STUDENT EXAMINATION PORTAL

Submitted by

Name of the Student: Swagatam Adak
Enrolment Number: 12022002002169
Section: A
Class Roll Number: 73
Stream: CSE Core
Subject: Programming for Problem Solving with Python
Subject Code: IVC101
Department: Basic Science and Humanities

Under the supervision of
Prof. Dr. Indrajit De

Academic Year: 2022-26

PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT
OF THEREQUIREMENTS FOR THE FIRST SEMESTER

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES
INSTITUTE OF ENGINEERING AND MANAGEMENT,
KOLKATA

CERTIFICATE OF RECOMMENDATION

We hereby recommend that the project prepared under our supervision by **Swagatam Adak,** entitled Student Examination Portal be accepted in partial fulfillment of the requirements for the degree of partial fulfillment of the first semester.

Head of the Department Supervisor Basic Sciences and Humanities IEM, Kolkata	Project

1 Introduction

In this project we create various modules using Python to create databases (as CSV files) in which we can store information about students, courses, batches, departments and marks obtained by students in a particular examination. We can also display pie charts, histograms etc. on the basis of the data stored in the csv files

1.1 Objective

To create various Python modules for a **Student Examination Portal.** Create a student's database of his/her batch, course, department, examination details and generate a report card.

1.2 Organization of the Project

The project is organized into 6 different modules namely studentportal.py, studentpart.py, onlycourse.py, batchonly.py, deptonly.py, and examonly.py. The first module holds the control of the entire portal. It asks us which section we want to open:-

1.Student Details
2.Course Details
3.Batch Details
4.Department Details
5.Examination Details
6.Exit

If we go for the first option we will get into the studentpart.py module and perform various operations on the Student.csv file which will result in changes in the Batch.csv, Result.txt and Course.csv files. If we go for the second option we will get into the onlycourse.py module and perform various operations on the Course.csv file which will result in changes in the Batch.csv, Department.csv and Student.csv files. If we go for the third option we will get into the batchonly.py module and perform various operations on the Batch.csv file which will result in changes in the Department.csv, Student.csv and Course.csv files. If we go for the fourth option we will get into the deptonly.py module and perform various operations on the Department.csv file which will result in changes in the Batch.csv and Course.csv files. If we go for the fifth option we will get into the examonly.py module and display various stats. If you go for the final option we exit the program control.

2 Database Descriptions

Student.csv stores the student id, name roll no. and batch id of various students

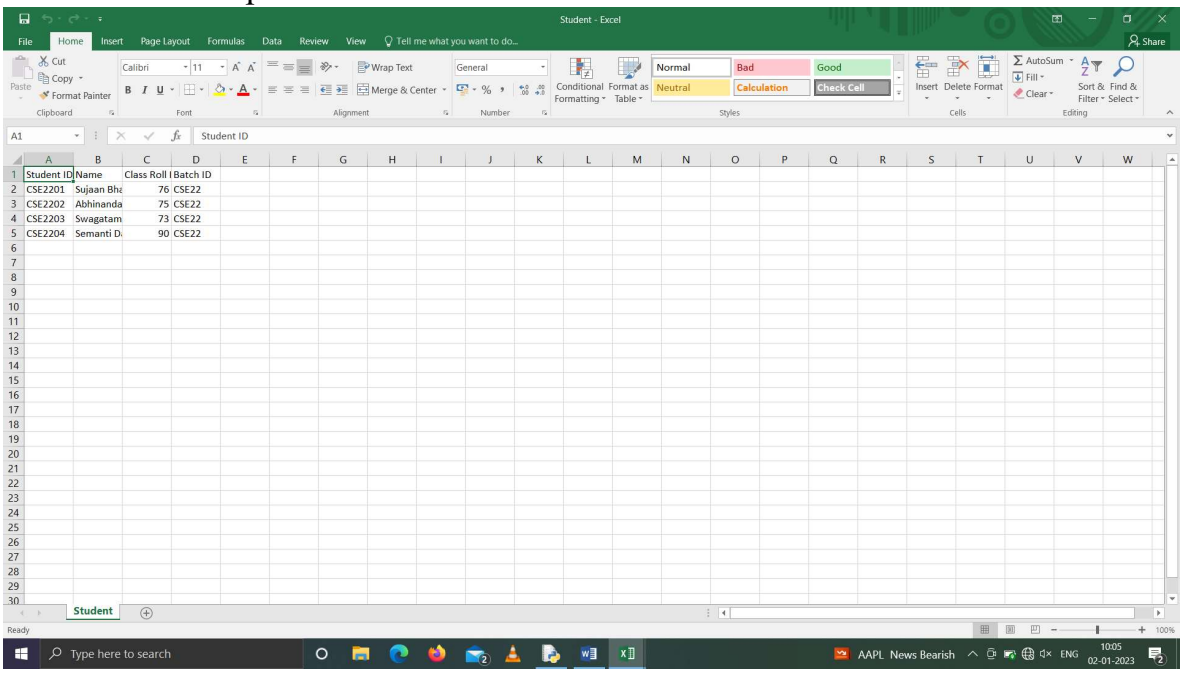
Course.csv stores the course id, course name, and a dictionaries with student ids as keys and their marks in the particular course as values for various courses.

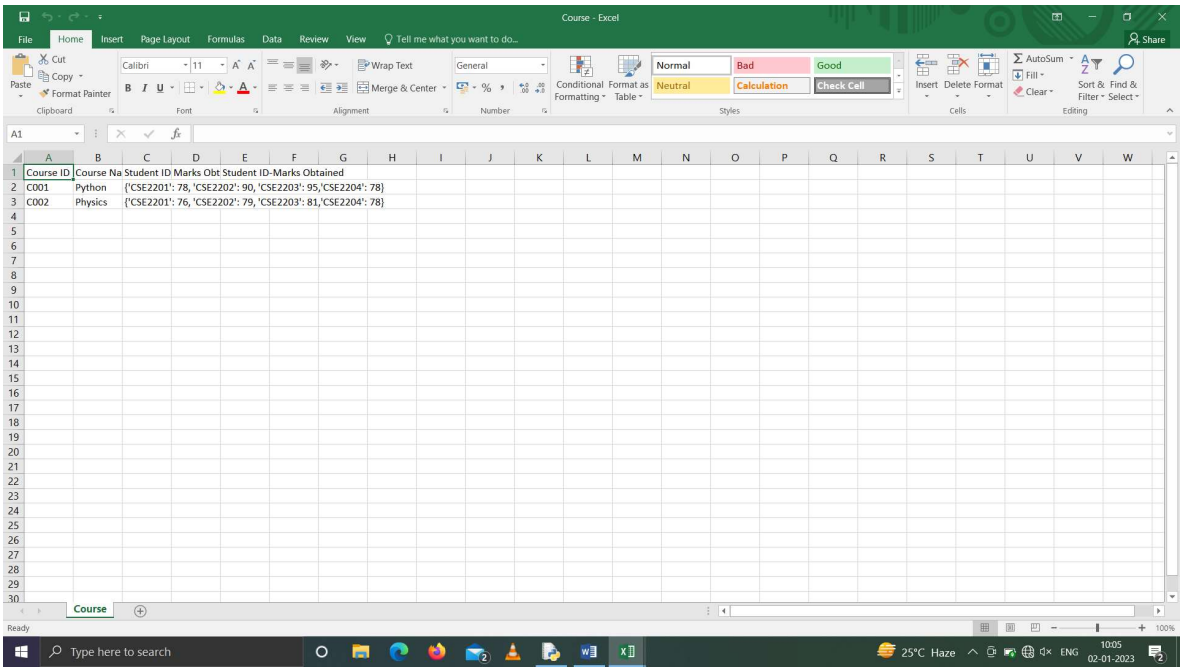
Batch.csv stores the Batch id, Batch name, Department name (id), list of courses in the batch and list of students in the batch for various batches.

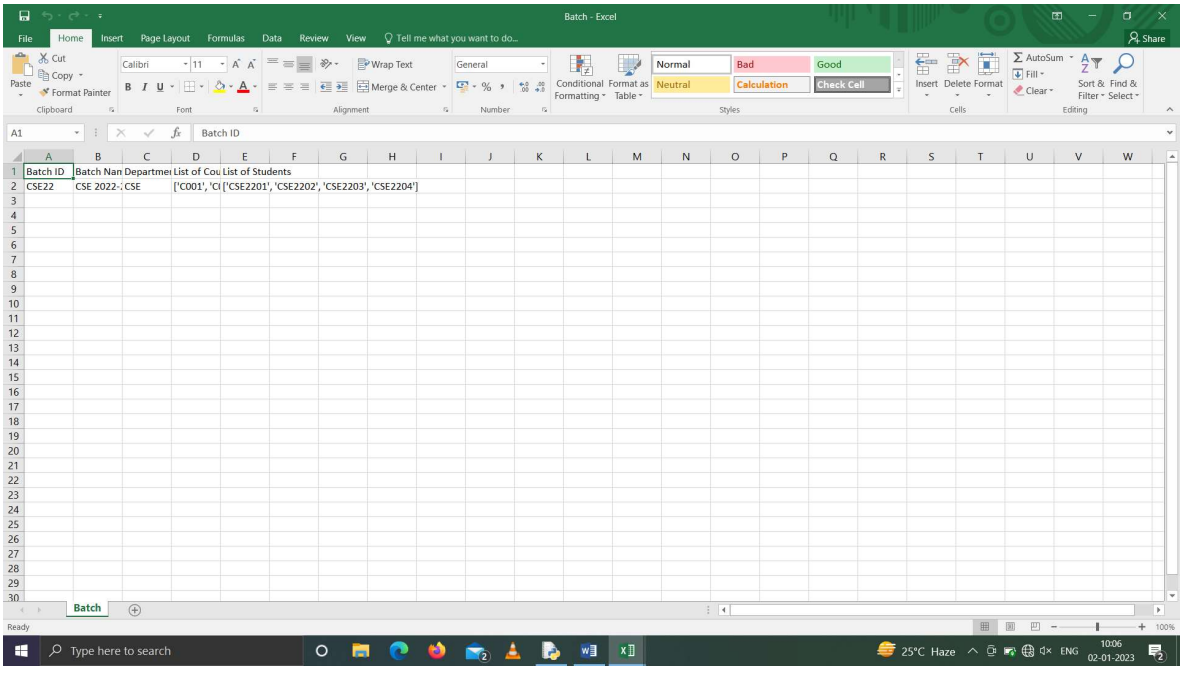
Department.csv stores the department name, department id and the list of batches in the department for various departments

