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## Example 1

```
load count.dat; % loads the count data set into Workspace
load NYCDiseases.mat; % loads the NYC disease data into Workspace
```

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## Example 2

```
measlesByMonth = sum(measles, 1); % sum along dim 1 (column totals)
measlesByYear = sum(measles, 2); % sum along dim 2 (row totals)
measlesTotal = sum(measlesByMonth); % sum of vector (overall total)
```

## Example 3

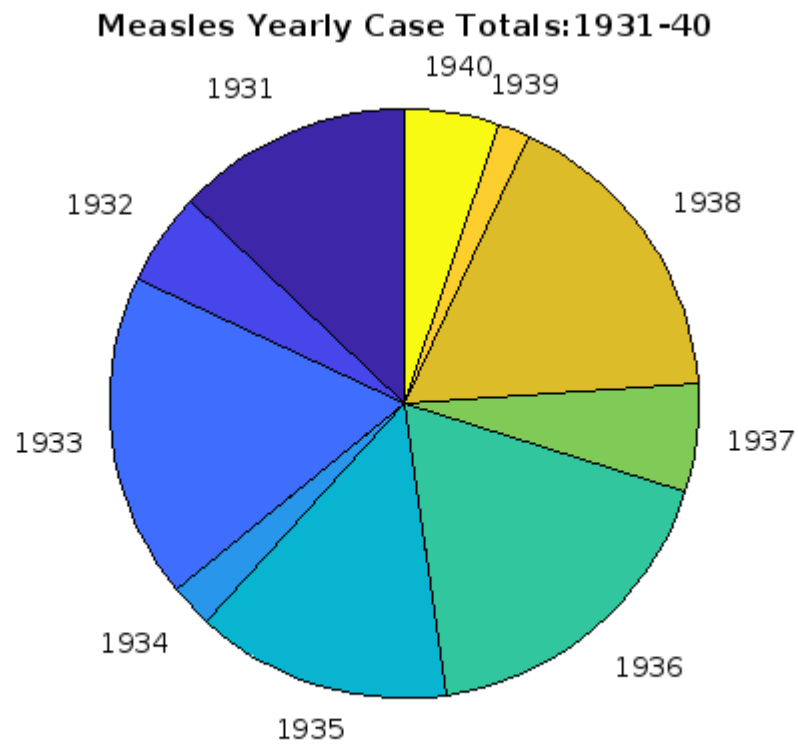
```
totalMeasles = sum(measles(:)); % uses linearization to get total measles
totalMumps = sum(mumps(:)); % uses linearization to get total mumps
totalCP = sum(chickenPox(:)); % uses linearization to get total CP
totalDiseases = totalMeasles + totalMumps + totalCP; % adds cases
percentMeasles = 100 * (totalMeasles / totalDiseases); % calculates %
```

## Exercise 1

```
percentMumps = 100 * (totalMumps / totalDiseases);
percentCP = 100 * (totalCP / totalDiseases);
% The percent of Mumps out of total diseases was around 19%
% The percent of chickenPox out of total diseases was around 28%
```

## Example 4

```
yearLabels = {'1931', '1932', '1933', '1934', '1935', '1936', '1937', '1938',
              '1939', '1940'};
figure
pie(measlesByYear(1:10), yearLabels)
title('Measles Yearly Case Totals:1931-40')
```

