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BSDSF21AOO2

LAB 12

PROGRAMMING FUNDAMENTALS

TASK1 PART A,B E

def cgpa(avrg):

if avrg <= 100 and avrg>=85:

return "A+"

elif avrg <= 84 and avrg>=80:

return "A"

elif avrg <= 79 and avrg>=75:

return "B+"

elif avrg <= 74 and avrg>=70:

return "B"

elif avrg <= 69 and avrg>=65:

return "C+"

elif avrg <= 64 and avrg>=60:

return "C"

elif avrg <= 59 and avrg>=55:

return "C-"

elif avrg <= 54 and avrg>=50:

return "D"

elif avrg <50:

return "F"

def grade(a,b,c):

sum = total(a,b,c)

if sum <= 100 and sum>=85:

return "A+"

elif sum <= 84 and sum>=80:

return "A"

elif sum <= 79 and sum>=75:

return "B+"

elif sum <= 74 and sum>=70:

return "B"

elif sum <= 69 and sum>=65:

return "C+"

elif sum <= 64 and sum>=60:

return "C"

elif sum <= 59 and sum>=55:

return "C-"

elif sum <= 54 and sum>=50:

return "D"

elif sum <50:

return "F"

def total(a,b,c):

sum = int(a) + int(b) + int(c)

return sum

def RESULT():

name=""

rollno=""

sub1=""

sub2=""

sub3=""

ict=[0 for i in range(3)]

pf=[0 for i in range(3)]

dld=[0 for i in range(3)]

f1 = open("result\_data.txt","r")

print("<-----------------TASK 1(A)------------------>")

n = int(input("Enter student number between 1 and 9: "))

if n <=0 or n>9:

raise Exception("write student no between 1 and 9")

f1.seek((((n-1)\*3)\*59)+118)

rollno+=f1.read(10)

name+=f1.read(32).strip()

sub1+=f1.read(7).strip()

ict[0]=int(f1.read(3).strip())

ict[1]=int(f1.read(3).strip())

ict[2]=int(f1.read(2).strip())

f1.read(1)

f1.read(42)

sub2+=f1.read(7).strip()

pf[0]=int(f1.read(3).strip())

pf[1]=int(f1.read(3).strip())

pf[2]=int(f1.read(2).strip())

f1.read(1)

f1.read(42)

sub3+=f1.read(7).strip()

dld[0]=int(f1.read(3).strip())

dld[1]=int(f1.read(3).strip())

dld[2]=int(f1.read(2).strip())

f1.read(1)

ICT = total(ict[0],ict[1],ict[2])

PF = total(pf[0],pf[1],pf[2])

DLD = total(dld[0],dld[1],dld[2])

ICTG = grade(ict[0],ict[1],ict[2])

PFG = grade(pf[0],pf[1],pf[2])

DLDG = grade(dld[0],dld[1],dld[2])

avrg=(ICT+PF+DLD)/3

print(n,"-",rollno,"\t",name,":")

print("Course Total Grade")

print(sub1,"\t",ICT,"\t",ICTG)

print(sub2,"\t",PF,"\t",PFG)

print(sub3,"\t",DLD,"\t",DLDG)

print("================")

print("OPM","\t",avrg," ",cgpa(avrg))

def PfAverage():

f1 = open("result\_data.txt","r")

totalmarks=0

for i in range(9):

f1.seek((i\*3\*59)+118+48)

totalmarks+=int(f1.read(3).rstrip())

totalmarks+=int(f1.read(3).rstrip())

totalmarks+=int(f1.read(2).rstrip())

f1.read(1)

print(f"Average result of pf is = {totalmarks/9}")

def main():

RESULT()

print()

print("<--------------------TASK B----------------------------->")

