PCS WINTER 2019 MATLAB ASSIGNMENT 1

Solution 1:

Code :

```
def contconv(x1,x2,t1,t2,dt):
    out=[]
    time = []
    for i in range(0,len(x1)+len(x2)):
        time.append(t1+t2+i*dt)
        var = 0
        for j in range(0,len(x1)+len(x2)):
            if (j in range(0,len(x1)) and i-j in range(0,len(x2))):
                var+=x1[j]*x2[i-j]
        out.append(var)
    out = dt*np.array(out)
    return [out,time]
```

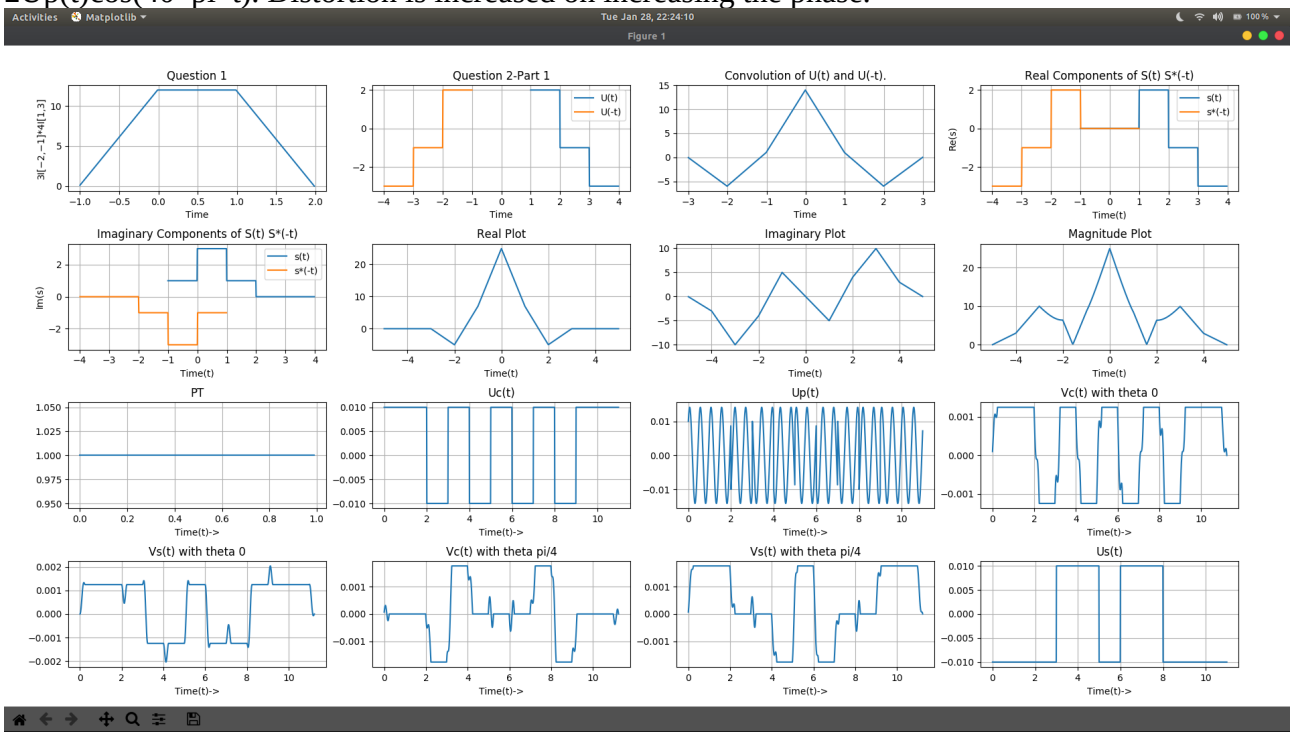
Explanation:
In the expression of convolution, t is varying from 0 to certain number to have contritbution of each index.Intersection of area in convolution starts from t1+t2 where t1 and t2 are starting time of timelimited signals goes upto t1+t2+l1+l2 where l1 and l2 are the length of respective arrays.

Solution 2:

In convolution of u(t) and u(-t) peak occur at t = 0.
In magnitude plot of convolution of s(t) and s*(-t) peak occur at t =0.

Solution 3:

A realisation of values of Uc(t) at different interval can be made from the values of 2Up(t)cos(40*pi*t). Distortion is increased on increasing the phase.



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