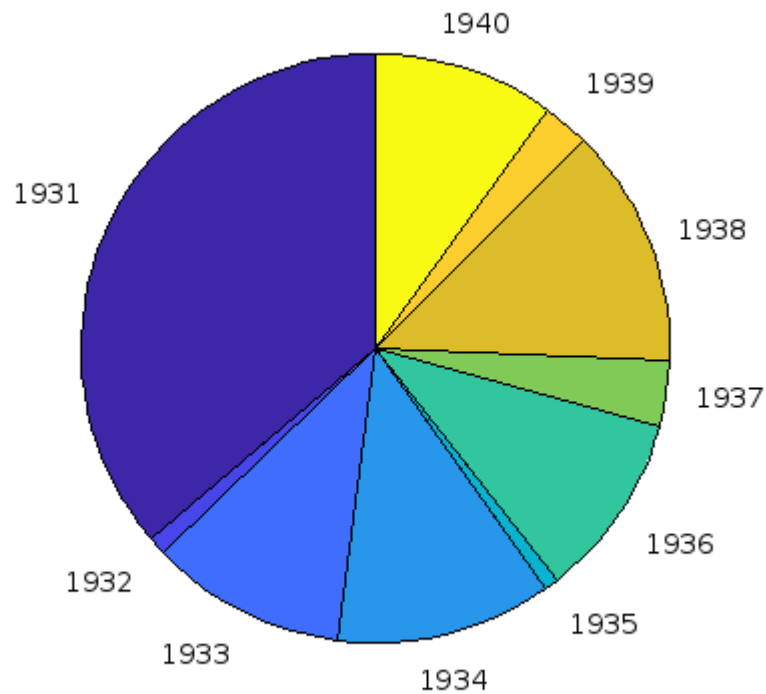


## Exercise 2

```
figure
pie(measlesByYear(11:20), yearLabels)
title('Measles Yearly Case Totals:1931-40')
% The year with the highest number of cases was 1931.
% The cases were high likely due to the lack of a Measles vaccine in 1931.
```

---

**Measles Yearly Case Totals:1931-40**

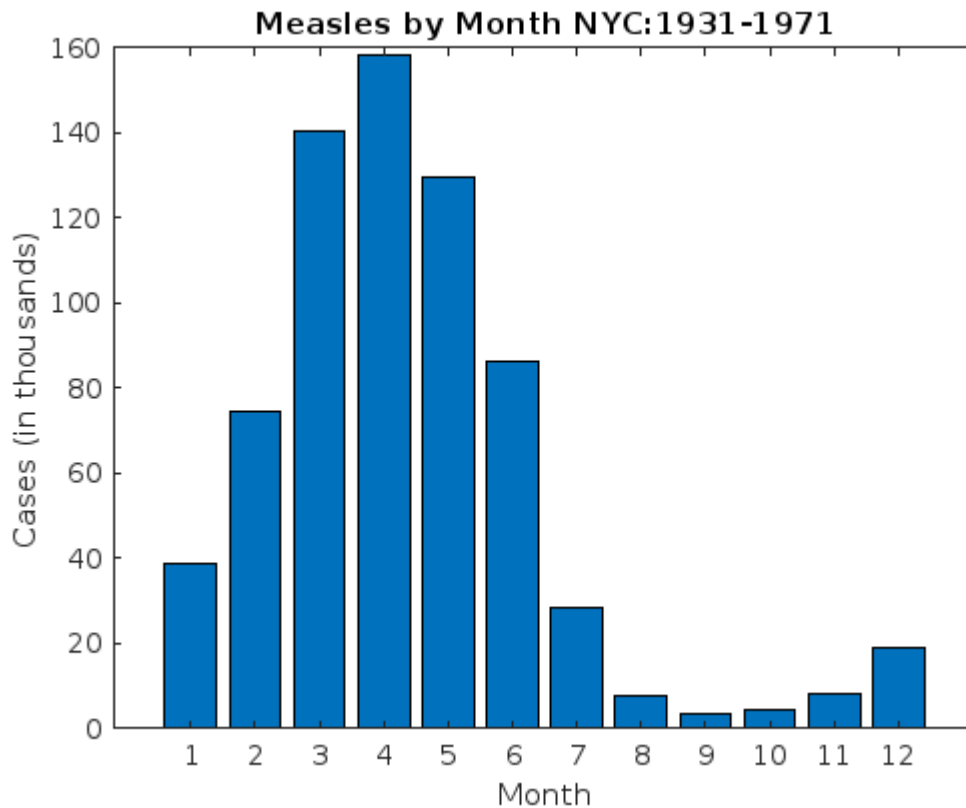


## Example 5

```
mumpsByMonth = sum(mumps,1); % sum along dim 1 of mumps
chickenPoxByMonth = sum(chickenPox,1); % sum along dim 1 of chickenPox
byMonth = [ measlesByMonth', mumpsByMonth', chickenPoxByMonth'];
% creates new variable with transposed variables to put in 3 columns
```

