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# NI&I HW0 2023''

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## load data

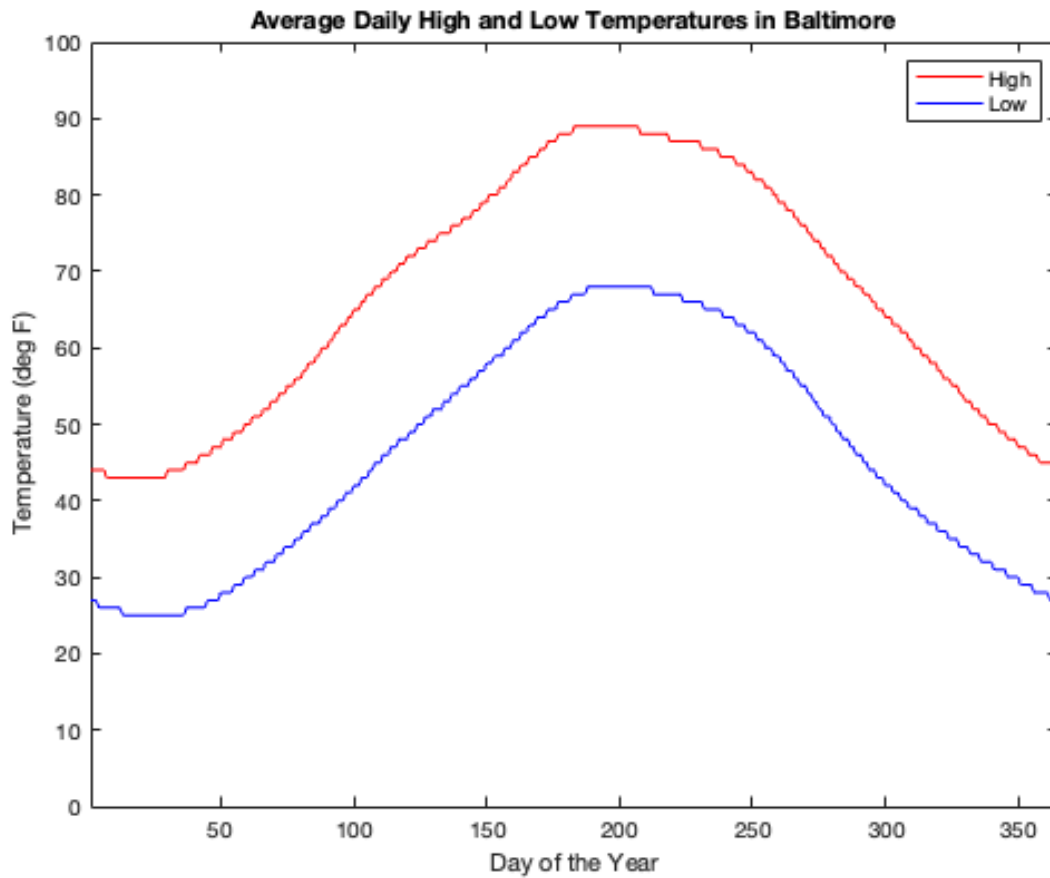
```
data_load = load("HW0 NI&I 2023 DATA.mat");
H = data_load.H;
L = data_load.L;
numDinY = data_load.numDinY;
numDinM = data_load.numDinM;
numMinY = data_load.numMinY;
```

## Problem I: plot the H and L temperture information

```
DaysInAYear = 1:1:numDinY; % constructing each day in the year

% declare a figure
figure();
plot(DaysInAYear,H,"r"); % plot H data
hold on
plot(DaysInAYear,L,"b"); % plot L data
hold off

xlim([1,365]);
ylim([0,100]); % set y axis limitations
title("Average Daily High and Low Temperatures in Baltimore"); % set figure
title
legend("High","Low"); % set legend
xlabel("Day of the Year"); % set x label
ylabel("Temperature (deg F)"); % set y label
```



## Problem II: Mean average daily low temp for each month

```
current_date = 1;
for i = 1:1:numMinY
    meanOfMonthL = mean(L(current_date:current_date+numDinM(i)-1))
    current_date = current_date + numDinM(i);
end
```

*meanOfMonthL* =

25.4839

*meanOfMonthL* =

26.9286

*meanOfMonthL* =

33.9355

*meanOfMonthL* =

43.6333

*meanOfMonthL* =

53.3548

*meanOfMonthL* =

62.6000

*meanOfMonthL* =

67.8065

*meanOfMonthL* =

65.8065

*meanOfMonthL* =

58.8333

*meanOfMonthL* =

46.5484

*meanOfMonthL* =

36.6000

*meanOfMonthL* =

29.6452

## Problem III: Finding values in an Array

1)

`dayHAbove = find(H>=50);`

```

numOfMonthHAbove = length(dayHAbove);
disp("Q3 1) There are " + numOfMonthHAbove + " days in a year with an average
    daily high temperature greater than or equal to 50 degrees F")

% 2)
maxTemp = max(H);
dayHMax = find(H==maxTemp);
numOfDaysMaxHTemp = length(dayHMax);
disp("Q3 2) There are " + numOfDaysMaxHTemp + " day(s) of the year does the
    hottest/highest average daily high temperature occur, they are: ")
disp(dayHMax)

```

*Q3 1) There are 284 days in a year with an average daily high temperature  
greater than or equal to 50 degrees F*

*Q3 2) There are 25 day(s) of the year does the hottest/highest average daily  
high temperature occur, they are:*

*Columns 1 through 13*

*183    184    185    186    187    188    189    190    191    192    193    194    195*

*Columns 14 through 25*

*196    197    198    199    200    201    202    203    204    205    206    207*

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