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#This program will help you calculate the Academic record as well as the Economic need of student applicants

#Allows us to use the readline method

```
import sys
```

```
import math
```

#Initializing all variables with dummy values

```
StudentName = "Derek Brambles"
```

```
FamilySize = 4
```

#Lowest family income defaulted to 20000

```
LowestFamilyIncome = 20000
```

```
FamilyIncome = 20000
```

#First value is a dummy value (because the user starts counting from 1, whereas programs start counting from 0)

#this list represents the cutoff value for a family of 0, 1, 2, 3, 4.... etc.

```
CutoffFamilyIncome = [20, 36000, 48000, 60000, 73000, 86000,  
                      100000, 114000, 128000, 142000, 156000,  
                      170000, 184000, 0, 0, 0,  
                      0, 0, 0, 0, 0]
```

```
CollegeGPA = 3.5
```

```
HighSchlGPA = 4.0
```

```
Weighted = True
```

```
RoundedGPA = 0.0
```

```
isFreshman = False
```

#This list contains 15 dummy values

#Within is contained the GPA's at which each academic record is cut off

```
RightEnd = [10,20,30,40,50,  
            60,71,80,90,91,  
            60,71,80,90,90,
```

3.51,3.54,3.58,3.61,3.64,
3.68,3.71,3.74,3.78,3.81,
3.84,3.88,3.91,3.94,3.98,4.0]

#This is a storage variable, every time the user enters an input, it is temporarily stored in this variable

kbw = "x"

#Where all of the math for rounding the GPA resides

def calculateRoundedGPA(ColGPA, HighGPA, weighted):

if (weighted):

 RoundedGPA = round(((min(4, HighGPA) + (2 * ColGPA)) / 3), 2)

else:

 RoundedGPA = round(((HighGPA + ColGPA) / 2), 2)

return RoundedGPA

#Checks that the GPA is within the legal bounds

def checkColGPA(ColGPA):

if (ColGPA < 3.5):

 print("Student's College GPA is bellow the specified minimum.")

 return 1

elif(ColGPA > 4.0):

 print("Student's College GPA is above the specified maximum.")

 return 2

else:

 return 0

#Checks that the FamiliyIncome is within the legal bounds

def checkFamilyIncome(familySize, familyIncome):

if (familyIncome < LowestFamilyIncome):

 print("WARNING: This student has a lower income than the specified lowest family income")

if (familyIncome > CutoffFamilyIncome[familySize]):

```

        print("Student's Family Income exceeds Cutoff Family Income")
        return 1
    else:
        return 0
#Calculate the Score For a students Academic Record
def calculateScoreForAcademicRecord():
    print("\n-----")
    print("Beginning to calculate Score for Academic Record")
    print("-----\n")
    print("Please enter the students name:")
    #asking for user input
    studentName = sys.stdin.readline()
    studentName = studentName.strip()

    print("Is this student a freshman? (y/n)")
    kbw = sys.stdin.readline()

    kbw = kbw.strip()
    #Error checking
    while (kbw is not 'y' and kbw is not 'n'):
        print("Invalid Input..."
              "\nPlease type in the letter \"y\" with no spaces if the student is a
Freshman"
              "\nOr type in the letter \"n\" with no spaces if the student is NOT a
Freshman.")

    print("\nIs this student a freshman? (y/n)")
    kbw = sys.stdin.readline()
    kbw = kbw.strip()

    if (kbw is "y"):
        isFreshman = True
    elif (kbw is "n"):

```

```

isFreshman = False

if (isFreshman):
    print("Please enter the Freshman students College GPA:")
    ColGPA = float(sys.stdin.readline())
    while (checkColGPA(ColGPA) != 0):
        print("Please re-enter the Freshman students College GPA:")
        ColGPA = float(sys.stdin.readline())

    print("Please enter the students High School GPA:")
    HighGPA = float(sys.stdin.readline())
    print("Is the High School GPA weighted? (y/n)")
    kbw = sys.stdin.readline()

    kbw = kbw.strip()
    # print(kbw)
    while (kbw is not "y" and kbw is not "n"):
        print("Invalid Input..."
              "\nPlease type in the letter \"y\" with no spaces if the students
High School GPA is weighted."
              "\nOr type in the letter \"n\" with no spaces if the student High
School GPA is unweighted.")
        print("Is this student a freshman? (y/n)")
        kbw = sys.stdin.readline()
    else:
        if (kbw is "y"):
            weighted = True
        elif (kbw is "n"):
            weighted = False

    # If you are unclear what we are doing here, please refer to the
    # function defined at the start of the program
    RoundedGPA = calculateRoundedGPA(ColGPA, HighGPA, weighted)

