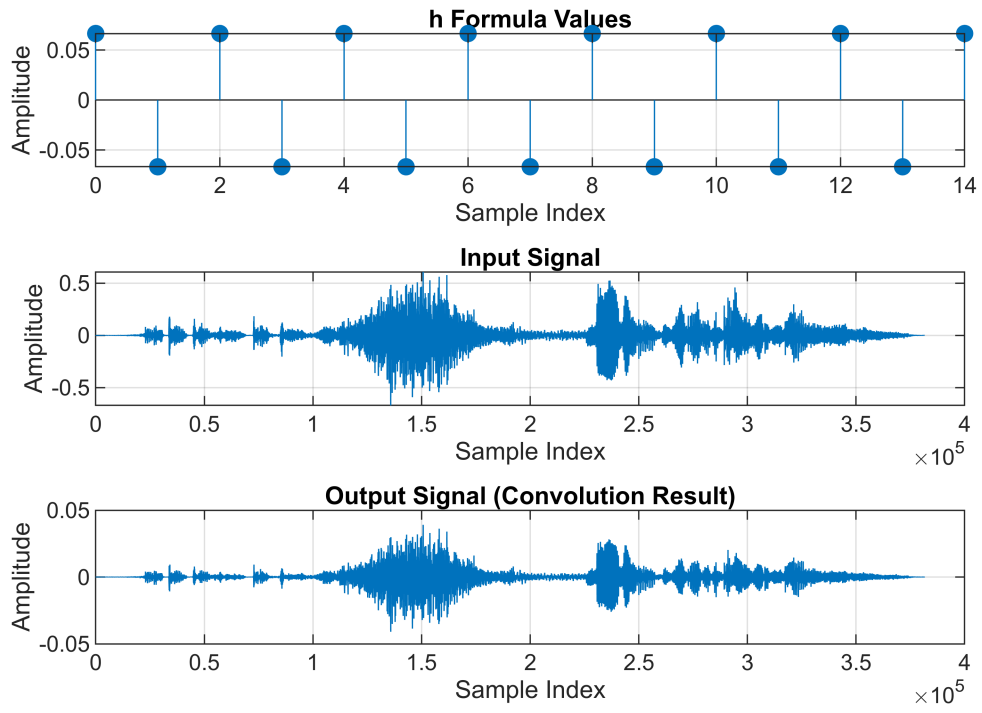
```
N = randi([5, 15]);
h = zeros(1, N);
for n = 1:N
    if mod(n, 2) == 1
        h(n) = 1/N;
    else
        h(n) = -1/N;
    end
end

[input, Fs] = audioread('C:/input.wav');

y = conv(input, h);

n_h = 0:length(h)-1;
n_input = 0:length(input)-1;
n_y = 0:length(y)-1;

figure;

subplot(3, 1, 1);
stem(n_h, h, 'filled');
title('h Formula Values');
xlabel('Sample Index');
ylabel('Amplitude');
grid on;

subplot(3, 1, 2);
plot(n_input, input);
title('Input Signal');
xlabel('Sample Index');
ylabel('Amplitude');
grid on;

subplot(3, 1, 3);
plot(n_y, y);
title('Output Signal (Convolution Result)');
xlabel('Sample Index');
ylabel('Amplitude');
grid on;

sgtitle('Input and Output Signals');
```




```
disp('N value:');
```

```
N value:
```

```
disp(N);
```

```
    15
```

```
outputFileName = 'C:/output.wav';
audiowrite(outputFileName, y, Fs);
```