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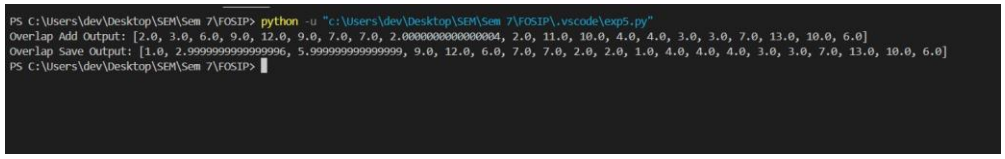
Experiment 5	
AIm:	To perform filtering of Long Data Sequence using Overlap Add Method and Overlap Save Method.
Objective:	To Develop a function to implement Fast Overlap Add Algorithm and Overlap Save Algorithm
Input Specifications:	1. Length of first Signal L and Signal values 2. Length of impulse response of FIR filter Signal M and Signal values.
Problem Definition:	Take long input sequence x[n] and short length sequence h[n] Find y[n] = x[n] * h[n] using FFT based Overlap Add Algorithm and Overlap Save Algorithm.
Experiment and Analysis:	 Input: x[n] = {1, 2, 3, 4, 5, 6, 1, 0, 1, 1, 1, 3, 0, 1, 2, 3, 4, 6} h[n] = {1,1,1} Overlap Add Method For N=8, and M=3, Let L = 6 Then, x1[n]={1,2,3,4,5,6,0,0} x2[n] = {1,0,1,1,1,3,0,0} x3[n] = {0,1,2,3,4,6,0,0} Output: y[n] = {2.0, 3.0, 6.0, 9.0, 12.0, 9.0, 7.0, 7.0, 2.0000000000000004, 2.0, 11.0, 10.0, 4.0, 4.0, 3.0, 3.0, 7.0, 13.0, 10.0, 6.0} Overlap Save Method For N = 8 , and M = 3 Let L = 6 Then, x1[n]={0,0,1,2,3,4,5,6} x2[n]={5,6,1,0,1,1,1,3} x3[n] ={1,3,0,1,2,3,4,6} x4[n] ={4,6,0,0,0,0,0,0} Output: y[n] = {1.0, 2.9999999999999996, 5.999999999999999, 9.0, 12.0, 6.0, 7.0, 7.0, 2.0, 2.0, 1.0, 4.0, 4.0, 4.0, 3.0, 3.0, 7.0, 13.0, 10.0, 6.0}
Conclusion:	1. The Overlap-Add and Overlap-Save Method is an efficientpractical way to

	evaluate the discrete convolution of long input signal x[n] and finite length signal h[n]. 2. The Overlap-Add and Overlap-Save Method can be implemented using FIR filters and can not be implemented using IIR filters. 3. The Overlap-Add and Overlap-Save Method is a Block Processing Technique.