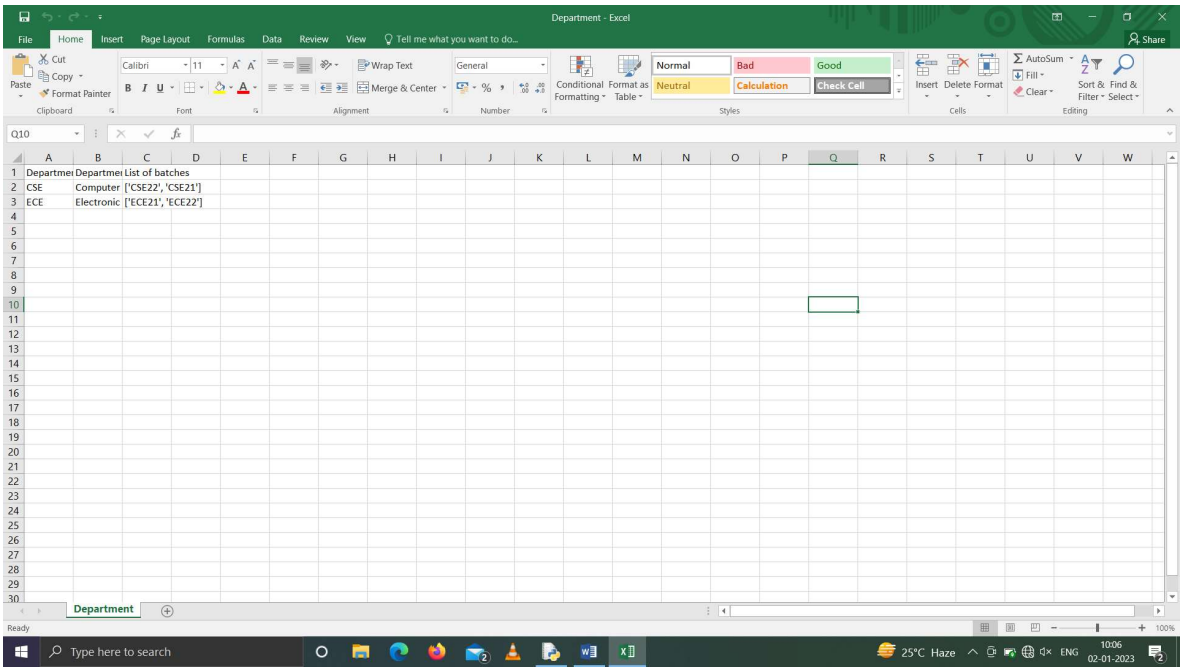
2.1 Database Samples

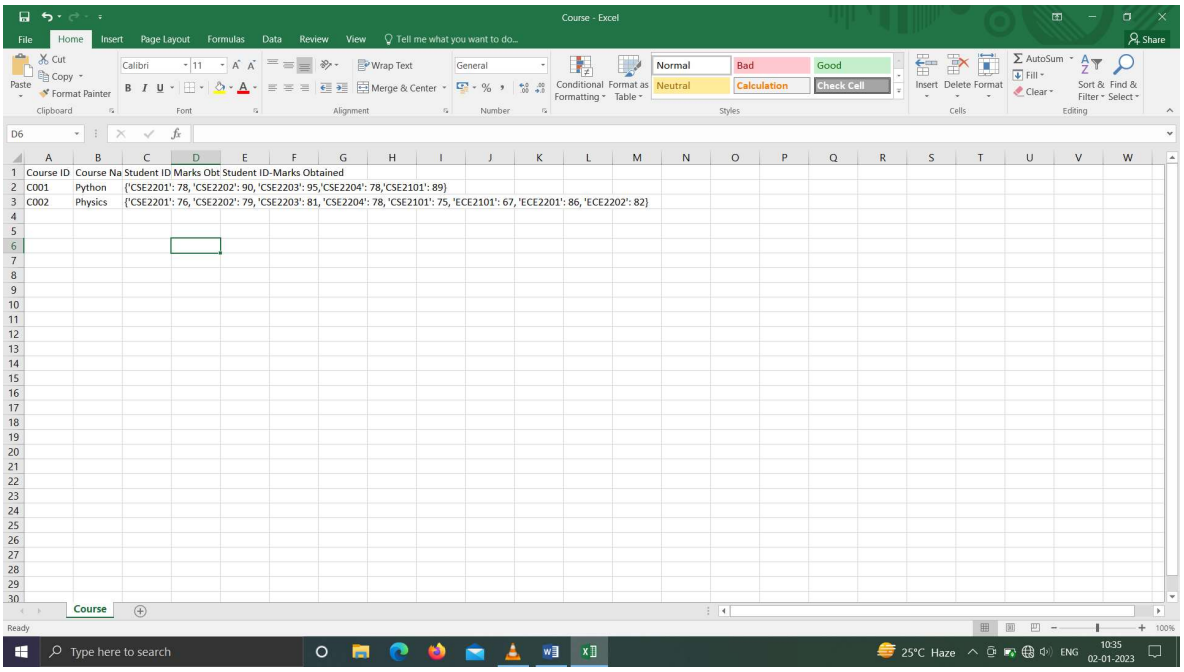
Provides samples of the database that are created or used.

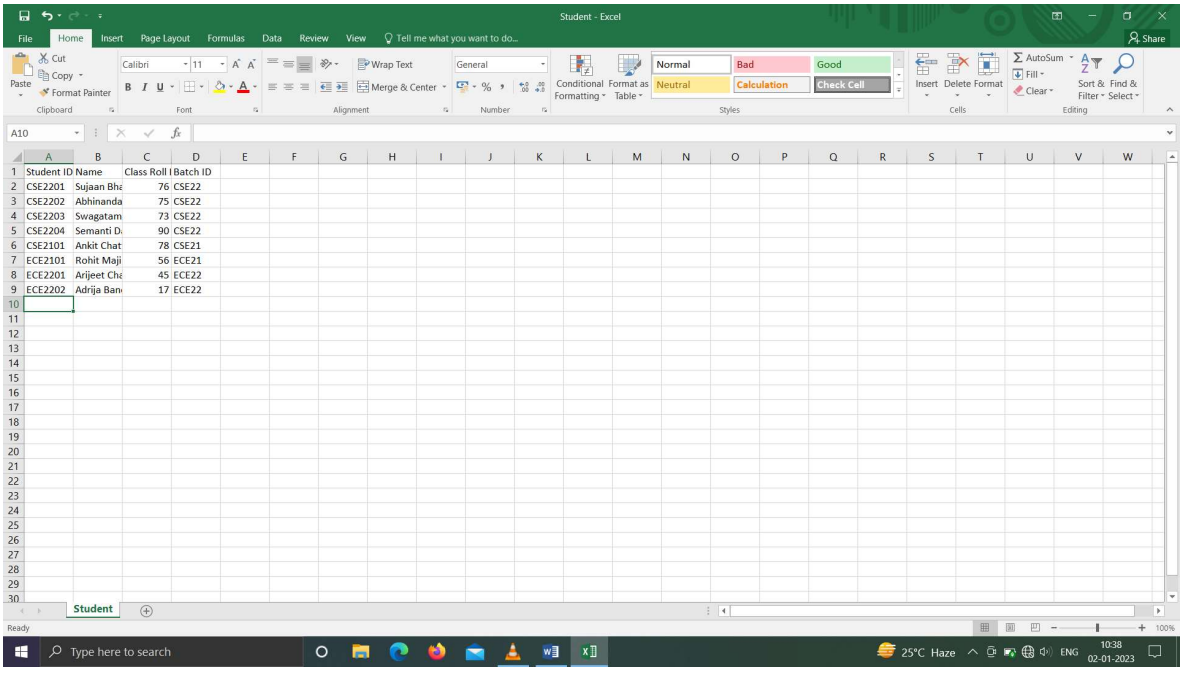


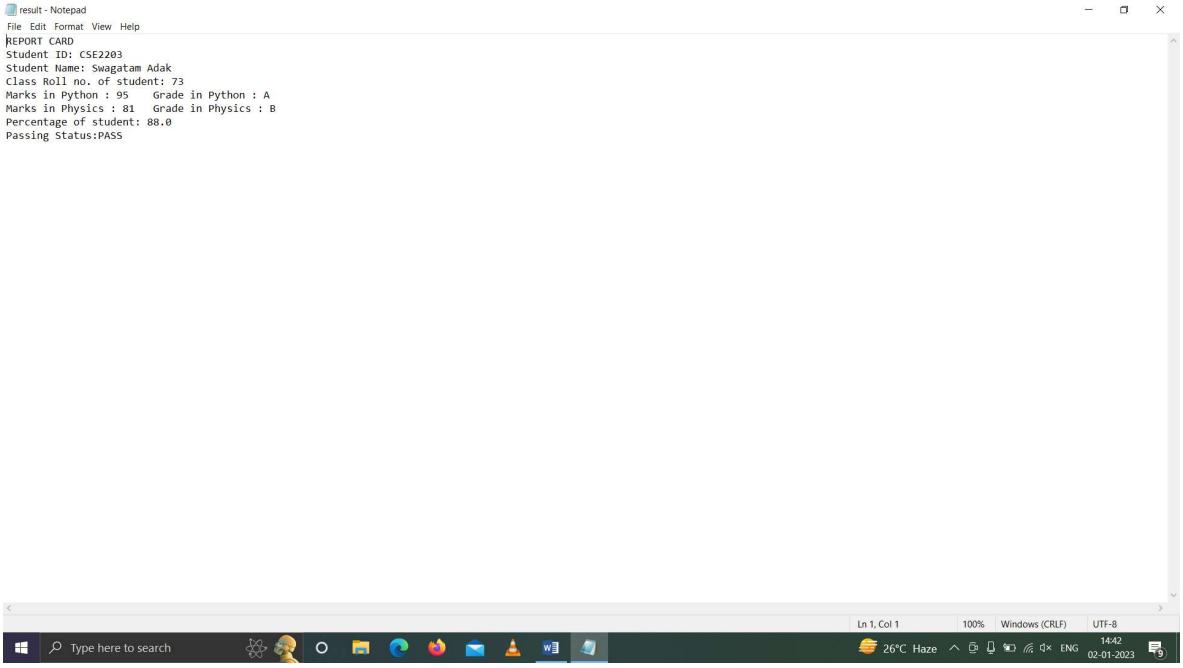

Course - Excel
Course ID
Course Na
Student ID Marks Obt
Student ID-Marks Obtained
C001
Python
{'CSE2201': 78, 'CSE2202': 90, 'CSE2203': 95,'CSE2204': 78}
C002
Physics
{'CSE2201': 76, 'CSE2202': 79, 'CSE2203': 81,'CSE2204': 78}
Course
Type here to search
25°C Haze
ENG
10:05
02-01-2023


Batch - Excel
Batch ID
Batch Nan
Departmer
List of Cou
List of Students
CSE22
CSE 2022-
CSE
['C001', 'C
['CSE2201', 'CSE2202', 'CSE2203', 'CSE2204']
Batch
Type here to search
25°C Haze
ENG
10:06
02-01-2023


Department - Excel
Department
Batch - Excel
Batch

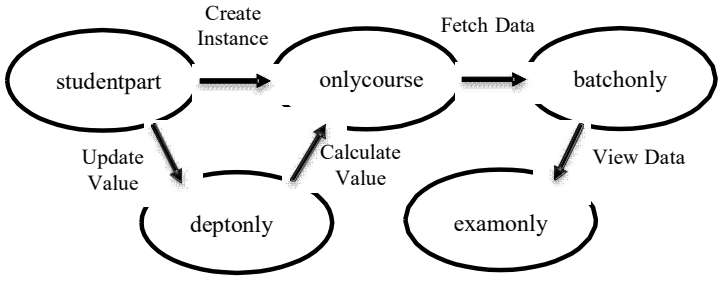

Course - Excel
File Home Insert Page Layout Formulas Data Review View Tell me what you want to do... Share
Paste Cut Copy Format Painter
Calibri 11 Wrap Text Merge & Center General
Conditional Formatting Format as Table
Normal Bad Good Neutral Calculation Check Cell
Insert Delete Format AutoSum Fill Clear Sort & Filter Find & Select
Clipboard Font Alignment Number Styles Cells Editing
D6
Course ID Course Na Student ID Marks Obt Student ID-Marks Obtained
C001 Python {'CSE2201': 78, 'CSE2202': 90, 'CSE2203': 95,'CSE2204': 78,'CSE2101': 89}
C002 Physics {'CSE2201': 76, 'CSE2202': 79, 'CSE2203': 81, 'CSE2204': 78, 'CSE2101': 75, 'ECE2101': 67, 'ECE2201': 86, 'ECE2202': 82}
Course
Ready
Type here to search
25°C Haze ENG 10:35 02-01-2023


Student - Excel
File Home Insert Page Layout Formulas Data Review View Tell me what you want to do... Share
Paste Cut Copy Format Painter
Calibri 11 Wrap Text Merge & Center General
Conditional Formatting Format as Table
Normal Bad Good Neutral Calculation Check Cell
Insert Delete Format AutoSum Fill Clear Sort & Filter Find & Select
Clipboard Font Alignment Number Styles Cells Editing
A10
Student ID Name Class Roll I Batch ID
CSE2201 Sujaan Bha 76 CSE22
CSE2202 Abhinanda 75 CSE22
CSE2203 Swagatam 73 CSE22
CSE2204 Semanti D 90 CSE22
CSE2101 Ankit Chat 78 CSE21
ECE2101 Rohit Maji 56 ECE21
ECE2201 Arijeet Cha 45 ECE22
ECE2202 Adrija Ban 17 ECE22
Student
Ready
Type here to search
25°C Haze ENG 10:38 02-01-2023



3 Data Flow and E-R Diagrams

Demonstrate the dependency of all the python modules written using dataflow diagrams



4 Programs

Provide the python programs of the various modules.

