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LAB 10 – Conditional Statements

Question: Which scholarship(s) are "Micah" and "Chirag" eligible for? Please describe your process

Submission guideline: Please electronically submit, via the MAT188 PRA website, a 1 page document answering the questions above, clearly showing your work (this can include your code, comments, any explanations, etc.). In your submission, also include a concise (1-paragraph suggested) written description of your problem-solving process.

Set-up: Pick a number for XX and another number for YY (from 0 to 100) (see Table #1 above). Clearly indicate what these are when you submit your response to the question below!

Step #1: Pick values for XX and YY
Let XX = 80 = 3.7 GPA
Let YY = 85 = 4.0 GPA

Step #2: Write the code for these values

```
CurrentGPA=[1.7 4; 3.7 1; 2.7 1.7; 3.7 4.0; 3.7 3.3];

ScholarshipEligibility=[0 0;0 0; 0 0];

CountM=0;
CountC=0;
c1=0;
c2=0;
for im=1:length(CurrentGPA)
    CountM=CurrentGPA(im,1)+CountM;
    CountC=CurrentGPA(im,2)+CountC;

    if CurrentGPA(im,1)>=2.3
        c1=c1+1;end
    if CurrentGPA(im,2)>=2.3
        c2=c2+1;end
end
if(CountM/5)>=1.3
    ScholarshipEligibility(1,1)=1;  end
if(CountC/5)>=1.3
    ScholarshipEligibility(1,2)=1;end

if c1>=3
ScholarshipEligibility(2,1)=1;end
if c2>=3
ScholarshipEligibility(2,2)=1;end

if(CountM/5)>=2.2
    ScholarshipEligibility(3,1)=1;end
if(CountC/5)>=2.2
    ScholarshipEligibility(3,2)=1;
end
```

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Step #3: Present Results
To answer the question, which scholarship(s) are "Micah" and "Chirag" eligible for?
The answer is all of them.
This is because the code output for the Matrix ScholashipEligibility is [1,1;1:1,1:1]
This means that both Micah and Chirag are eligible for all three scholarships.

Step #4: Description of problem-solving process
First using the values of XX and YY, I converted them to refined grade point values and plugged them into the matrix called CurrentGPA. Next, I created a matrix called ScholarshipEligibility that had 3 rows and 2 columns where each row was for each scholarship and each column was assigned to Micah and Chirag. I set all the values to 0 for the matrix. Next, I created variables CountM and CountC and set them to 0. I also create variables c1 and c2 and set them to 0. These variables would be used to calculate the number of C+ marks or higher each student recieved. After, using loops, I wrote a code which would tally up the five courses gpa and represent as CountM and CountC. Next, using if statements and conditional statements, I wrote a code where the CountM and CountC values would be divided by 5 for each of the courses to get an average GPA which would be used three times for each scholarship to test whether it was high enough to get the scholarship. If it was, it would change the matrix for ScholarshipEligibility from 0 to 1, otherwise it would leave it to 0. In the end I received ScholashipEligibility [1,1;1:1,1:1] meaning that both chirag and micah were eligible for all three scholarships.