

MATLAB CODE FOR ECG:

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x=0.01:0.01:2;
default=input('Press 1 if u want default ecg signal else press 2:\n');
if(default==1)
    li=30/72;

    a_pwav=0.25;
    d_pwav=0.09;
    t_pwav=0.16;

    a_qwav=0.025;
    d_qwav=0.066;
    t_qwav=0.166;

    a_qrswav=1.6;
    d_qrswav=0.11;

    a_swav=0.25;
    d_swav=0.066;
    t_swav=0.09;

    a_twav=0.35;
    d_twav=0.142;
    t_twav=0.2;

    a_uwav=0.035;
    d_uwav=0.0476;
    t_uwav=0.433;
else
    rate=input('\n\nenter the heart beat rate :');
    li=30/rate;

    %p wave specifications
    fprintf('\n\np wave specifications\n');
    d=input('Enter 1 for default specification else press 2: \n');
    if(d==1)
        a_pwav=0.25;
        d_pwav=0.09;
        t_pwav=0.16;
    else
        a_pwav=input('amplitude = ');
        d_pwav=input('duration = ');
        t_pwav=input('p-r interval = ');
        d=0;
    end

    %q wave specifications
    fprintf('\n\nq wave specifications\n');
    d=input('Enter 1 for default specification else press 2: \n');
    if(d==1)
        a_qwav=0.025;
        d_qwav=0.066;
        t_qwav=0.166;
    else
        a_qwav=input('amplitude = ');
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    d_qwav=input('duration = ');
    t_qwav=0.166;
    d=0;
end

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%qrs wave specifications
fprintf('\n\nqrs wave specifications\n');
d=input('Enter 1 for default specification else press 2: \n');
if(d==1)
    a_qrswav=1.6;
    d_qrswav=0.11;
else
    a_qrswav=input('amplitude = ');
    d_qrswav=input('duration = ');
    d=0;
end

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%s wave specifications
fprintf('\n\ns wave specifications\n');
d=input('Enter 1 for default specification else press 2: \n');
if(d==1)
    a_swav=0.25;
    d_swav=0.066;
    t_swav=0.09;
else
    a_swav=input('amplitude = ');
    d_swav=input('duration = ');
    t_swav=0.09;
    d=0;
end

```

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%t wave specifications
fprintf('\n\nt wave specifications\n');
d=input('Enter 1 for default specification else press 2: \n');
if(d==1)
    a_twav=0.35;
    d_twav=0.142;
    t_twav=0.2;
else
    a_twav=input('amplitude = ');
    d_twav=input('duration = ');
    t_twav=input('s-t interval = ');
    d=0;
end

```

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%u wave specifications
fprintf('\n\nu wave specifications\n');
d=input('Enter 1 for default specification else press 2: \n');
if(d==1)
    a_uwav=0.035;
    d_uwav=0.0476;
    t_uwav=0.433;
else

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        a_uwav=input('amplitude = ');
        d_uwav=input('duration = ');
        t_uwav=0.433;
        d=0;
    end

end

pwav=p_wav(x,a_pwav,d_pwav,t_pwav,li);

%qwav output
qwav=q_wav(x,a_qwav,d_qwav,t_qwav,li);

%qrswav output
qrswav=qrs_wav(x,a_qrswav,d_qrswav,li);
%swav output
swav=s_wav(x,a_swav,d_swav,t_swav,li);

%twav output
twav=t_wav(x,a_twav,d_twav,t_twav,li);

%uwav output
uwav=u_wav(x,a_uwav,d_uwav,t_uwav,li);
%ecg output
ecg=pwav+qrswav+twav+swav+qwav+uwav;
figure(1)
plot(x,ecg);

```