PfAverage()

print()

print("<--------------------TASK C----------------------------->")

print()

print("<--------------------TASK D----------------------------->")

print()

print("<--------------------TASK E----------------------------->")

print("answer is in result\_report.txt file")

resultreport()

def resultreport():

f1 = open("result.txt","r")

f2 = open("result\_report.txt","w")

a = f1.readline()

rollno = ["" for i in range(7)]

name = ["" for st in range(7)]

blank = " "

sub1 = ["" for i in range(7)]

sub2 = ["" for i in range(7)]

sub3 = ["" for i in range(7)]

ict = [["" for st in range(3)]for i in range(7)]

pf = [["" for st in range(3)]for i in range(7)]

dld = [["" for st in range(3)]for i in range(7)]

for i in range(7):

c = f1.read(1)

while c !=",":

rollno[i]+= c

c = f1.read(1)

k = f1.read(1)

while k !=",":

name[i] += k

k = f1.read(1)

c = f1.read(1)

while c !=",":

sub1[i] += c

c = f1.read(1)

c = f1.read(1)

while c !=",":

ict[i][0]+=c

c = f1.read(1)

c = f1.read(1)

while c !=",":

ict[i][1]+=c

c=f1.read(1)

c = f1.read(1)

while c !="\n":

ict[i][2]+=c

c=f1.read(1)

c=f1.read(1)

while c !=",":

blank+= c

c = f1.read(1)

k = f1.read(1)

while k !=",":

blank+= k

k = f1.read(1)

c = f1.read(1)

while c !=",":

sub2[i] += c

c = f1.read(1)

c = f1.read(1)

while c !=",":

pf[i][0]+=c

c = f1.read(1)

c = f1.read(1)

while c !=",":

pf[i][1]+=c

c=f1.read(1)

c = f1.read(1)

while c !="\n":

pf[i][2]+=c

c=f1.read(1)

c=f1.read(1)

while c !=",":

blank+= c

c = f1.read(1)

k = f1.read(1)

while k !=",":

blank+= k

k = f1.read(1)

c = f1.read(1)

while c !=",":

sub3[i] += c

c = f1.read(1)

c = f1.read(1)

while c !=",":

dld[i][0]+=c

c = f1.read(1)

c = f1.read(1)

while c !=",":

dld[i][1]+=c

c=f1.read(1)

dld[i][2]+=f1.read(2)

f1.read(1)

for i in range(7):

f2.write(str(i+1)+". "+rollno[i]+" " + name[i]+"\n")

f2.write("sub\t"+"Mid\t"+"Sessional\t"+"Final\t"+" "+"Total\t"+" "+"Grade"+"\n")

f2.write(sub1[i]+"\t")

f2.write(str(ict[i][0])+"\t "+str(ict[i][1])+"\t\t"+str(ict[i][2])+"\t ")

f2.write(str(total(ict[i][0],ict[i][1],ict[i][2]))+"\t")

f2.write(grade(ict[i][0],ict[i][1],ict[i][2])+"\n")

f2.write(sub2[i]+"\t")

f2.write(str(pf[i][0])+"\t "+str(pf[i][0])+"\t\t"+str(pf[i][0])+"\t ")

f2.write(str(total(pf[i][0],pf[i][1],pf[i][2]))+"\t")

f2.write(grade(pf[i][0],pf[i][1],pf[i][2])+"\n")

f2.write(sub3[i]+"\t")

f2.write(str(dld[i][0])+"\t "+str(dld[i][1])+"\t\t"+str(dld[i][2])+"\t ")

f2.write(str(total(dld[i][0],dld[i][1],dld[i][2]))+"\t")

f2.write(grade(dld[i][0],dld[i][1],dld[i][2])+"\n")

f1.close()

f2.close()

main()

