**Matlab – Lab #10**

For this lab, I chose Micah’s Grade for CIV100 to be 73 and I chose Chirag’s Grade for MAT186 to be 62. The code for this lab is as follows:

Micah\_APS111=62;

Micah\_CIV100=73;

Micah\_APS164=71;

Micah\_MAT186=80;

Micah\_MAT188=83;

Micah\_Grades=[Micah\_APS111 Micah\_CIV100 Micah\_APS164 Micah\_MAT186 Micah\_MAT188];

Micah\_GPA=zeros(size(Micah\_Grades));

Weight\_Of\_Courses=[0.5 0.5 0.5 0.5 0.5];

for i=1:length(Micah\_Grades)

if Micah\_Grades(i)>=90

Micah\_GPA(i)=4.0;

elseif Micah\_Grades(i)<90 && mgrades(i)>=85

Micah\_GPA(i)=4.0;

elseif Micah\_Grades(i)<85 && mgrades(i)>=80

Micah\_GPA(i)=3.7;

elseif Micah\_Grades(i)<80 && mgrades(i)>=77

Micah\_GPA(i)=3.3;

elseif Micah\_Grades(i)<77 && mgrades(i)>=73

Micah\_GPA(i)=3.0;

elseif Micah\_Grades(i)<73 && mgrades(i)>=70

Micah\_GPA(i)=2.7;

elseif Micah\_Grades(i)<70 && mgrades(i)>=67

Micah\_GPA(i)=2.3;

elseif Micah\_Grades(i)<67 && mgrades(i)>=63

Micah\_GPA(i)=2.0;

elseif Micah\_Grades(i)<63 && mgrades(i)>=60

Micah\_GPA(i)=1.7;

elseif Micah\_Grades(i)<60 && mgrades(i)>=57

Micah\_GPA(i)=1.3;

elseif Micah\_Grades(i)<57 && mgrades(i)>=53

Micah\_GPA(i)=1.0;

elseif Micah\_Grades(i)<53 && mgrades(i)>=50

Micah\_GPA(i)=0.7;

else

Micah\_GPA(i)=0;

end

end

Micah\_SGPA=sum(Micah\_GPA.\*Weight\_Of\_Courses)/sum(Weight\_Of\_Courses)

if Micah\_SGPA>=1.3

fprintf ('Orange Scholarship eligible for Micah \n')

end

if Micah\_SGPA>=2.2

fprintf ('Blue Scholarship eligible for Micah \n')

end

Micah\_yellow=zeros(size(Micah\_Grades));

for i=1:length(Micah\_Grades)

if Micah\_Grades(i)>=67

Micah\_yellow(i)=1;

else

Micah\_yellow(i)=0;

end

end

Mycah\_Yellow\_Sum=sum(Micah\_yellow);

if Mycah\_Yellow\_Sum>=3

fprintf ('Yellow Scholarship eligible for Micah \n')

end

Chirag\_APS111=92;

Chirag\_CIV100=55;

Chirag\_APS164=60;

Chirag\_MAT186=62;

Chirag\_MAT188=79;

Chirag\_Grades=[Chirag\_APS111 Chirag\_CIV100 Chirag\_APS164 Chirag\_MAT186 Chirag\_MAT188];

Chirag\_GPA=zeros(size(Chirag\_Grades));

for i=1:length(mgrades)

if Chirag\_Grades(i)>=90

Chirag\_GPA(i)=4.0;

elseif Chirag\_Grades(i)<90 && mgrades(i)>=85

Chirag\_GPA(i)=4.0;

elseif Chirag\_Grades(i)<85 && mgrades(i)>=80

Chirag\_GPA(i)=3.7;

elseif Chirag\_Grades(i)<80 && mgrades(i)>=77

Chirag\_GPA(i)=3.3;

elseif Chirag\_Grades(i)<77 && mgrades(i)>=73

Chirag\_GPA(i)=3.0;

elseif Chirag\_Grades(i)<73 && mgrades(i)>=70

Chirag\_GPA(i)=2.7;

elseif Chirag\_Grades(i)<70 && mgrades(i)>=67

Chirag\_GPA(i)=2.3;

elseif Chirag\_Grades(i)<67 && mgrades(i)>=63

Chirag\_GPA(i)=2.0;

elseif cgrades(i)<63 && mgrades(i)>=60

Chirag\_GPA(i)=1.7;

elseif Chirag\_Grades(i)<60 && mgrades(i)>=57

Chirag\_GPA(i)=1.3;

elseif Chirag\_Grades(i)<57 && mgrades(i)>=53

Chirag\_GPA(i)=1.0;

elseif Chirag\_Grades(i)<53 && mgrades(i)>=50

Chirag\_GPA(i)=0.7;

else

Chirag\_GPA(i)=0;

end

end

Chirag\_SGPA=sum(Chirag\_GPA.\*Weight\_Of\_Courses)/sum(Weight\_Of\_Courses)

if Chirag\_SGPA>=1.3

fprintf ('Orange Scholarship eligible for Chirag \n')

end

if Chirag\_SGPA>=2.2

fprintf ('Blue Scholarship eligible for Chirag \n')

end

Chirag\_Yellow=zeros(size(Chirag\_Grades));

for i=1:length(Chirag\_Grades)

if Chirag\_Grades(i)>=67

Chirag\_Yellow(i)=1;

else

Chirag\_Yellow(i)=0;

end

end

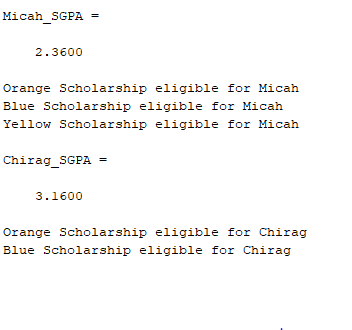
Chirag\_Yellow\_Sum=sum(Chirag\_Yellow);

if Chirag\_Yellow\_Sum>=3

fprintf ('Yellow Scholarship eligible for Chirag \n')

end

For the marks I have decided for Micah and Chirag, the following output is produced:



My thought process consisted of using their marks to find their GPA’s and SGPA’s, so that I can determine their scholarship eligibility. To do such, firstly, constants were created for Micah’s various grades. Those grades are then put into a 1x5 matrix. Another 1x5 matrix is created full of ‘0’ within the matrix for his GPA before it is calculated. Using conditional statements, the percentage of Micah’s grades are converted to GPA. After his GPA is calculated, the value can be used to calculate the SGPA by multiplying the GPA value by the weight of the courses and then dividing by the total weight of the courses. Once the SGPA is calculated, I used conditional statements to determine whether Micah was eligible for certain scholarships and prints statements if he is eligible for scholarships. To determine if Micah is eligible for the yellow scholarship, I used a 1x5 matrix of ‘0’s as a method of counting how many courses he received a 67% or higher in, by replacing the ‘0’ for a ‘1’ for every course he received higher than a 67% in. If the number of ‘1’s is greater than 3, then a statement is printed that he is eligible for the yellow scholarship. The same process above is repeated for Chirag and his respective marks.

With the marks chosen, it can be seen Micah is eligible for the Orange, Blue and Yellow Scholarship whereas Chirag is eligible for the Orange and Blue Scholarship