1) rootDir/studentportal.py

```
# Student Examination Portal
import csv
import os
import deptonly
import examonly
import studentpart
import batchonly
import onlycourse



while True:
    print('1.Student Details')
    print('2.Course Details')
    print('3.Batch Details')
    print('4.Department Details')
    print('5.Examination Details')
    print('6.END')
    ch=int(input('Enter your choice:'))
    if ch==1:
        studentpart.studentpart()
    elif ch==2:
        onlycourse.coursepart()
    elif ch==3:
        batchonly.batchonly()
    elif ch==4:
        deptonly.deptonly()
    elif ch==5:
        examonly.exam()
    elif ch==6:
        break
    else:
```

```
        print('INVALID INPUT!!')
        print('Enter again')
```

2) rootDir/studentpart.py

```
import csv
import os
import pandas as pd
import json
path1='Student.csv'
if os.path.isfile(path1):
    pass
else:
    fob1=open('Student.csv','a',newline='')
    wob1=csv.writer(fob1)
    wob1.writerow(['Student ID','Name','Class Roll No.','Batch
ID'])
    fob1.close()

def grading(num):
    var='PASS'
    if num>=90:
        grade='A'
    elif num>=80 and num<90:
        grade='B'
    elif num>=70 and num<80:
        grade='C'
    elif num>=60 and num<70:
        grade='D'
    elif num>=40 and num<60:
        grade='E'
    elif num<40:
        grade='F'
        var='FAIL'
    return([var,grade])

def checkincourse(stuid):
    c,cnm={},''
    f=open('Course.csv','r')
    r=csv.reader(f)
    for row in r:
        if (stuid in eval(row[2])) == True:
            c=eval(row[2])
            cnm=row[1]
    f.close()
    if c!={} and cnm!='':
```

```
            return([cnm,c])
        else:
            return(False)

    def batid(bid):
        l=[]
        f=open('Batch.csv','r')
        r=csv.reader(f)
        for row in r:
            l.append(row[0])
        f.close()
        return (bid in l)

    def studentpart():
        while True:
            print('a.Create a new student')
            print('b.Update student details')
            print('c.Remove a student from the database')
            print('d.Generate report card')
            print('e.Exit')
            ch1=input('Enter your choice:')
            if ch1 in ('a','A'):
                while True:
                    c=0
                    id=input('Enter Student ID:')
                    with open('Student.csv','r') as f:
                        r=csv.reader(f)
                        for i in r:
                            if i[0]==id:
                                c=1
                    if c==1:
                        print("This student already exists.Try
    again!!!")
                        continue
                    nm=input('Enter name of the Student:')
                    croll=input('Enter class roll number:')
                    B_Id=input('Enter Batch ID:')
                    while batid(B_Id)==False:
                        print("Batch doesn't exist.Try again!!!")
                        B_Id=input('Enter Batch ID:')
                    f=open('Student.csv','a',newline='')
                    w=csv.writer(f)
                    w.writerow([id,nm,croll,B_Id])
                    f.close()
                    c,l1,l2,s1,s2=0,[],[],'',''
                    with open('Batch.csv','r') as f:
                        r=csv.reader(f)
                        for i in r:
                            if B_Id==i[0]:
```

```
                            s1=i[3]
                            s1=s1[1:(len(s1)-1)]
                            s1=s1+','
                            x=''
                            for j in s1:
                                if j==',':
                                    l1.append(x)
                                    x=''
                                    continue
                                x=x+j
                            s2=i[4]
                            s2=s2[1:(len(s2)-1)]
                            s2=s2+','
                            x=''
                            for j in s2:
                                if j==',':
                                    l2.append(x)
                                    x=''
                                    continue
                                x=x+j
                            break
                        c=c+1
                l2.append(id)
                df = pd.read_csv("Batch.csv")
                df.loc[c, 'List of Students'] = str(l2)
                df.to_csv('Batch.csv',index=False)
                for i in l1:
                    c,xd=0,{}
                    with open('Course.csv','r') as f:
                        r=csv.reader(f)
                        for j in r:
                            if i==j[0]:
                                xd=eval(j[2])
                                break
                            c=c+1
                    xd[id]=int(input("Enter marks of student
in course"+i+":"))
                    df = pd.read_csv("Course.csv")
                    df.loc[c, 'Student ID-Marks Obtained'] =
str(xd)
                    df.to_csv('Course.csv',index=False)
                sch1=input('Enter more records?(y/n):')
                if sch1 in ('n','N'):
                    break
        elif ch1 in('b','B'):
            while True:
                c,x=-1,0
                id=input('Enter the Student ID of the student
whose details you want to update:')
```

```
                while True:
                    c,x=-1,0
                    with open('Student.csv','r') as f:
                        r=csv.reader(f)
                        for i in r:
                            if i[0]==id:
                                x=1
                                break
                            c=c+1
                    if x==0:
                        print("Student ID does not exist.Try
again!!!")
                        id=input('Enter the Student ID of the
student whose details you want to update:')
                    else:
                        break
                nm=input('Enter name of the Student:')
                roll=input('Enter class roll number:')
                df = pd.read_csv("Student.csv")
                df.loc[c, 'Name'] = nm
                df.loc[c, 'Class Roll No.'] = roll
                df.to_csv('Student.csv',index=False)
                sch2=input('Update more records?(y/n)')
                if sch2 in ('n','N'):
                    break
        elif ch1 in ('c','C'):
            while True:
                c,x=-1,0
                id=input('Enter the Student ID of the student
whose details you want to delete:')
                while True:
                    c,x=-1,0

                    with open('Student.csv','r') as f:
                        r=csv.reader(f)
                        for i in r:
                            if i[0]==id:
                                x=1
                                break
                            c=c+1
                    if x==0:
                        print("Student ID does not exist.Try
again!!!")
                        id=input('Enter the Student ID of the
student whose details you want to delete:')
                    else:
                        break
                df = pd.read_csv("Student.csv")
                df.drop(c,axis=0,inplace=True)
```

```
                sch3=input('Delete more records?(y/n)')
                if sch3 in ('n','N'):
                    break
        elif ch1 in('d','D'):
            while True:
                c,x,li,nm,roll=0,0,[],'',0
                id=input('Enter the Student ID of the student
whose report card you want to generate:')
                while True:
                    x=0

                    with open('Student.csv','r') as f:
                        r=csv.reader(f)
                        for i in r:
                            if i[0]==id:
                                nm,roll,x=i[1],i[2],1
                                break
                    if x==0:
                        print("Student ID does not exist.Try
again!!!")
                        id=input('Enter the Student ID of the
student whose report card you want to generate:')
                    else:
                        break
                c,d,Tmarks=0,{},0
                with open('Course.csv','r') as f :
                    r=csv.reader(f)
                    for i in r:
                        if id in i[2]:
                            d[i[1]]=(eval(i[2]))[id]
                            Tmarks=Tmarks+(eval(i[2]))[id]
                            c=c+1
                with open('Result.txt','w+') as file:
                    file.write("REPORT CARD\n")
                    file.write("Student ID: "+id+'\n')
                    file.write("Student Name: "+nm+'\n')
                    file.write("Class Roll no. of student:
"+roll+'\n')
                    for i in d:
                        file.write("Marks in "+i+" :
"+str(d[i])+'\t'+"Grade in "+i+" :
"+str((grading(d[i]))[1])+'\n')
                    file.write("Percentage of student:
"+str(Tmarks/c)+'\n')
                    file.write("Passing
Status:"+str((grading(Tmarks/c))[0])+'\n')
                with open('Result.txt','r') as file:
                    print(file.read())
                sch6=input('Generate more report
```

```
cards?(y/n):')
                if sch6 in ('n','N'):
                    break
        elif ch1 in('e','E'):
            break
        else:
            print('INVALID INPUT!!')
            print('Enter again')
```

3) rootDir/onlycourse.py

```
import csv
import os
import numpy as np
import matplotlib.pyplot as plt
path='Course.csv'
if os.path.isfile(path):
    pass
else:
    fob=open('Course.csv','a',newline='')
    wob=csv.writer(fob)
    wob.writerow(['Course ID','Course Name','Student ID-
Marks Obtained'])
    fob.close()

def check1(id):
    l=[]
    f=open('Course.csv','r')
    r=csv.reader(f)
    for row in r:
        l.append(row[0])
    f.close()
    return (id in l)

def check2(nm):
    l=[]
    f=open('Course.csv','r')
    r=csv.reader(f)
    for row in r:
        l.append(row[1])
    f.close()
    return (nm in l)

def check3(stuid):
    c=False
    f=open('Course.csv','r')
    r=csv.reader(f)
```

```
    for row in r:
        if (stuid in eval(row[2])) == True:
            c=True
    f.close()
    return(c)

def coursepart():
    while True:
        print('a.Create a new course')
        print('b.View performance of all students in the
course')
        print('c.Show course statistics')
        print('d.Exit')
        ch2=input('Enter your choice:')
        if ch2 in ('a','A'):
            while True:
                l2a2,l2a3,l2a4=[],{},[]
                a2=input('Enter Course ID:')
                b2=input('Enter Course Name:')
                if (check1(a2)==True or check2(b2)==True):
                    print("Course already present, Try
again!!")
                    continue
                ask2a1=int(input('Enter the number of
students in the course:'))
                for i in range(0,ask2a1):
                    c2=input(f'Student ID of no. {i+1} :')
                    while True:
                        if c2 in l2a3:
                            print('This Student already
exists in this course!')
                            print('Enter again')
                            c2=input('Student ID:')
                        else:
                            break
                    d2=int(input('Enter the Total marks:'))
                    l2a3[c2]=d2
                l2a4.append([a2,b2,str(l2a3)])
                fob2=open('Course.csv','a',newline='')
                wob2=csv.writer(fob2)
                wob2.writerows(l2a4)
                fob2.close()
                sch2=input('Enter more Courses?(y/n):')
                if sch2 in ('n','N'):
                    break
        elif ch2 in('b','B'):
            while True:
                d,e={},{}
                c=input('Enter course ID:')
```

```
                with open('Course.csv','r') as f1 ,
open('Student.csv','r') as f2 :
                    r1=csv.reader(f1)
                    r2=csv.reader(f2)
                    for i in r1:
                        if i[0]==c:
                            print("Course Name:",i[1])
                            d=eval(i[2])
                    for i in d:
                        e[i]=[]
                    for i in r2:
                        if i[0] in d:
                            e[i[0]].append(i[1])
                            e[i[0]].append(i[2])
                if d=={} and e=={}:
                    print("Course not present.TRY
again!!!")
                    continue
                for i in d:
                    print('Student ID:',i)
                    print('Name:',(e[i])[0])
                    print('Class Roll No.',(e[i])[1])
                    print('Marks in ',i,':',d[i])
                    print('-----------------------------')
                x=input("Check student details of more
courses?(y/n):")
                if x in ('n','N'):
                    break
        elif ch2 in ('c','C'):
            a = np.array([22, 87, 5, 43, 56,
              73, 55, 54, 11,
              20, 51, 5, 79, 31,
              27])

            fig, ax = plt.subplots(figsize =(10, 7))
            ax.hist(a, bins = [0, 25, 50, 75, 100])

            plt.show()
        elif ch2 in('d','D'):
            break
        else:
            print("Invalid Input.Try again!!!")
```

4) rootDir/batchonly.py

```
import csv
import os
import pandas as pd
```

```
import numpy as np
import matplotlib.pyplot as plt

path3='Batch.csv'
if os.path.isfile(path3):
    pass
else:
    f=open('Batch.csv','a',newline='')
    w=csv.writer(f)
    w.writerow(['Batch ID','Batch Name','Department
Name','List of Courses','List of Students'])
    f.close()

def batchid(bid):
    l=[]
    f=open('Batch.csv','r')
    r=csv.reader(f)
    for row in r:
        l.append(row[0])
    f.close()
    return (bid in l)

def grad(num):
    var='PASS'
    if num>=90:
        grade='A'
    elif num>=80 and num<90:
        grade='B'
    elif num>=70 and num<80:
        grade='C'
    elif num>=60 and num<70:
        grade='D'
    elif num>=40 and num<60:
        grade='E'
    elif num<40:
        grade='F'
        var='FAIL'
    return([var,grade])

def batchname(bnm):
    l=[]
    f=open('Batch.csv','r')
    r=csv.reader(f)
    for row in r:
        l.append(row[1])
    f.close()
    return (bnm in l)

def batchonly():
```

```
    while True:
        print('a.Create a new batch')
        print('b.View list of all students in a batch')
        print('c.View list of all courses taught in the
batch')
        print('d.View complete performance of all students
in a batch')
        print('e.Pie chart of percentage of all students in
a batch')
        print('f.EXIT')
        ch3=input('Enter your choice:')
        if ch3 in ('a','A'):
            while True:
                l1,l2,l3=[],[],[]
                bid=input('Enter Batch ID:')
                while batchid(bid)==True:
                    print("Batch already exists.Try
again!!!")
                    bid=input('Enter Batch ID:')
                bnm=input('Enter Batch Name:')

                while batchname(bnm)== True:
                    print("Batch already exists.Try
again!!!")
                    bnm=input('Enter Batch Name:')
                deptnm=input('Enter Department Name:')
                n1=int(input('Enter the number of courses
in the batch:'))
                n2=int(input('Enter the number of students
in the batch:'))
                for i in range(n1):
                    cid=input(f'Enter Course ID of
No.{i+1}:')
                    while cid in l1:
                        print("Course already exists.Try
again!!!")
                        cid=input(f'Enter Course ID of
No.{i+1}:')
                    l1.append(cid)
                for i in range(n2):
                    stuid=input(f'Enter Student ID of
No.{i+1}:')
                    while stuid in l2:
                        print("Student already exists.Try
again!!!")
                        stuid=input(f'Enter Student ID of
No.{i+1}:')
                    l2.append(stuid)
                l3.append([bid,bnm,deptnm,str(l1),str(l2)])
```

```
                    f=open('Batch.csv','a',newline='')
                    w=csv.writer(f)
                    w.writerows(l3)
                    f.close()
                    sch3=input('Enter more records?(y/n):')
                    if sch3 in ('n','N'):
                        break
            elif ch3 in('b','B'):
                li=[]
                bid=input('Enter the required batch ID:')
                while batchid(bid)==False:
                    print("Batch doesn't exist.Try again!!!")
                    bid=input('Enter Batch ID:')
                with open('Batch.csv','r') as f:
                    r=csv.reader(f)
                    for i in r:
                        if i[0]==bid:
                            li=i[4]
                print('The students enrolled in the given batch
are:')
                print(li)
            elif ch3 in('c','C'):
                li,s1=[],''
                bid=input('Enter the required batch ID:')
                while batchid(bid)==False:
                    print("Batch doesn't exist.Try again!!!")
                    bid=input('Enter Batch ID:')
                with open('Batch.csv','r') as f:
                    r=csv.reader(f)
                    for i in r:
                        if i[0]==bid:
                            s1=i[3]
                            s1=s1[1:(len(s1)-1)]
                            s1=s1+','
                            x=''
                            for j in s1:
                                if j==',':
                                    li.append(x.strip("'"))
                                    x=''
                                    continue
                                x=x+j
                print('The courses in the given batch are:')
                for i in li:
                    print(i,end=' ')
                print()
            elif ch3 in('d','D'):
                li,s1=[],''
                bid=input('Enter the required batch ID:')
                while batchid(bid)==False:
```

```
                print("Batch doesn't exist.Try again!!!")
                bid=input('Enter Batch ID:')
            with open('Batch.csv','r') as f:
                r=csv.reader(f)
                for i in r:
                    if i[0]==bid:
                        s1=i[4]
                        s1=s1[1:(len(s1)-1)]
                        s1=s1+','
                        x=''
                        for j in s1:
                            if j==',':

li.append((x.strip()).strip("'"))
                                x=''
                                continue
                            x=x+j
            for i in li:
                print("Student ID:",i)
                with open('Student.csv','r') as f:
                    r=csv.reader(f)
                    for j in r:
                        if i in j[0]:
                            print("Student Name:",j[1])
                            print("Class Roll No. of
student:",j[2])
                c,Tmarks=0,0
                with open('Course.csv','r') as f:
                    r=csv.reader(f)
                    for j in r:
                        if i in j[2]:
                            print("Marks in
",j[1],":",(eval(j[2]))[i])
                            print("Marks in
",j[1],":",grad((eval(j[2]))[i])[1])
                            Tmarks=Tmarks+(eval(j[2]))[i]
                            c=c+1
                print("Percentage of student:",Tmarks/c)
                print("Passing Status:",grad(Tmarks/c)[0])
                print("---------------------------------")
        elif ch3 in('e','E'):
            li,s1,perc,sumperc=[],'',[],0
            bid=input('Enter the required batch ID:')
            while batchid(bid)==False:
                print("Batch doesn't exist.Try again!!!")
                bid=input('Enter Batch ID:')
            with open('Batch.csv','r') as f:
                r=csv.reader(f)
                for i in r:
```

```
                        if i[0]==bid:
                            s1=i[4]
                            s1=s1[1:(len(s1)-1)]
                            s1=s1+','
                            x=''
                            for j in s1:
                                if j==',':

    li.append((x.strip()).strip("'"))
                                        x=''
                                        continue
                                    x=x+j
                        for i in li:
                            print("Student ID:",i)
                            c,Tmarks=0,0
                            with open('Course.csv','r') as f:
                                r=csv.reader(f)
                                for j in r:
                                    if i in j[2]:
                                        Tmarks=Tmarks+(eval(j[2]))[i]
                                        c=c+1
                            perc.append(Tmarks/c)
                            sumperc=sumperc+(Tmarks/c)
                        for i in range(0,len(li)):
                            perc[i]=(perc[i]/sumperc)*100
                        y=np.array(perc)
                        plt.pie(y,labels=li)
                        plt.show()
                    elif ch3 in('f','F'):
                        break
                    else:
                        print("Invalid Input.Try again!!!")
```