TASK1 PART B

def index(Rollno,Array):

i= 0

while i < len(Array):

if Rollno == Array[i]:

return i+1

else:

pass

i+=1

raise Exception(f"{Rollno} is incorrect rollno,write correct roll no")

def cgpa(avrg):

if avrg <= 100 and avrg>=85:

return "A+"

elif avrg <= 84 and avrg>=80:

return "A"

elif avrg <= 79 and avrg>=75:

return "B+"

elif avrg <= 74 and avrg>=70:

return "B"

elif avrg <= 69 and avrg>=65:

return "C+"

elif avrg <= 64 and avrg>=60:

return "C"

elif avrg <= 59 and avrg>=55:

return "C-"

elif avrg <= 54 and avrg>=50:

return "D"

elif avrg <50:

return "F"

def grade(a,b,c):

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return "B"

elif sum <= 69 and sum>=65:

return "C+"

elif sum <= 64 and sum>=60:

return "C"

elif sum <= 59 and sum>=55:

return "C-"

elif sum <= 54 and sum>=50:

return "D"

elif sum <50:

return "F"

def total(a,b,c):

sum = int(a) + int(b) + int(c)

return sum

def namearray(file):

f = file

f.readline()

f.readline()

f.read(10)

name=[""]\*9

rollNo = [""]\*9

blank=""

for i in range(7):

rollNo[i]+=f.read(10)

name[i]+=f.read(32).strip()

c = f.read(1)

while c!="\n":

blank+=c

c = f.read(1)

f.readline()

f.readline()

return rollNo

def main():

f1 = open("result\_data.txt","r+")

r =input("Enter your roll no Completely")

array = namearray(open("result\_data.txt","r+"))

name=""

rollno=""

sub1=""

sub2=""

sub3=""

ict=[0 for i in range(3)]

pf=[0 for i in range(3)]

dld=[0 for i in range(3)]

n = index(r,array)

f1.seek((((n-1)\*3)\*59)+118)

rollno+=f1.read(10)

name+=f1.read(32).strip()

sub1+=f1.read(7).strip()

ict[0]=int(f1.read(3).strip())

ict[1]=int(f1.read(3).strip())

ict[2]=int(f1.read(2).strip())

f1.read(1)

f1.read(42)

sub2+=f1.read(7).strip()

pf[0]=int(f1.read(3).strip())

pf[1]=int(f1.read(3).strip())

pf[2]=int(f1.read(2).strip())

f1.read(1)

f1.read(42)

sub3+=f1.read(7).strip()

dld[0]=int(f1.read(3).strip())

dld[1]=int(f1.read(3).strip())

dld[2]=int(f1.read(2).strip())

f1.read(1)

ICT = total(ict[0],ict[1],ict[2])

PF = total(pf[0],pf[1],pf[2])

DLD = total(dld[0],dld[1],dld[2])

ICTG = grade(ict[0],ict[1],ict[2])

PFG = grade(pf[0],pf[1],pf[2])

DLDG = grade(dld[0],dld[1],dld[2])

avrg=(ICT+PF+DLD)/3

print(f"{name} Updated for roll no {rollno}")

print()

print(n,"-",rollno,"\t",name,":")

print("Course Total Grade")

print(sub1,"\t",ICT,"\t",ICTG)

print(sub2,"\t",PF,"\t",PFG)

print(sub3,"\t",DLD,"\t",DLDG)

print("================")

print("OPM","\t",avrg," ",cgpa(avrg))

main()

TASK 2

class BMP:

pass

def ReadtextBMP(filename):

img = BMP()

file=open(filename,"r")

img.header=file.readline().rstrip()

img.width,img.height=file.readline().rstrip().rsplit(" ")

img.shades=file.readline().rstrip()

img.width=int(img.width)

img.height=int(img.height)

img.shades=int(img.shades)

lines = file.readlines()

img.data=[]

file.close()

for i in lines:

nums = i.rstrip().split(" ")

for num in nums:

img.data.append(int(num))

return img

def main():

fname=input("Enter file name : ")

img = ReadtextBMP(fname)

print("Image properties")

print("================")

print("Signature",img.header)

print("Width", img.width)

print("Height", img.height)

print("Shades", img.shades)

print("Data Size from different ways")

print(len(img.data))

print(img.width\*img.height)

main()