CS1115 Lab 11 (November 14, 2013)

Completing the lab is very important, but your work is not graded and it is not submitted. If you finish before the hour is over, then you can leave early or you can work on the "Finished Early" problems. If you do not finish the problems before the end of class, then be sure to ask enough questions so that you can complete the exercises in the next day or two on your own.

Review Structures

Download `Eg10_1Rev` and browse through its subfunctions.

M10.1.1 Complete the following function by modifying `DiameterPoints`:

```
function [Q1,Q2] = MinSep(P)
% P is a structure array of points.
% Q1 and Q2 are the points in P with minimum Euclidean separation.
```

M10.1.2 Modify `ShowPointSet` to compute and plot the centroid of the points.

M10.1.3 How would the implementation of `DiameterPoints` change if the input parameter `P` was a structured variable with two array fields that specify the x and y coordinates of the point set? Implement this version of `DiameterPoints`.

Review Boolean Functions

Download `Eg10_2Rev` and browse through its subfunctions. Complete the subfunction:

```
  function alfa = OneOrTheOther(R1,R2)
% R1 and R2 are rectangles.
% alfa is true if either R1 is inside of R2 or R2 is inside of R1.M
% Otherwise alfa is false.
```

Review 2D Arrays

Download `Eg7_3Rev` and browse through it.

M7.3.2 In the function `Average`, what is the effect of changing the line

```
B(i,j) = (A(i,j+1) + A(i+1,j) + A(i,j-1) + A(i-1,j))/4;
```

to

```
B(i,j) = (B(i,j+1) + B(i+1,j) + B(i,j-1) + B(i-1,j))/4;
```

M7.3.3 Modify function `Average` so that the temperature at a point is average the *eight* neighbors instead of four. What if it is a weighted average in which the North, East, South, and West neighbors count twice as much as the Northeast, Southeast, Northwest and Southwest neighbors?

Review Cell Arrays

Download `Eg12_3Rev` and browse through it. Complete the function `BurnOut` so that it performs as specified.

Please delete your files from the computer before you leave the lab!