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% Name Lamin Jammeh  
% Class: EE417 Summer 2024  
% Lesson 10 HW Question 3  
% Group: Ron Kalin/ Lamin Jammeh  
% Project Description: The Testbench results are plotted to show the filtered and  
unfiltered signals  
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%Step1 define the TestBench result  
time = 10:10:100;  
Sample_in = [0, 1, 0, 10, 0, 1, 2, 8, 2, 1];  
FIR_out = [0, 0, 0, 0, 0, 7, 10, 70, 100, 7];  
  
%Step2 plot the TestBench results  
plot(time, Sample_in, 'LineWidth',2);  
hold on;  
plot(time, FIR_out, 'LineWidth',2);  
grid on;  
legend('Unfiltered Signal','Filtered Signal', 'Location','north');  
  
title('FIR_MAC Filtered vs Unfiltered Results');  
xticks(0:5:100);  
yticks(0:5:100);  
xlabel('time in nanoSec');  
ylabel('Signal values');  
hold off;
```