5) rootDir/deptonly.py

```
import csv
import os
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np

path='Department.csv'
if os.path.isfile(path):
    pass
else:
    f=open('Department.csv','a',newline='')
    w=csv.writer(f)
    w.writerow(['Department ID','Department Name','List of
```

```
batches'])
    f.close()

def checkdeptid(deptid):
    c=False
    f=open('Department.csv','r')
    r=csv.reader(f)
    for row in r:
        if (deptid in row[0]) == True:
            c=True
            break
    f.close()
    return c

def checkdeptnm(deptnm):
    c=False
    f=open('Department.csv','r')
    r=csv.reader(f)
    for row in r:
        if (deptnm in row[1]) == True:
            c=True
            break
    f.close()
    return c

def studadd(bid):
    li,s1,bmarks=[],0,''
    with open('Batch.csv','r') as f:
        r=csv.reader(f)
        for i in r:
            if i[0]==bid:
                s1=i[4]
                s1=s1[1:(len(s1)-1)]
                s1=s1+','
                x=''
                for j in s1:
                    if j==',':
                        li.append((x.strip()).strip("'"))
                        x=''
                        continue
                    x=x+j
    for i in li:
        c,Tmarks=0,0
        with open('Course.txt','r') as f:
            r=csv.reader(f)
            for j in r:
                if i in j[2]:
                    Tmarks=Tmarks+(eval(j[2]))[i]
                    c=c+1
```

```
        bmarks=bmarks+(Tmarks/c)
    return(bmarks/len(li))

def checkbid(bid):
    c=False
    f=open('Department.csv','r')
    r=csv.reader(f)
    for row in r:
        if (bid in row[2]) == True:
            c=True
            break
    f.close()
    return c


def deptonly():
    while True:
        print('a.Create a new Department')
        print('b.View all batches in a department')
        print('c.View average performance of all batches in
a departmment')
        print('d.Show department statistics')
        print('e.EXIT')
        ch4=input('Enter your choice:')
        if ch4 in('a','A'):
            while True:
                li=[]
                id=input('Enter Department ID:')
                while checkdeptid(id)==True:
                    print('This department exists.Try
again!!!')
                    id=input('Enter Department ID:')
                nm=input('Enter Department Name:')
                while checkdeptnm(nm)==True:
                    print('This department exists.Try
again!!!')
                    nm=input('Enter Department Name:')
                n=int(input('Enter no. of batches in this
department:'))
                bid=[]
                for i in range(0,n):
                    bnm=input(f'Enter name of Batch
{i+1}:')
                    while checkdeptnm(bnm)==True:
                        print('This batch already
exists.Try again!!!')
                        bnm=input(f'Enter name of Batch
{i+1}:')
                    bid.append(bnm)
```

```
                li=[id,nm,bid]
                f=open('Department.csv','a',newline='')
                w=csv.writer(f)
                w.writerow(li)
                f.close()
                sch4=input('Enter more records(y/n):')
                if sch4 in('n','N'):
                    break
        elif ch4 in('b''B'):
            li=[]
            id=input('Enter Department ID:')
            while checkdeptid(id)==False:
                print('This department does not exist.Try
again!!!')
                id=input('Enter Department ID:')
            with open('Department.csv','r') as f:
                r=csv.reader(f)
                for i in r:
                    if id==i[0]:
                        li=i[2]
            print('All The Batches in this Department
are:')
            for i in li:
                print(i,end=' ')
            print()
        elif ch4 in('c','C'):
            li=[]
            id=input('Enter Department ID:')
            while checkdeptid(id)==False:
                print('This department does not exist.Try
again!!!')
                id=input('Enter Department ID:')
            with open('Department.csv','r') as f:
                r=csv.reader(f)
                for i in r:
                    if id==i[0]:
                        li=i[2]
            for i in li:
                print('Average performance of batch ',i," :
",studadd(bid))
        elif ch4 in('d','D'):
            ypoints = np.array([3, 8, 1, 10])
            plt.plot(ypoints, linestyle = 'dotted')
            plt.show()
        elif ch4 in('e','E'):
            break
        else:
            print("Invalid Choice.Try again!!!")
```

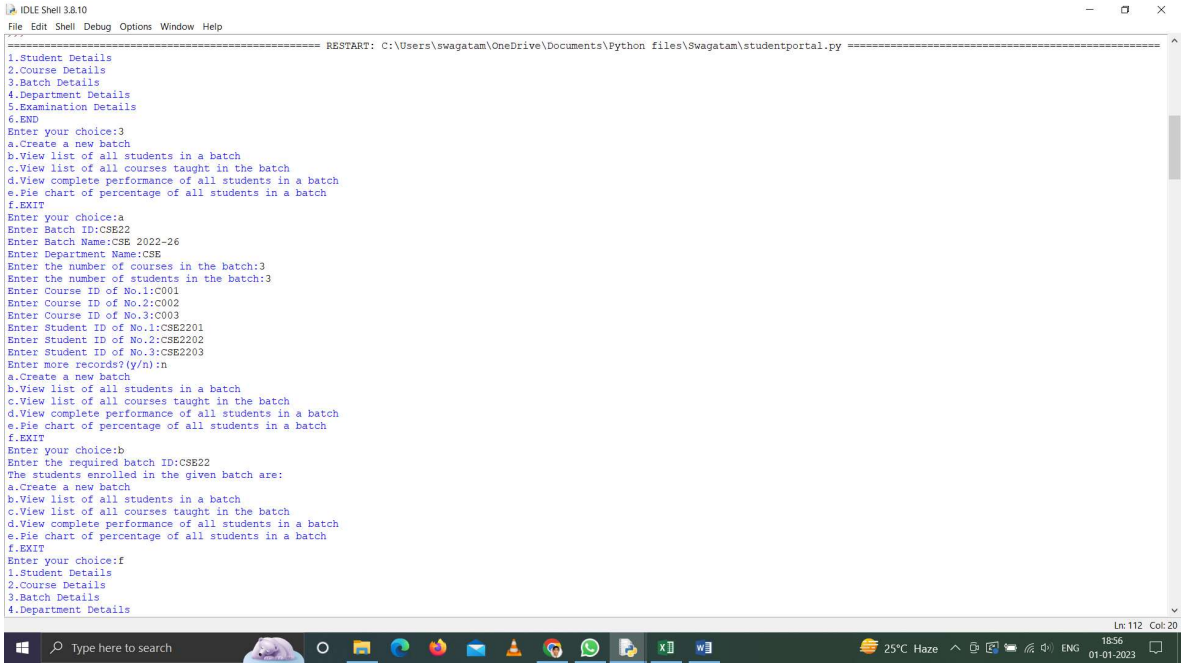
6) rootDir/examonly.py

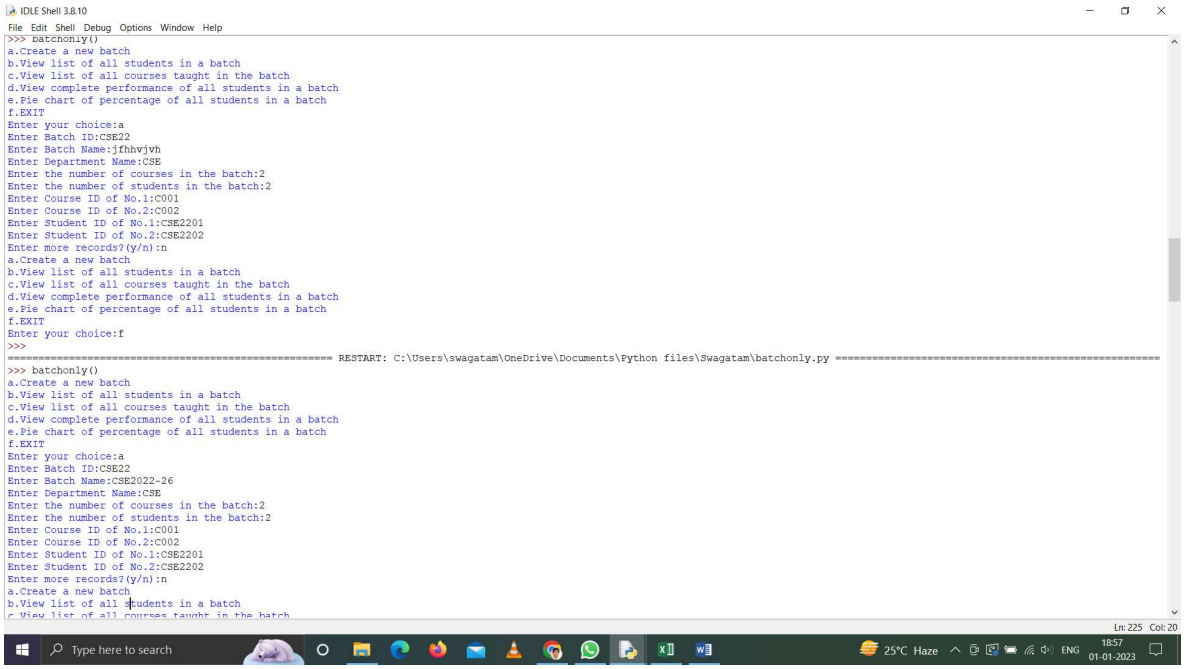
```
import csv
import os
import pandas
import numpy as np
import matplotlib.pyplot as plt

def checkcid(id):
    l=[]
    f=open('Course.csv','r')
    r=csv.reader(f)
    for row in r:
        l.append(row[0])
    f.close()
    return (id in l)




def exam():
    z={}
    while True:
        print('a.Enter the marks of all students for a
specific examination')
        print('b.View performance of all students in the
above examination')
        print('c.Show examination statistics')
        print('d.Exit')
        ch2=input('Enter your choice:')
        m,cid={},''
        if ch2 in ('a','A'):
            cid=input('Enter Course ID:')
            while checkcid(cid)==False:
                print("The course is not present.Try
again!!!")
                cid=input('Enter Course ID:')
            with open('Course.csv','r') as f:
                r=csv.reader(f)
                for i in r:
                    if i[0]==cid:
                        m=eval(i[2])
            for i in m:
                m[i]=int(input("Enter marks of
student:"+i))
            z=m
        elif ch2 in('b','B'):
```