```

```
print("\n-----")
print("Returning Output:")
print("-----\n")
```

```
print("\nStudents Name: ", studentName)
studentName = studentName.strip()
```

```
print("Students College GPA: ", ColGPA)
if(weighted):
    print("Students weighted High School GPA: ", HighGPA)
else:
    print("Students unweighted High School GPA: ", HighGPA)
```

```
print("\nWeighted Average GPA: ", RoundedGPA)
else:
    print("Please enter the NON-Freshman students College GPA:")
    ColGPA = float(sys.stdin.readline())
    while (checkColGPA(ColGPA) != 0):
        print("Please re-enter the NON-Freshman students College GPA:")
        ColGPA = float(sys.stdin.readline())
```

```
#rounded gpa
```

```
RoundedGPA = round(ColGPA, 2)
print("\n-----")
print("Returning Output:")
print("-----\n")
print("Students Name: ", studentName)
print("Students College GPA: ", RoundedGPA)
```

```
# This section of the program applies to both Freshman and
Non-Freshman
flag = True
```

```

for i in range(15, 31):
    if (RoundedGPA <= RightEnd[i] and flag):
        #print("Compared to:", RightEnd[i])
        print("Score for Academic Record", i, "\n")
        flag = False

print("\n-----")
print("Returning to the Main Menu")
print("-----\n")
#Calculates the Score For Economic Need for a student from the given
user inputs
def calculateScoreForEconomicNeed():
    print("\n-----")
    print("Beginning to calculate Score for Economic Need")
    print("-----\n")

    print("Please enter the students name:")
    studentName = sys.stdin.readline()
    print("Please enter the students family size (a number between 1 and
20):")
    familySize = int(sys.stdin.readline())
    while (familySize < 1 or familySize > 20):
        print("Sorry this program does not allow for family sizes not between 1
and 20\n")
        print("Please re-enter the students family size (a number between 1
and 20):")
        familySize = int(sys.stdin.readline())
    print("Please enter lowest family income(a number with no decimal
values or commas):")
    LowestFamilyIncome = int(sys.stdin.readline())
    print("Please enter the students family income (a number with no
decimal values or commas):")
    familyIncome = int(sys.stdin.readline())

```

```

    if (familySize > 12):
        CutoffFamilyIncome[familySize] = CutoffFamilyIncome[12] +
        ((familySize - 12) * 14000)

    while (checkFamilyIncome(familySize,familyIncome) != 0):
        print("Please re-enter the family income (a number with no decimal
values or commas)")
        familyIncome = int(sys.stdin.readline())

    RatioEconNeed = (CutoffFamilyIncome[familySize] - familyIncome) / (
        CutoffFamilyIncome[familySize] - LowestFamilyIncome)
    ScoreEconNeed = RatioEconNeed * 8

    print("\n-----")
    print("Returning Output:")
    print("-----\n")
    print("Students Name: ", studentName)
    print("Students Family Size: ", familySize)
    print("Students Family Income: ", familyIncome)
    if (ScoreEconNeed < math.floor(ScoreEconNeed) + 0.5):
        print("\nScore for Economic Need:", math.floor(ScoreEconNeed))
    else:
        print("Score for Economic Need:", math.floor(ScoreEconNeed) + 1)

    print("\n-----")
    print("Returning to the Main Menu")
    print("-----\n")

#This function simulates the entirety of the program
#It can be called multiple times within a single run through
#This is where the user will enter the program
def enterMainMenu():
    print("Welcome to AcadEconScoreCalculator")

```

```
print("This program calculates the Score for Academic Record and the  
Score for Economic Need")
```

```
print("\n1: Calculate the Weighted Average GPA\n and the Score for  
Academic Record")  
print("2: Calculate Score for Economic Need")  
print("3: Calculate both Scores")  
print("4: Quit")
```

```
print(  
    "\nSelect one of these four options from the Menu by typing in the  
number for the option and press ENTER")  
kbw = int(sys.stdin.readline())
```

```
if kbw == 1:  
    calculateScoreForAcademicRecord()  
    enterMainMenu()  
elif kbw == 2:  
    calculateScoreForEconomicNeed()  
    enterMainMenu()  
elif kbw == 3:  
    calculateScoreForAcademicRecord()  
    calculateScoreForEconomicNeed()  
    enterMainMenu()  
elif kbw == 4:  
    print("Exiting program, thank you for using Simple Qualifier")  
    sys.exit()  
else:  
    while (kbw not in range(0, 5)):  
        print("Invalid entry, please select a number between 1 and 4")
```



```
kbw = sys.stdin.readline()  
kbw = kbw.strip()
```

```
enterMainMenu()
```