-
P+
P-
F+
F-
FFT
Back to Main
FFT
20.0 sin(2π40.0 + 0.0) + 10.0 cos(2π60.0 + 0.0)
FFT of Sinusoids
-244 -194 -144 -94 -44 6 56 106 156 206
max Intensity = 17.019915652231603

(i) In each of the above composite functions, comment on the position of the peaks of the frequency plot. *(hint: identify the frequencies from the above functions, and through visual inspection, qualitatively describe the distances of the respective peaks in the frequency plot from the vertical central (cyan) line of the plot.)*

	Sin F	Cos A	Sin P	Cos P	Peak Position
a	40	10	0	0	Compared to the original function, only the **second highest (and second furthest) peak moves further away** from the central line, due to increment of cos frequency, which has the lower amplitude.
b	**80**	10	0	0	Compared to function a, only the **highest (and closest) peak moves further away** from the central line, due to increment of sin frequency, which has the higher amplitude.
~~c~~	~~80~~	~~10~~	~~0~~	~~0~~	~~This function is the same as b.~~
d	80	10	**10**	**9**	Compared to function b, the two **highest lengths' peaks remain in the same position**, even though phases increased.
e	80	**30**	10	9	The **highest peak is no longer closest to the central line.** Now it is the second closest, as the amplitude of cos > amplitude of sin and frequency of cos > frequency of sin.

(ii) What is the effect of changing the amplitude on the frequency plot ?

If the amplitude of sin or cos is increased, its corresponding frequency peak will increase in height.

(iii) What is the effect of changing the phase on the frequency plot ?

Changing the phase has no effect on the positions of the peaks.

Screenshot of spectrogram activity