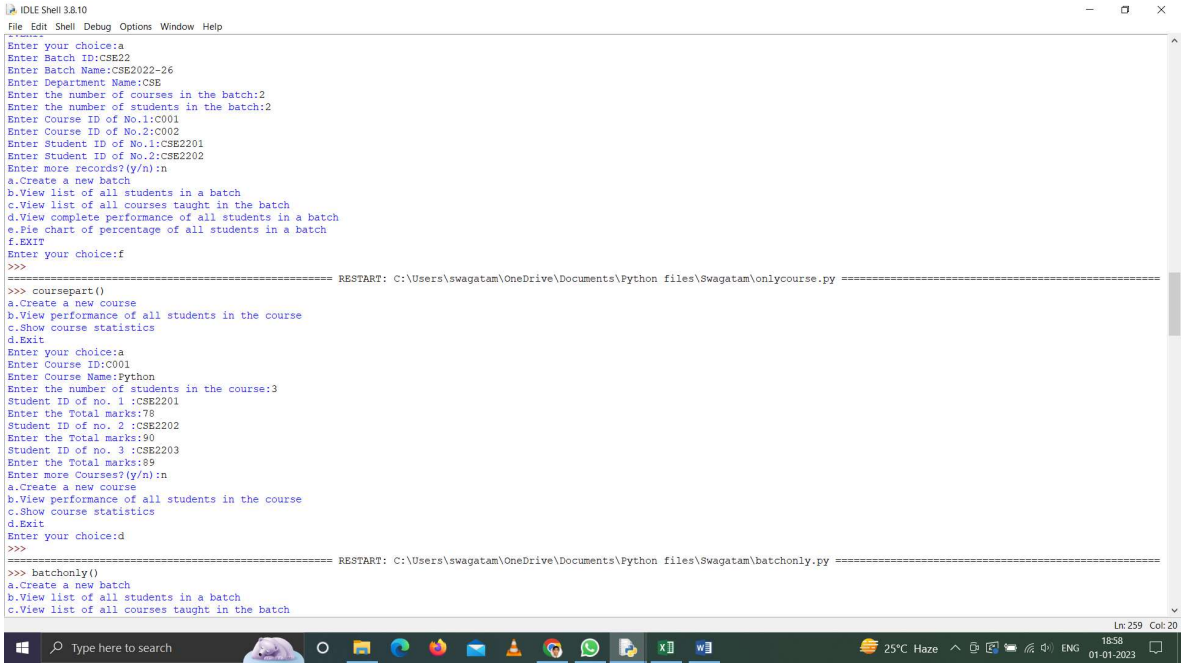
```
            print("Performance of all students enrolled in
the course for ",cid," : ")
            for i in z:
                print("Student
ID:"+i+"\t"+"Marks:"+str(z[i]))
        elif ch2 in('c','C'):
            x = np.array([5,7,8,7,2,17,2,9,4,11,12,9,6])
            y =
np.array([99,86,87,88,81,86,73,87,94,78,77,85,86])
            plt.scatter(x, y)
            x =
np.array([2,2,8,1,15,8,12,9,7,3,11,4,7,14,12])
            y =
np.array([100,90,84,85,90,99,90,95,94,91,79,77,91,80,85])
            plt.scatter(x, y)
            plt.show()
        elif ch2 in('d','D'):
            break
        else:
            print("Invalid Input.Try again!!!")
```

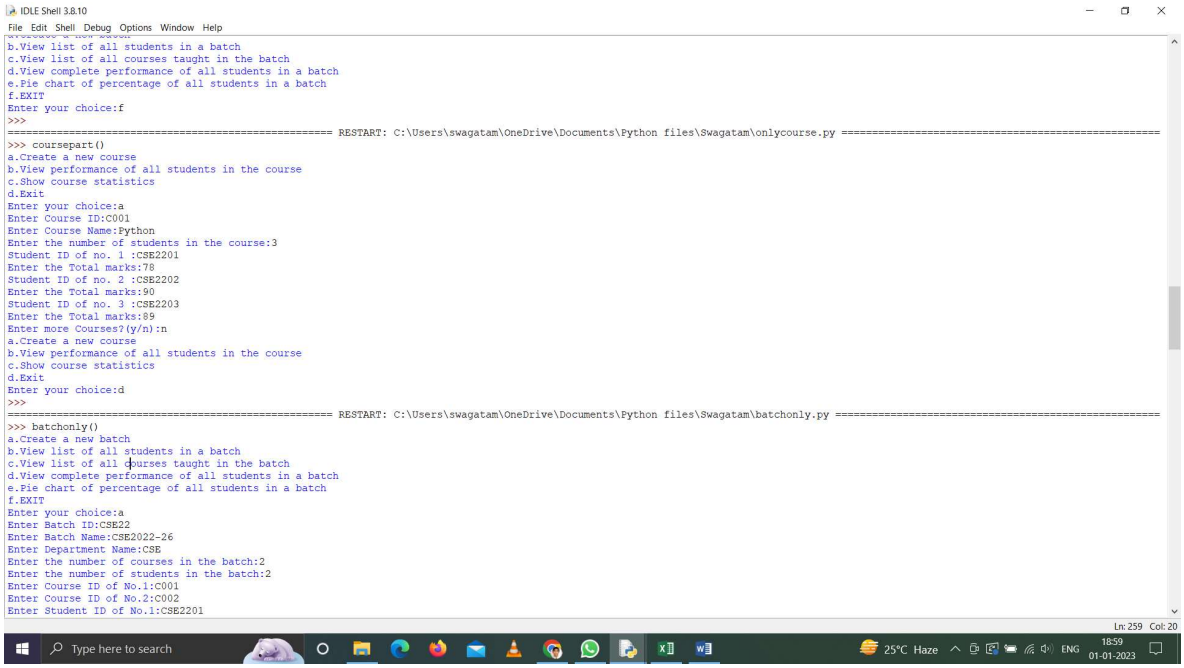
5 Outputs

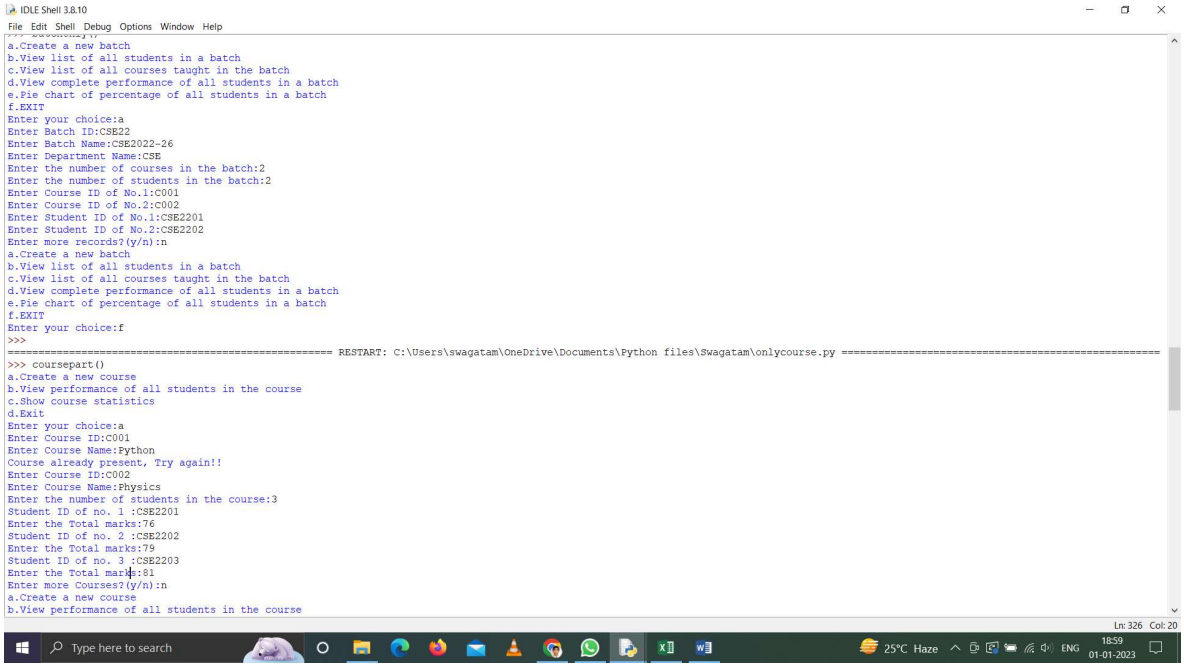
Sample Outputs to demonstrate the functionalities in program

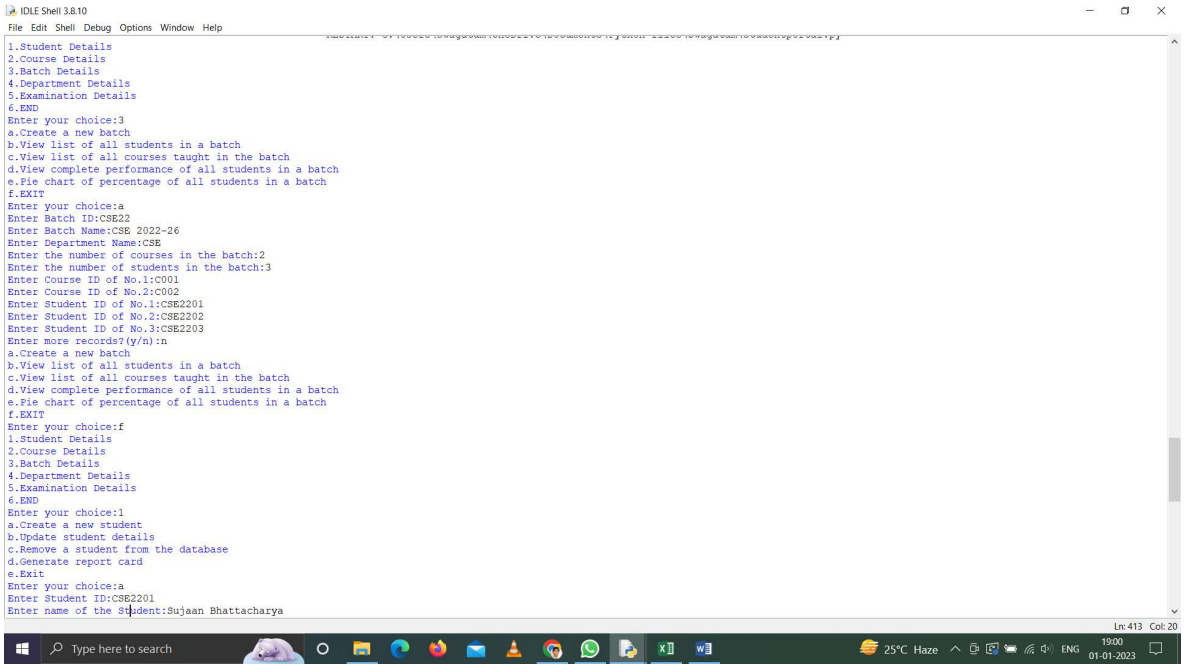

IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\studentportal.py ==========
1.Student Details
2.Course Details
3.Batch Details
4.Department Details
5.Examination Details
6.END
Enter your choice:3
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:a
Enter Batch ID:CSE22
Enter Batch Name:CSE 2022-26
Enter Department Name:CSE
Enter the number of courses in the batch:3
Enter the number of students in the batch:3
Enter Course ID of No.1:C001
Enter Course ID of No.2:C002
Enter Course ID of No.3:C003
Enter Student ID of No.1:CSE2201
Enter Student ID of No.2:CSE2202
Enter Student ID of No.3:CSE2203
Enter more records?(y/n):n
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:b
Enter the required batch ID:CSE22
The students enrolled in the given batch are:
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:f
1.Student Details
2.Course Details
3.Batch Details
4.Department Details
Ln: 112 Col: 20
Type here to search
25°C Haze
ENG
18:56
01-01-2023