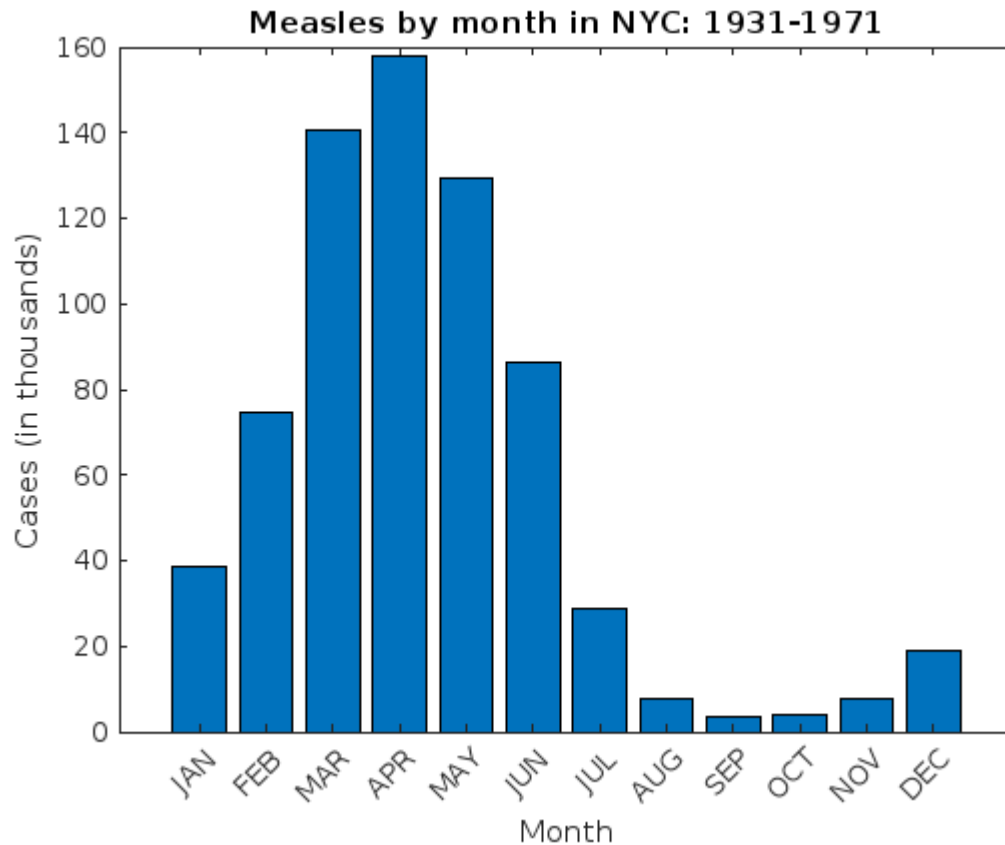
## Example 6

```
figure
bar(measlesByMonth./1000)
xlabel('Month')
ylabel('Cases (in thousands)')
title('Measles by Month NYC:1931-1971')
```



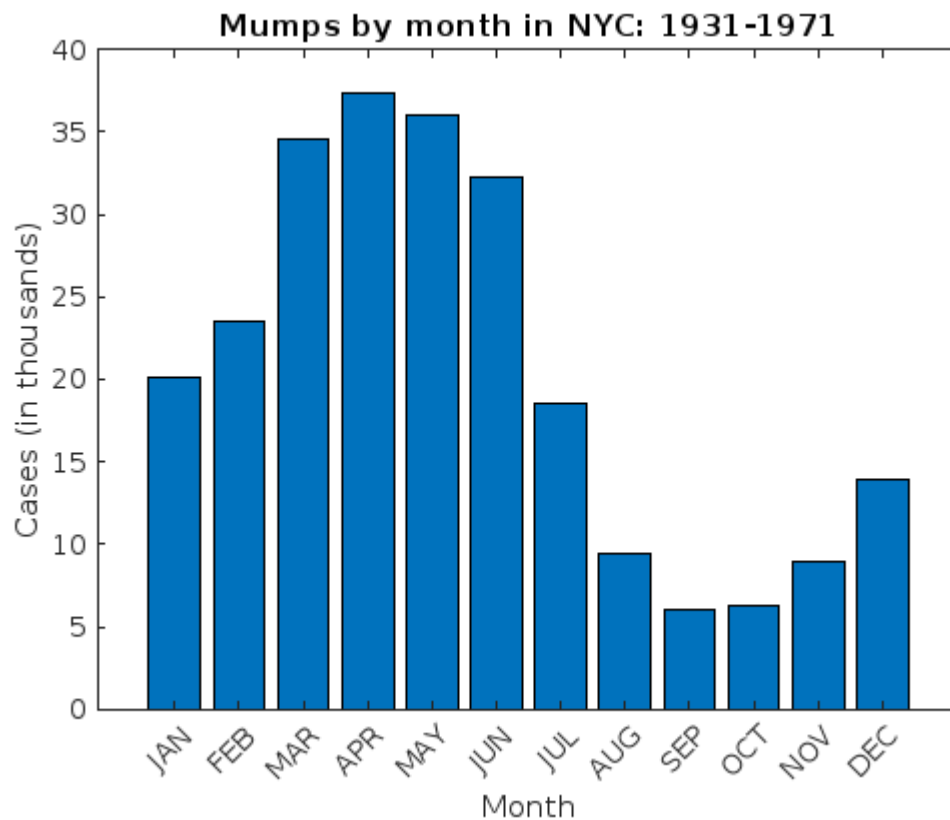
## Example 7

```
mylabels = {'JAN', 'FEB', 'MAR', 'APR', 'MAY', 'JUN', 'JUL', 'AUG', 'SEP',  
'OCT', 'NOV', 'DEC'};  
figure % Create a new figure  
bar(measlesByMonth./1000) % Plot bar chart of monthly totals  
xlabel('Month') % Label the x-axis  
ylabel('Cases (in thousands)') % Label the y-axis  
title('Measles by month in NYC: 1931-1971'); % Put title on the graph  
set(gca,'XTickLabelMode', 'manual', ...% Manually label tick marks  
'XTickLabel', mylabels)  
xtickangle(45)
```



