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% ENGR 132
% Program Description
% Using the given data martix, I was tasked to anylaze the data and
 find things such the
% minimum GPA of the students who indicated an interest in both ECE
 and CE
% but not ME, or how many students failed to select any school.
%
% Assigment Information
%   Assignment:      PS 02, Problem 1
%   Author:          Ranjan Behl, rbehl@purdue.edu
%   Team ID:         008
%   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

```
PESData = csvread('Data_PES_survey_record.csv',1,0); % load the suvery
 data
```

CALCULATIONS

```
%Part A
```

```matlab
A = PESData(:,2:4); % a smaller martix that is just the school
 selection
Row_selection_sum = sum(A,2); % sum of each row
RowIndices_failedselection = find(Row_selection_sum==0); %finding the
 rows whoose sum is equal to zero

%Part B
numstudents_failed = numel(RowIndices_failedselection); % the total
 number of students who failed to select any school

%Part C
numstudents_singleschool = numel(find(Row_selection_sum == 1)); % the
 number of students that only indicated a single school as a interest

%Part D
GPA = PESData(:,5); % The GPA column from the given data as a column
 vector
studentsindices_ECE_CE = find(PESData(:,2) ~= 0 & PESData(:,3)== 0 &
 PESData(:,4)~= 0); %finding the students who expressed a interest in
 both ECE and CE but not ME
minGPA = min(GPA(studentsindices_ECE_CE)); % finding the minimum gpa
 of the students who expressed a interest in both ECE and CE but not
 ME

%Part E
Suvery = PESData(:,1); % The suvery identifcation number column from
 the given data as a colum vector
RowIndices_all = find(Row_selection_sum == 6); % Finding the rows in
 which the student expressed interest in all 3 majors
Suverynum = Suvery(RowIndices_all); % Listing the student
 identifcation numbers of the students who expressed a interest in all
 3 majors

%Part F
studentsindices_CE_ME = find(PESData(:,3) == 1 & PESData(:,2) == 3); %
 finding the rows in which the student expressed CE as their first
 choice and ME as their third
numstudents_CE_ME = numel(studentsindices_CE_ME); % finding the total
 number of students who expressed CE as thier first and ME as their
 third choice

%Part G
studentinterestECE = PESData(:,2);
studentsindices_ECE = find(PESData(:,2)~=0); % Finding the students
 who expressed a interest in ECE
studentinterestlv = mean(studentinterestECE(studentsindices_ECE)); %
 Finding the average interest level among the students who expressed a
 interest in ECE

%Part H
students_highgpa_ECE_ME = find((PESData(:,2) == 1 | PESData(:,3) == 1)
 & GPA > 3.5); % finding the students who had ECE or ME as their first
 choice and whose GPA was higher than a 3.5
```

```matlab
averageGPA = mean(GPA(students_highgpa_ECE_ME)); % finding the average
 among the students who meet the condications
```

FORMATTED TEXT DISPLAYS

```matlab
fprintf('%.2f Students failed to select any school
\n',numstudents_failed);
fprintf('%.2f Students incdicated an interest in only one school
\n',numstudents_singleschool);
fprintf('%.2f is the minimum GPA of the students who indicated an
 interest in both ECE and CE but not ME\n',minGPA);
fprintf('%.2f was  the average level of interest in ECE
\n',studentinterestlv);

5.00 Students failed to select any school
54.00 Students incdicated an interest in only one school
2.36 is the minimum GPA of the students who indicated an interest in
 both ECE and CE but not ME
1.43 was  the average level of interest in ECE
```

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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