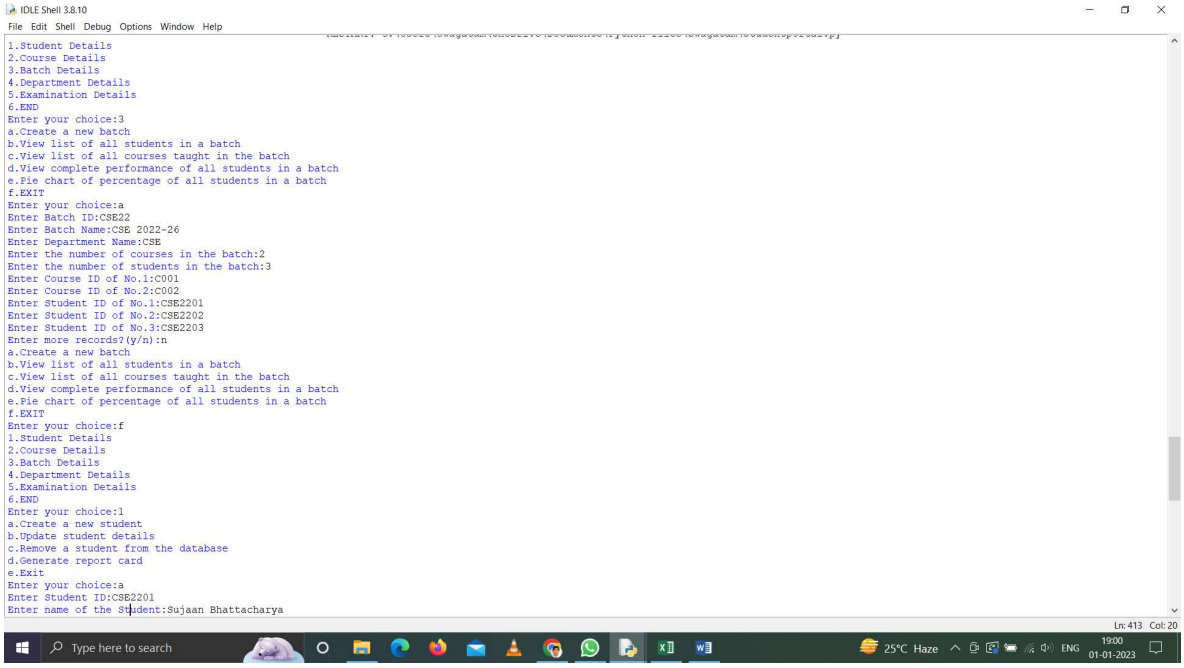

IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
>>> batchonly()
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:a
Enter Batch ID:CSE22
Enter Batch Name:jfhhvjvh
Enter Department Name:CSE
Enter the number of courses in the batch:2
Enter the number of students in the batch:2
Enter Course ID of No.1:C001
Enter Course ID of No.2:C002
Enter Student ID of No.1:CSE2201
Enter Student ID of No.2:CSE2202
Enter more records?(y/n):n
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:f
>>>
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\batchonly.py ==========
>>> batchonly()
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:a
Enter Batch ID:CSE22
Enter Batch Name:CSE2022-26
Enter Department Name:CSE
Enter the number of courses in the batch:2
Enter the number of students in the batch:2
Enter Course ID of No.1:C001
Enter Course ID of No.2:C002
Enter Student ID of No.1:CSE2201
Enter Student ID of No.2:CSE2202
Enter more records?(y/n):n
a.Create a new batch
b.View list of all students in a batch
Ln: 225 Col: 20
Type here to search
25°C Haze
ENG
18:57
01-01-2023

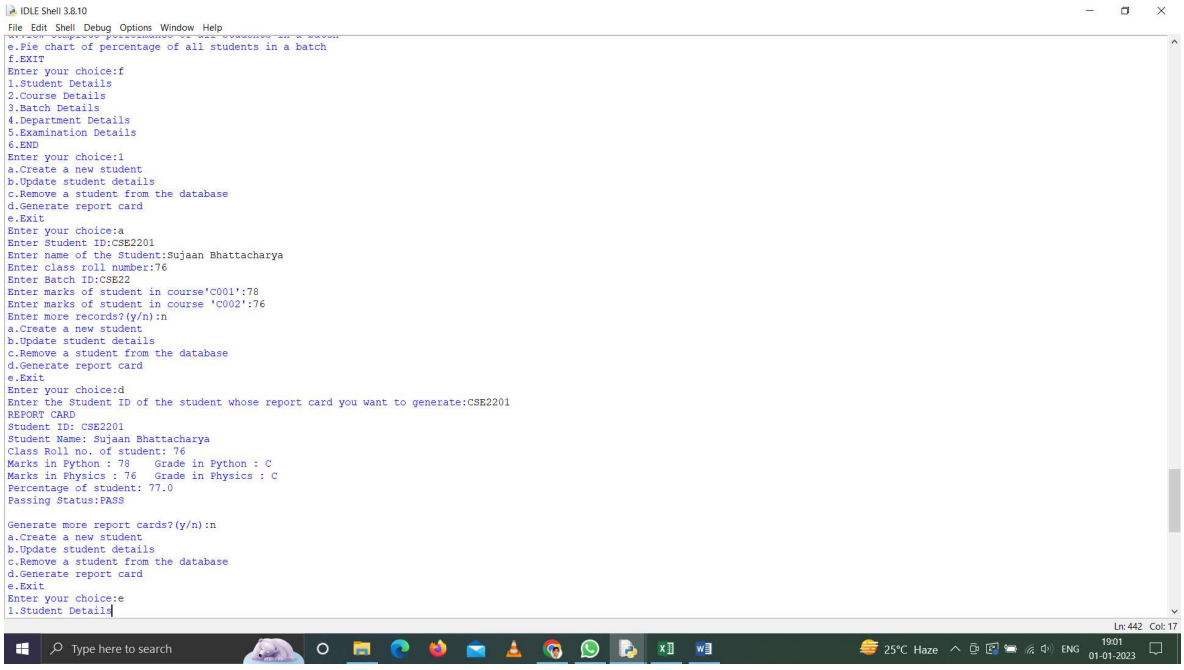

IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
Enter your choice:a
Enter Batch ID:CSE22
Enter Batch Name:CSE2022-26
Enter Department Name:CSE
Enter the number of courses in the batch:2
Enter the number of students in the batch:2
Enter Course ID of No.1:C001
Enter Course ID of No.2:C002
Enter Student ID of No.1:CSE2201
Enter Student ID of No.2:CSE2202
Enter more records?(y/n):n
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:f
>>>
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\onlycourse.py ==========
>>> coursepart()
a.Create a new course
b.View performance of all students in the course
c.Show course statistics
d.Exit
Enter your choice:a
Enter Course ID:C001
Enter Course Name:Python
Enter the number of students in the course:3
Student ID of no. 1 :CSE2201
Enter the Total marks:78
Student ID of no. 2 :CSE2202
Enter the Total marks:90
Student ID of no. 3 :CSE2203
Enter the Total marks:89
Enter more Courses?(y/n):n
a.Create a new course
b.View performance of all students in the course
c.Show course statistics
d.Exit
Enter your choice:d
>>>
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\batchonly.py ==========
>>> batchonly()
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
Ln: 259 Col: 20
Type here to search
25°C Haze
ENG
18:58
01-01-2023

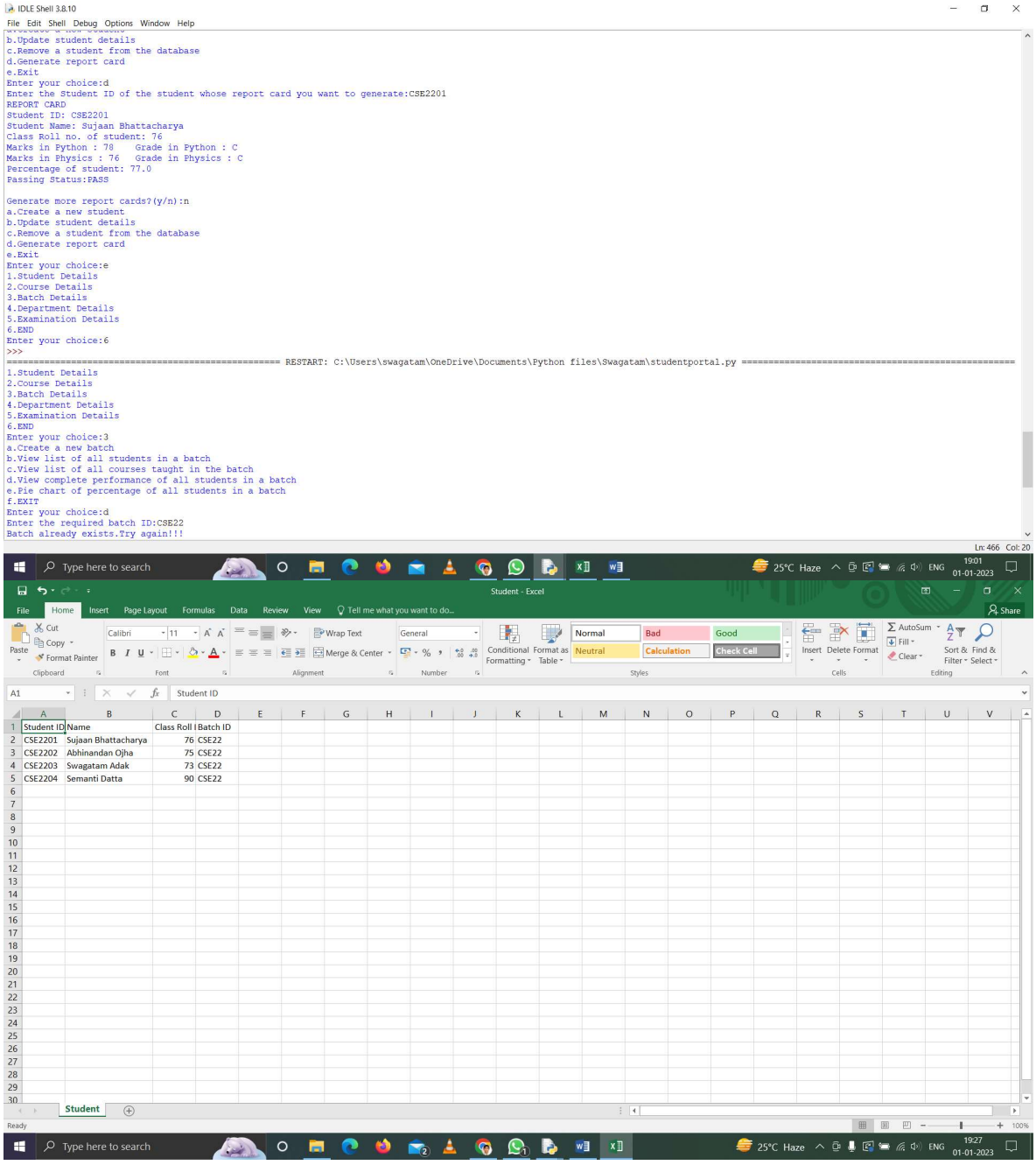

IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:f
>>>
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\onlycourse.py ==========
>>> coursepart()
a.Create a new course
b.View performance of all students in the course
c.Show course statistics
d.Exit
Enter your choice:a
Enter Course ID:C001
Enter Course Name:Python
Enter the number of students in the course:3
Student ID of no. 1 :CSE2201
Enter the Total marks:78
Student ID of no. 2 :CSE2202
Enter the Total marks:90
Student ID of no. 3 :CSE2203
Enter the Total marks:89
Enter more Courses?(y/n):n
a.Create a new course
b.View performance of all students in the course
c.Show course statistics
d.Exit
Enter your choice:d
>>>
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\batchonly.py ==========
>>> batchonly()
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:a
Enter Batch ID:CSE22
Enter Batch Name:CSE2022-26
Enter Department Name:CSE
Enter the number of courses in the batch:2
Enter the number of students in the batch:2
Enter Course ID of No.1:C001
Enter Course ID of No.2:C002
Enter Student ID of No.1:CSE2201
Ln: 259 Col: 20
Type here to search
25°C Haze
ENG
18:59
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:a
Enter Batch ID:CSE22
Enter Batch Name:CSE2022-26
Enter Department Name:CSE
Enter the number of courses in the batch:2
Enter the number of students in the batch:2
Enter Course ID of No.1:C001
Enter Course ID of No.2:C002
Enter Student ID of No.1:CSE2201
Enter Student ID of No.2:CSE2202
Enter more records?(y/n):n
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:f
>>>
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\onlycourse.py ==========
>>> coursepart()
a.Create a new course
b.View performance of all students in the course
c.Show course statistics
d.Exit
Enter your choice:a
Enter Course ID:C001
Enter Course Name:Python
Course already present, Try again!!
Enter Course ID:C002
Enter Course Name:Physics
Enter the number of students in the course:3
Student ID of no. 1 :CSE2201
Enter the Total marks:76
Student ID of no. 2 :CSE2202
Enter the Total marks:79
Student ID of no. 3 :CSE2203
Enter the Total marks:81
Enter more Courses?(y/n):n
a.Create a new course
b.View performance of all students in the course
Ln: 326 Col: 20
Type here to search
25°C Haze
ENG
18:59
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
1.Student Details
2.Course Details
3.Batch Details
4.Department Details
5.Examination Details
6.END
Enter your choice:3
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:a
Enter Batch ID:CSE22
Enter Batch Name:CSE 2022-26
Enter Department Name:CSE
Enter the number of courses in the batch:2
Enter the number of students in the batch:3
Enter Course ID of No.1:C001
Enter Course ID of No.2:C002
Enter Student ID of No.1:CSE2201
Enter Student ID of No.2:CSE2202
Enter Student ID of No.3:CSE2203
Enter more records?(y/n):n
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:f
1.Student Details
2.Course Details
3.Batch Details
4.Department Details
5.Examination Details
6.END
Enter your choice:1
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:a
Enter Student ID:CSE2201
Enter name of the Student:Sujaan Bhattacharya
Ln: 413 Col: 20
Type here to search
25°C Haze
ENG
19:00
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
1.Student Details
2.Course Details
3.Batch Details
4.Department Details
5.Examination Details
6.END
Enter your choice:3
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:a
Enter Batch ID:CSE22
Enter Batch Name:CSE 2022-26
Enter Department Name:CSE
Enter the number of courses in the batch:2
Enter the number of students in the batch:3
Enter Course ID of No.1:C001
Enter Course ID of No.2:C002
Enter Student ID of No.1:CSE2201
Enter Student ID of No.2:CSE2202
Enter Student ID of No.3:CSE2203
Enter more records?(y/n):n
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:f
1.Student Details
2.Course Details
3.Batch Details
4.Department Details
5.Examination Details
6.END
Enter your choice:1
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:a
Enter Student ID:CSE2201
Enter name of the Student:Sujaan Bhattacharya
Ln: 413 Col: 20
Type here to search
25°C Haze
ENG
19:00
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:f
1.Student Details
2.Course Details
3.Batch Details
4.Department Details
5.Examination Details
6.END
Enter your choice:1
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:a
Enter Student ID:CSE2201
Enter name of the Student:Sujaan Bhattacharya
Enter class roll number:76
Enter Batch ID:CSE22
Enter marks of student in course'C001':78
Enter marks of student in course 'C002':76
Enter more records?(y/n):n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:d
Enter the Student ID of the student whose report card you want to generate:CSE2201
REPORT CARD
Student ID: CSE2201
Student Name: Sujaan Bhattacharya
Class Roll no. of student: 76
Marks in Python : 78 Grade in Python : C
Marks in Physics : 76 Grade in Physics : C
Percentage of student: 77.0
Passing Status:PASS
Generate more report cards?(y/n):n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:e
1.Student Details
Ln: 442 Col: 17
Type here to search
25°C Haze
ENG
19:01
01-01-2023



