Homework 6

Problem 1 Solution

saveSineWave

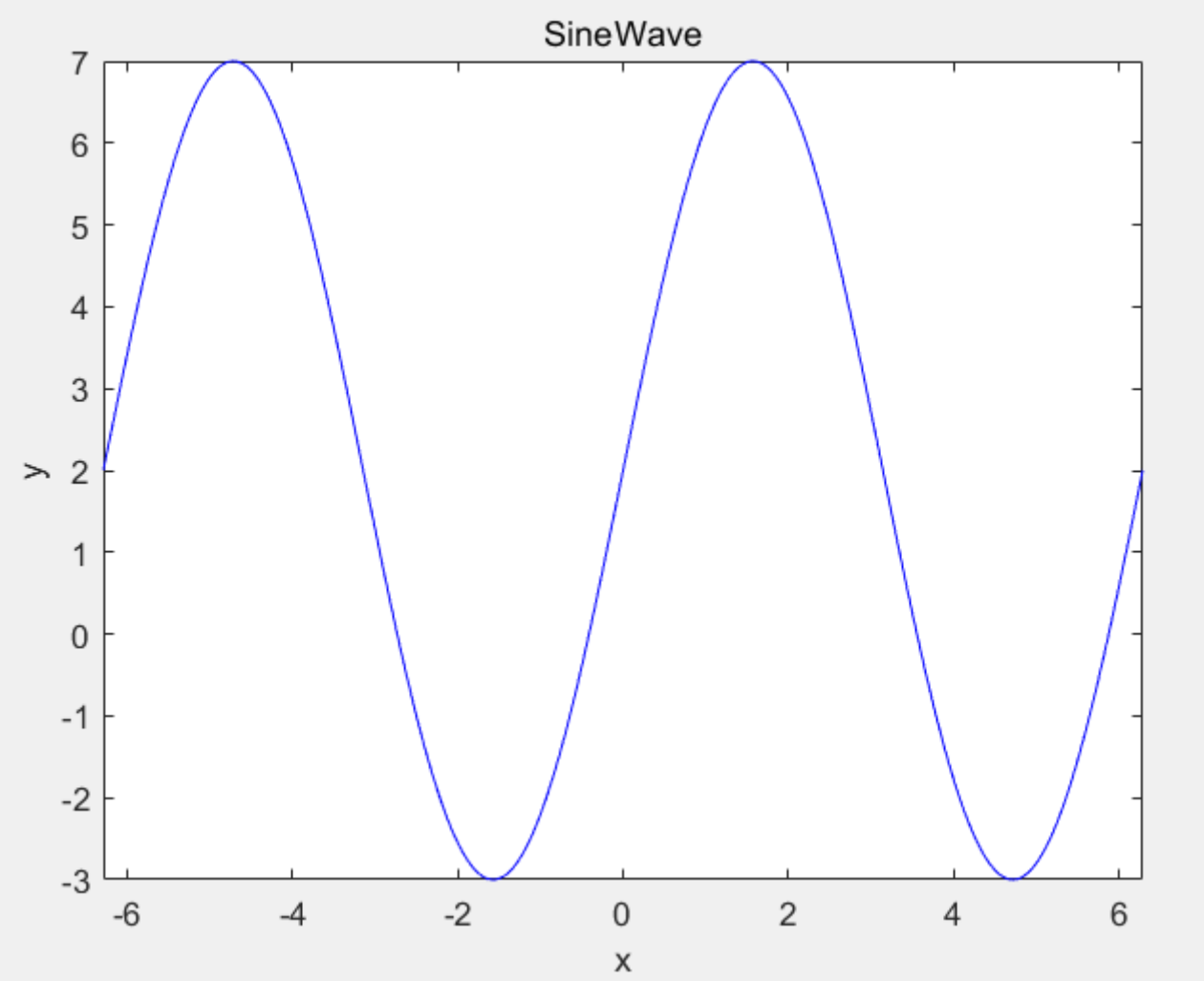
```
function saveSineWave(filename)
    x = -2*pi : pi/100 : 2*pi;
    y = 5*sin(x) + 2;
    save([filename '.mat'],'x','y');
end
```

Through this, we could save the data x and y

plotSineWave

```
function plotSineWave(filename)
    data = load([filename '.mat']);
    x = data.x;
    y = data.y;
    plot(x,y,'b');
    xlabel('x');
    ylabel('y');
    axis tight;
    title('SineWave');
end
```

The figure is as below:

