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%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% ENGR 132
% Program Description
% This program is meant to use the given data to help the engineer
 anylaze
% and break the data into field pixels and then use field pixels under
 many
% different condications.
% Assigment Information
%    Assignment:      PS 02, Problem 3
%    Author:          Ranjan Behl, rbehl@purdue.edu
%    Team ID:         014
%    Contributor:     Name, login@purdue [repeat for each]
%    My contributor(s) helped me:
%      [ ] understand the assignment expectations without
%          telling me how they will approach it.
%      [ ] understand different ways to think about a solution
%          without helping me plan my solution.
%      [ ] think through the meaning of a specific error or
%          bug present in my code without looking at my code
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

INITIALIZATION

```
weeddata = load('Data_weed_percent_fieldA152nF.txt');
```

CALCULATIONS

```
%Part A
field_pixels = numel(weeddata); % finding the field pixels of the data
 set
```

```matlab
%Part B
averagecol = mean(weeddata); % finding the average of each column
maxaverage = (max(averagecol));% the highest max average
highestaverage = (find(maxaverage)); % finding the highest average
 weed percent column indice

%Part C
field_pixels_dominant = find(weeddata(:,:) < 0.015);% finding the
 field pixels that are dominant
averageweedpercentage_dominant =
 mean(weeddata(field_pixels_dominant));% finding the average weed
 percentage of the dominant field pixels
numfield_pixels_dominant = numel(field_pixels_dominant); % finding the
 total number of field pixels that meet the given condications

%Part D
field_pixels_75to95 =find(weeddata(:,:) >= .75 & weeddata(:,:)
 <= .95);% finding the field pixels that have 75% to 95% weed
 percentage
numfield_pixels_75to95 = numel(field_pixels_75to95);% the total number
 of field pixels

%Part E
field_pixels_visualinspection = find(weeddata(:,:) > 0.95); %finding
 the field pixels that have weed percentage greater than 95%
newfield_pixels_visualinspection =
 weeddata(field_pixels_visualinspection); % creating a new martix with
 only the data for the visualinspection
[Row,Col] = find(newfield_pixels_visualinspection)


Row =

     1


Col =

     1
```

FORMATTED TEXT DISPLAYS

```matlab
fprintf('%.2f field pixels are in the data set\n',field_pixels);
fprintf('The %.2f column has the highest average weed percent with a
 average weed percent %.2f\n',highestaverage,maxaverage);
fprintf('There are %.2f dominant field pixels
 and the average weed percentage is %.2f
\n',numfield_pixels_dominant,averageweedpercentage_dominant);
fprintf('There are %.2f field pixels in the 75 percent to 95 percent
 category\n',numfield_pixels_75to95);
```

```matlab
fprintf('The pixel locations that require visual inspection are %.f, %.f\n',[Row,Col]);
```

400.00 field pixels are in the data set
The 1.00 column has the highest average weed percent with a average weed percent 0.54
There are 91.00 dominant field pixels and the average weed percentage is 0.01
There are 6.00 field pixels in the 75 percent to 95 percent category
The pixel locations that require visual inspection are 1, 1

ACADEMIC INTEGRITY STATEMENT

I have not used source code obtained from any other unauthorized source, either modified or unmodified. Neither have I provided access to my code to another. The code I am submitting is my own original work.

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