Student ID	Name	Class Roll I	Batch ID
CSE2201	Sujaan Bhattacharya	76	CSE22
CSE2202	Abhinandan Ojha	75	CSE22
CSE2203	Swagatam Adak	73	CSE22
CSE2204	Semanti Datta	90	CSE22

IDLE Shell 3.8.10

File Edit Shell Debug Options Window Help

```
Student ID: CSE2202
Student Name: Abhinandan Ojha
Class Roll no. of student: 75
Marks in Python : 90    Grade in Python : A
Marks in Physics : 79   Grade in Physics : C
Percentage of student: 84.5
Passing Status:PASS

Generate more report cards?(y/n):CSE2204
Enter the Student ID of the student whose report card you want to generate:CSE2204
REPORT CARD
Student ID: CSE2204
Student Name: Semanti Datta
Class Roll no. of student: 90
Marks in Python : 78    Grade in Python : C
Marks in Physics : 78   Grade in Physics : C
Percentage of student: 78.0
Passing Status:PASS

Generate more report cards?(y/n):y
Enter the Student ID of the student whose report card you want to generate:CSE2203
REPORT CARD
Student ID: CSE2203
Student Name: Swagatam Adak
Class Roll no. of student: 73
Marks in Python : 95    Grade in Python : A
Marks in Physics : 81   Grade in Physics : B
Percentage of student: 88.0
Passing Status:PASS

Generate more report cards?(y/n):n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:b
Enter the Student ID of the student whose details you want to update:CSE2202
Enter name of the Student:Deep Banerjee
Enter class roll number:74
Update more records?(y/n)n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:
```

Ln: 614 Col: 22

Type here to search

25°C Haze ENG 19:25 01-01-2023

IDLE Shell 3.8.10

File Edit Shell Debug Options Window Help

Student ID: CSE2202
Student Name: Abhinandan Ojha
Class Roll no. of student: 75
Marks in Python : 90   Grade in Python : A
Marks in Physics : 79   Grade in Physics : C
Percentage of student: 84.5
Passing Status:PASS

Generate more report cards?(y/n):CSE2204
Enter the Student ID of the student
REPORT CARD
Student ID: CSE2204
Student Name: Semanti Datta
Class Roll no. of student: 90
Marks in Python : 78   Grade in Py
Marks in Physics : 78   Grade in Phy
Percentage of student: 78.0
Passing Status:PASS

Generate more report cards?(y/n):y
Enter the Student ID of the student
REPORT CARD
Student ID: CSE2203
Student Name: Swagatam Adak
Class Roll no. of student: 73
Marks in Python : 95   Grade in Py
Marks in Physics : 81   Grade in Phy
Percentage of student: 88.0
Passing Status:PASS

Generate more report cards?(y/n):n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:b
Enter the Student ID of the student
Enter name of the Student:Deep Banerjee
Enter class roll number:74
Update more records?(y/n)n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:

Student - Excel

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do... Share

Paste Calibri 11 Wrap Text General Conditional Formatting Format as Table Cell Styles Insert Delete Format Sort & Filter Find & Select

Clipboard Font Alignment Number Styles Cells Editing

A1 Student ID

	A	B	C	D
1	Student ID	Name	Class Roll I	Batch ID
2	CSE2201	Sujaan Bhattachar	76	CSE22
3	CSE2202	Deep Banerjee	74	CSE22
4	CSE2203	Swagatam Adak	73	CSE22
5	CSE2204	Semanti Datta	90	CSE22