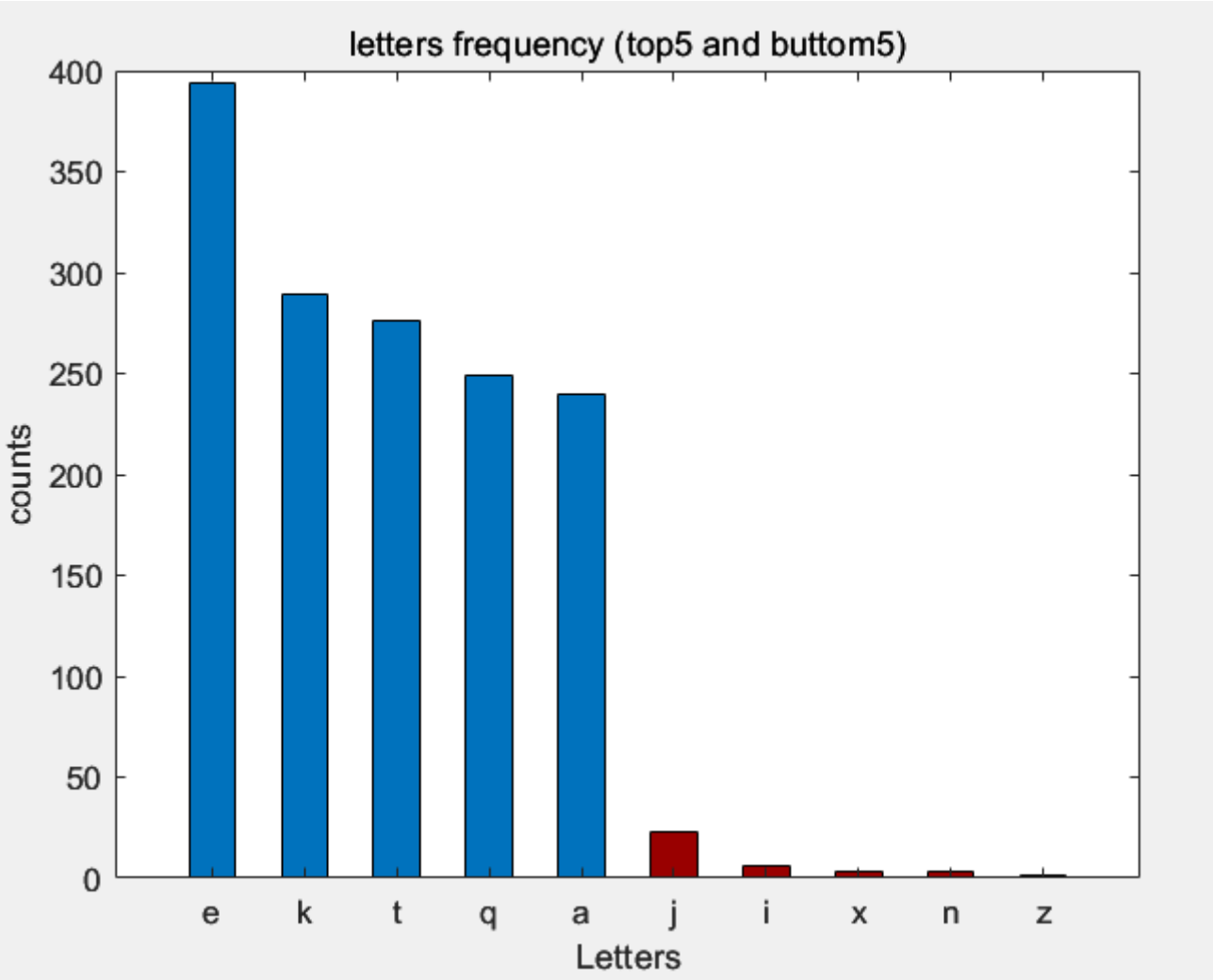


Problem 2 Solution

```
cnt = zeros(26,1);
data = importdata('ShakeAct1Scene1.txt');
text = char(data);
text = lower(text);
alphabet = char('a'+ (1:26) - 1);

for i = 1:26
    cnt(i) = numel(text(text == alphabet(i)));
end

[sorted_alpha, idx] = sort(cnt,"descend");
alphabet = alphabet(idx);

x = 1:10;
xnames = [alphabet(1:5);alphabet(22:26)];

b = bar(x,[sorted_alpha(1:5);sorted_alpha(22:26)],0.5);
set(gca,'Xtick',x,'XTickLabel',xnames(:), 'XTickLabelRotation', 0);
b.FaceColor = "flat";
b.CData(6:10,:) = [0.6 0 0;0.6 0 0;0.6 0 0;0.6 0 0;0.6 0 0];

xlabel("Letters");
```

```
ylabel("counts");
title('letters frequency (top5 and buttom5)');
```

The figure:



Final

感谢助教姐姐一学期的帮助和陪伴！！
鲜花.jpg
漂亮的排版.jpg
一句话好像也没啥好排版.jpg