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# Digital Signal Processing Project- Gender Identification and Classification

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## Program:

```
%Feature Matrix
datamat=zeros(11,4); % data matrix to store features
for k=1:11
    filename=['s' num2str(k) '.wav'];
    [my2,fs] = audioread(filename);%Reading the files
    [fundamental_freq,zero_crossing,short_energy]=Charac_features(my2,fs);%Finding
    %Storing features in the data matrix
    datamat(k,1)=k;
    datamat(k,2)=fundamental_freq;
    datamat(k,3)=zero_crossing;
    datamat(k,4)=short_energy;
end
```

## Feature Extraction and Classification

```
fundamental_freq_level=135;%Manually fixing the value of the fundamental freq
zero_crossing_level=12;%Manually fixing the value of the zero crossing value
short_energy_level=0.5;%Manually fixing the value of the Short energy value

%Reading a file and getting the fundamental,zero crossing, short energy
%values
[my2,fs] = audioread('s2.wav');
figure;plot(my2);title('Test Signal');
xlabel('Index');ylabel('Amplitude');

[freq,zero_cross,short_ene]=Charac_features(my2,fs);

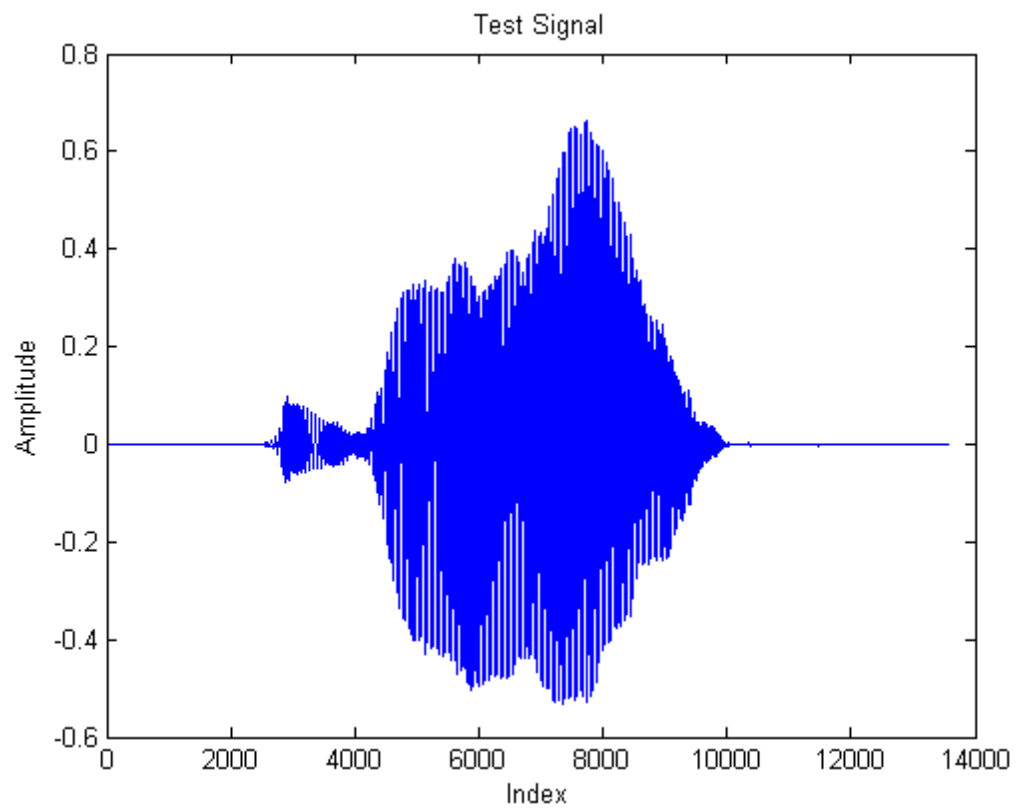
%Giving weights and finding for a particualr obseravation
marks=0.25*(freq/fundamental_freq_level)+(zero_cross/zero_crossing_level)*0.35;
marks=marks+ (0.4*short_ene/short_energy_level)

if marks>1 %if value greater than 1
    ans='female'
else
```

```
ans='Male'  
end
```

```
marks =  
  
5.5322
```

```
ans =  
  
female
```



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