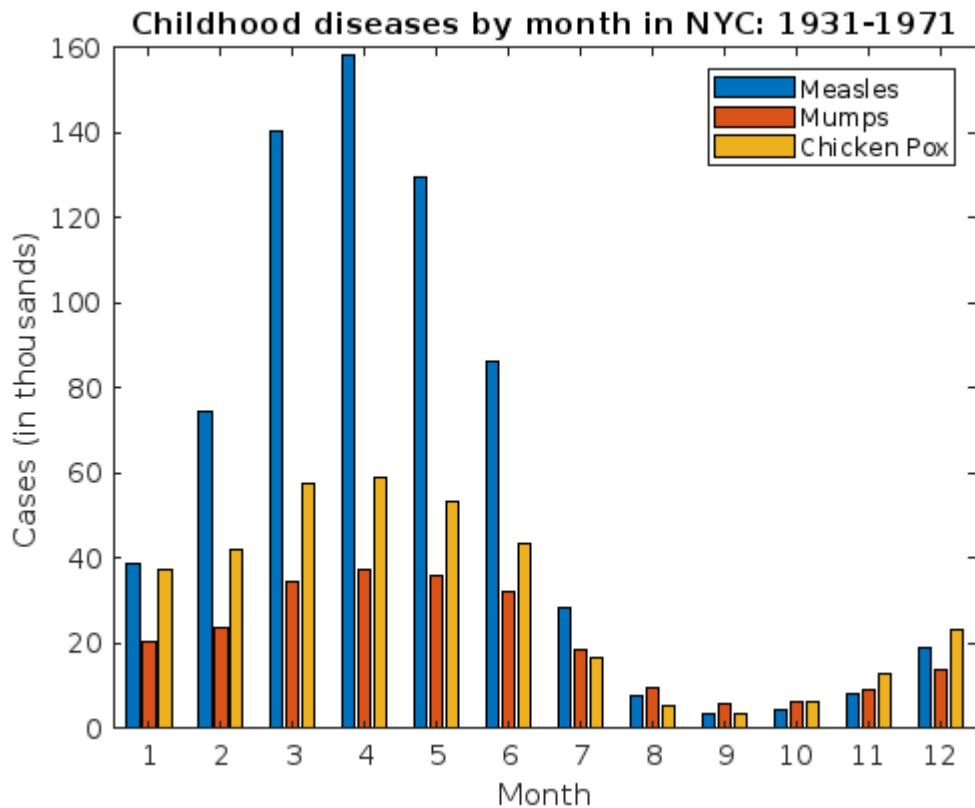
## Exercise 3

```
figure
bar(mumpsByMonth./1000)
xlabel('Month')
ylabel('Cases (in thousands)')
title('Mumps by month in NYC: 1931-1971');
set(gca,'XTickLabelMode', 'manual', 'XTickLabel', mylabels)
xtickangle(45)
```



## Example 8

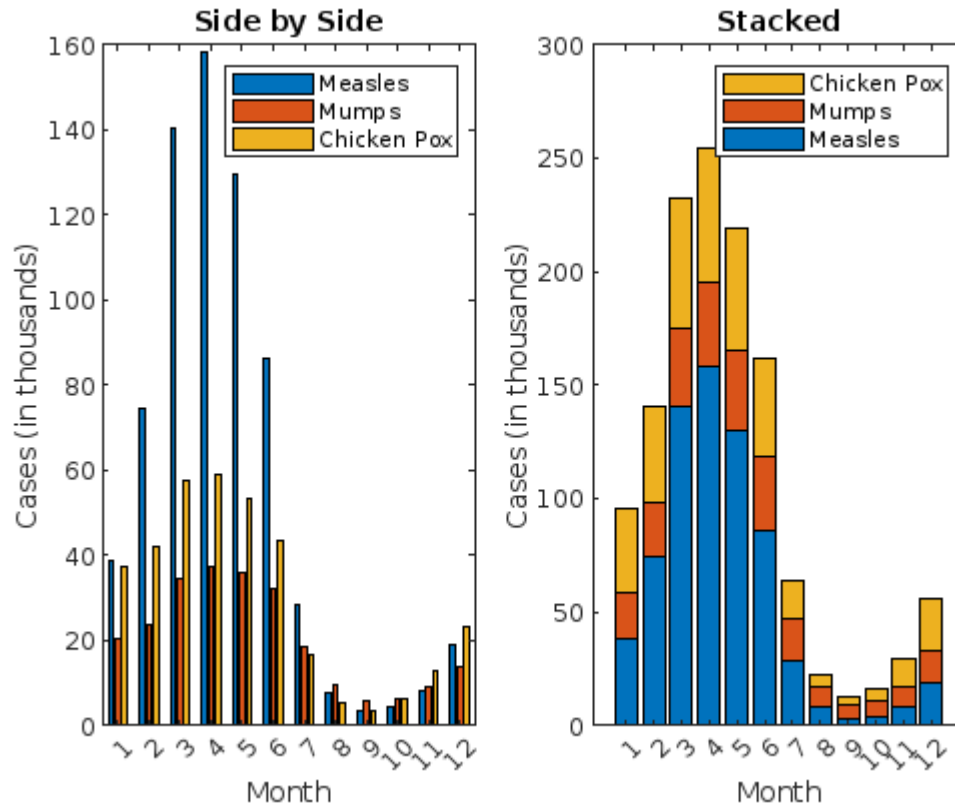
```
figure
bar(byMonth./1000)
xlabel('Month')
ylabel('Cases (in thousands)')
title('Childhood diseases by month in NYC: 1931-1971')
legend('Measles', 'Mumps', 'Chicken Pox')
```



## Example 9

```
figure
subplot(1,2,1)
bar(byMonth./1000)
xlabel('Month')
ylabel('Cases (in thousands)')
legend('Measles', 'Mumps', 'Chicken Pox')
title('Side by Side')
subplot(1,2,2)
bar(byMonth./1000, 'stacked')
xlabel('Month')
ylabel('Cases (in thousands)')
legend('Measles', 'Mumps', 'Chicken Pox')
title('Stacked')
```





## Exercise 4

```
Durango = sum(1:24,1);
IH10 = sum(count(2,:));
LP410 = sum(count(3,:));
totalIntersections = totalDurango + totalIH10 + totalLP410;
intersectionLabels = {'Durango', 'IH10', 'LP410'};
DurangoByHour = sum(Durango,1);
IH10ByHour = sum(IH10,1);
LP410ByHour = sum(LP410,1);
byHour = [ DurangoByHour', IH10ByHour', LP410ByHour'];
```

```
figure
subplot(1,2,1)
bar(byHour./1000)
xlabel('Hour')
ylabel('Traffic (in thousands)')
legend('Durango', 'IH10', 'LP410')
title('Side by Side')
subplot(1,2,2)
pie(totalIntersections, intersectionLabels)
title('Traffic at Intersections')
```

Error using horzcat  
Dimensions of arrays being concatenated are not consistent.

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```
Error in Sum_pie_bar (line 114)
byHour = [ DurangoByHour', IH10ByHour', LP410ByHour'];
```

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