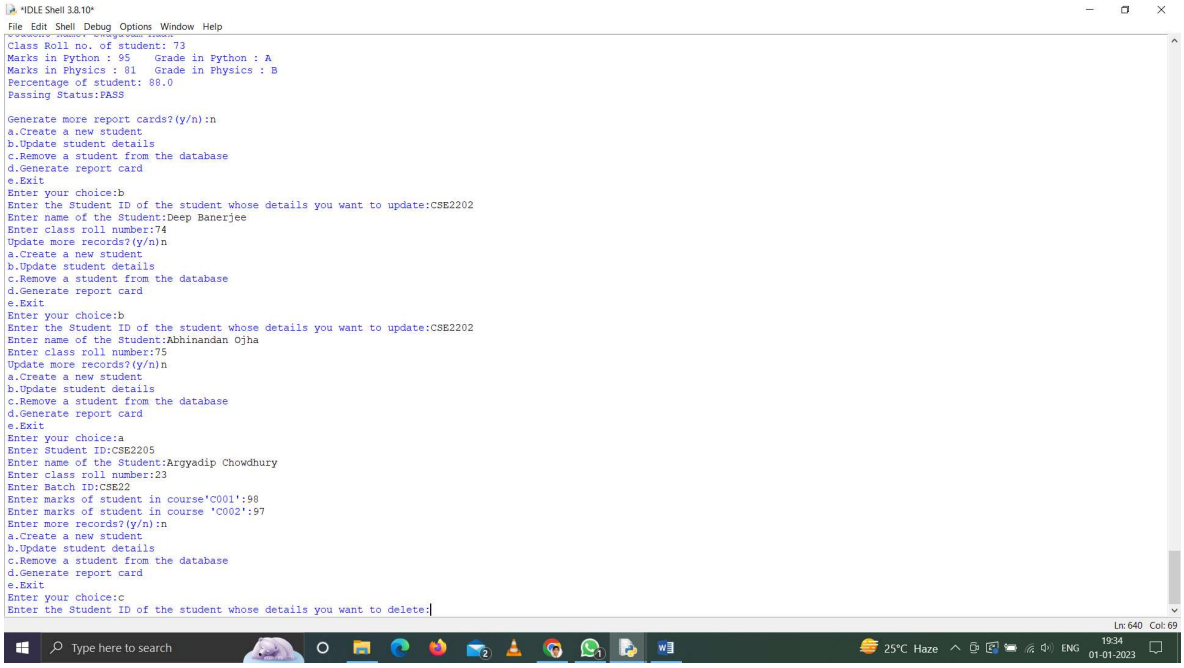
Student

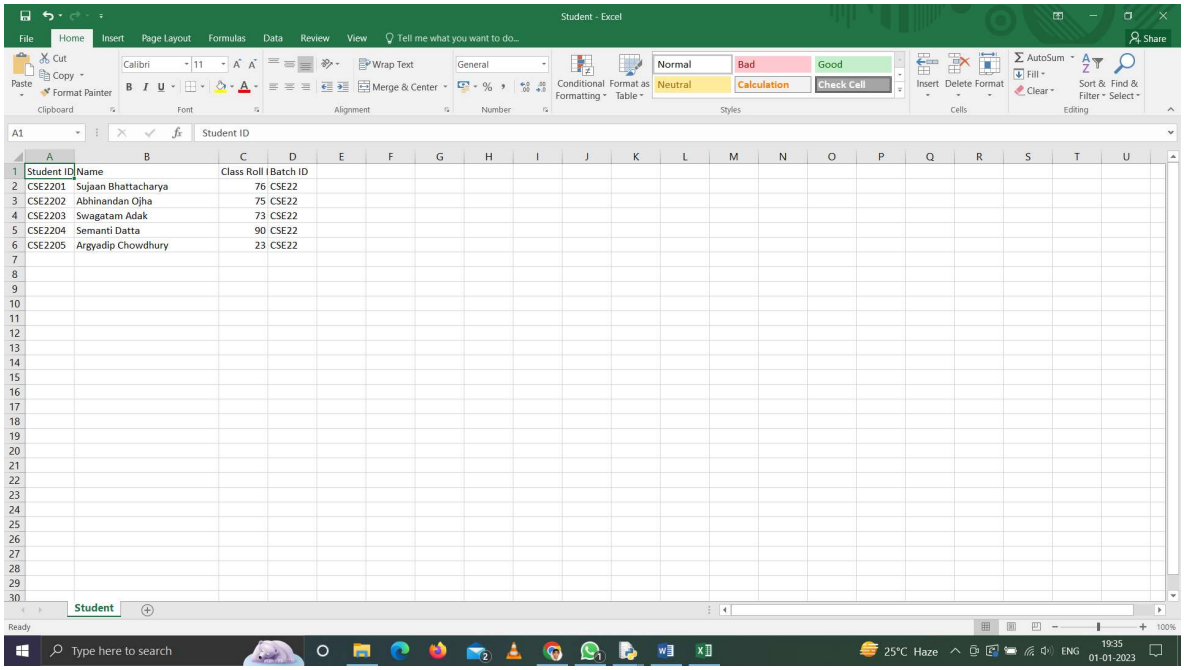
Ready 100%

Ln: 616 Col: 18

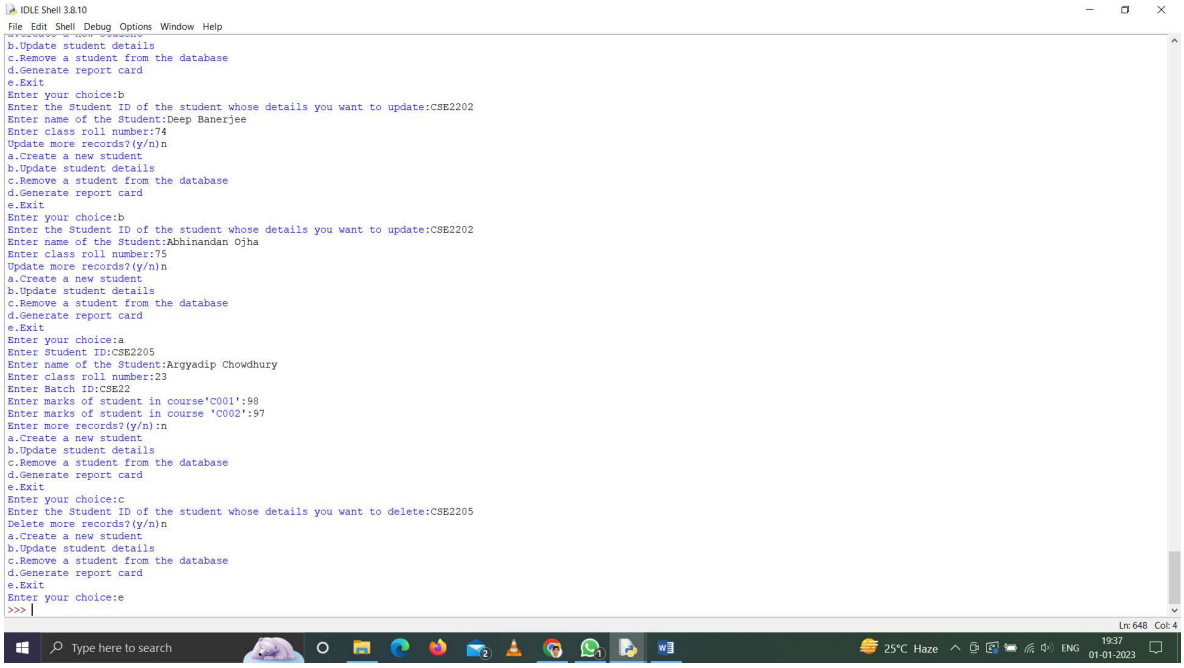
Type here to search

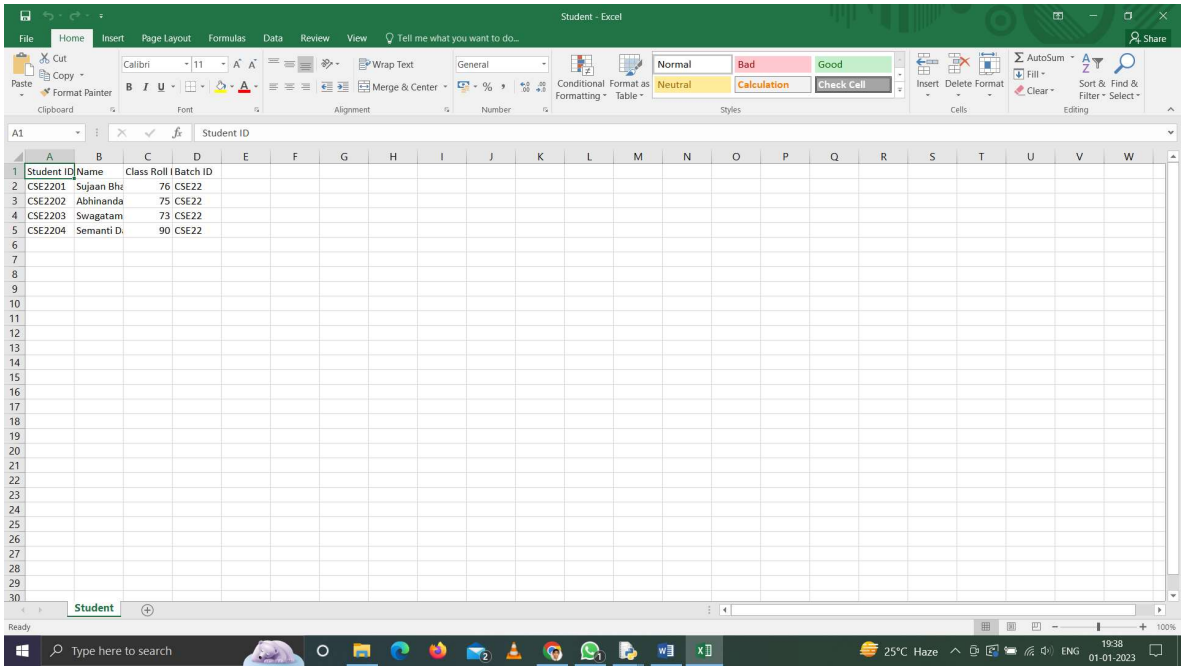
25°C Haze ENG 19:25 01-01-2023

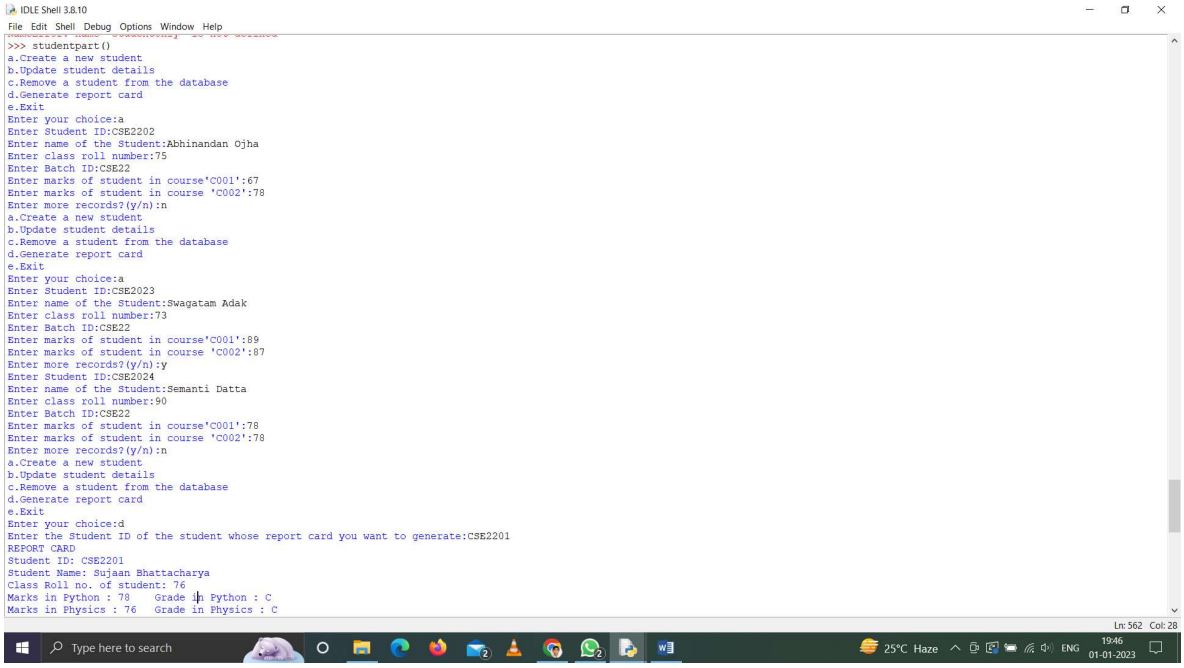


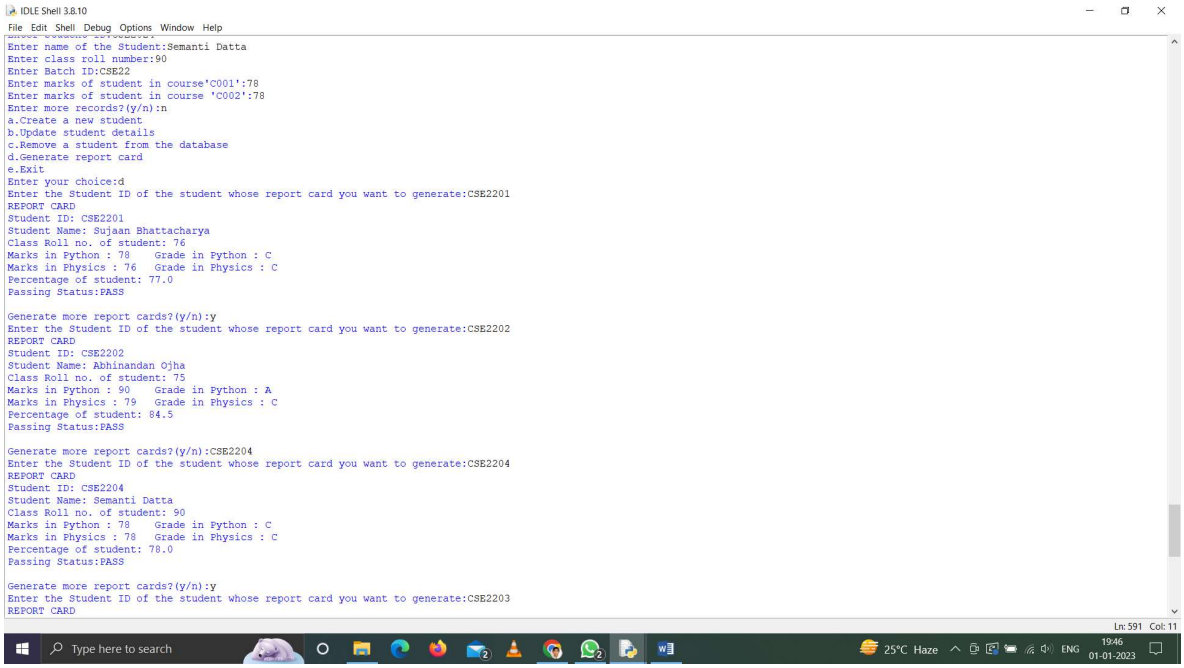


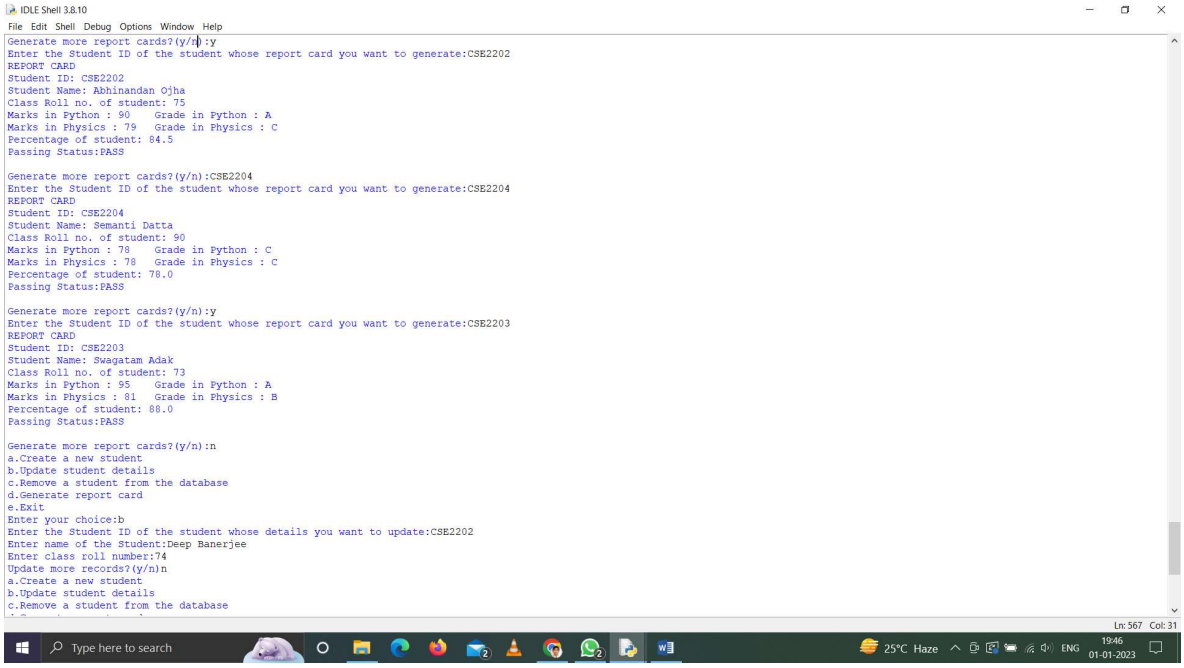
Student ID	Name	Class Roll I	Batch ID
CSE2201	Sujaan Bhattacharya	76	CSE22
CSE2202	Abhinandan Ojha	75	CSE22
CSE2203	Swagatam Adak	73	CSE22
CSE2204	Semanti Datta	90	CSE22
CSE2205	Argyadip Chowdhury	23	CSE22

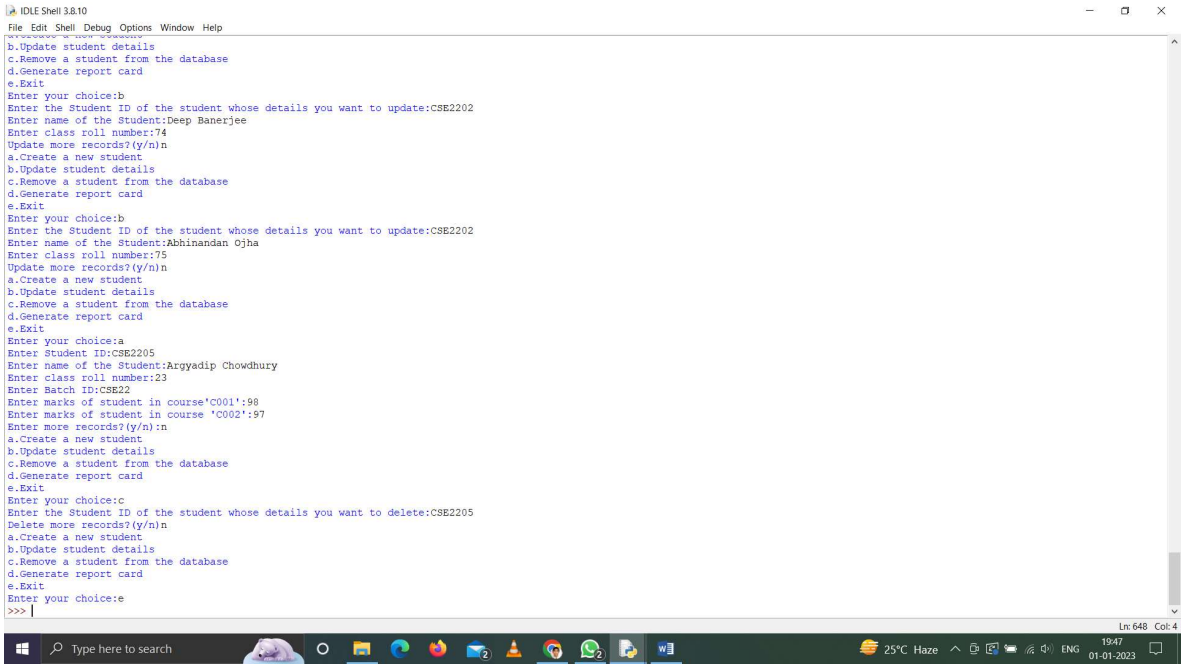

IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:b
Enter the Student ID of the student whose details you want to update:CSE2202
Enter name of the Student:Deep Banerjee
Enter class roll number:74
Update more records?(y/n)n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:b
Enter the Student ID of the student whose details you want to update:CSE2202
Enter name of the Student:Abhinandan Ojha
Enter class roll number:75
Update more records?(y/n)n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:a
Enter Student ID:CSE2205
Enter name of the Student:Argyadip Chowdhury
Enter class roll number:23
Enter Batch ID:CSE22
Enter marks of student in course'C001':98
Enter marks of student in course 'C002':97
Enter more records?(y/n):n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:c
Enter the Student ID of the student whose details you want to delete:CSE2205
Delete more records?(y/n)n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:e
>>>
Ln: 648 Col: 4
Type here to search
25°C Haze
ENG
19:37
01-01-2023

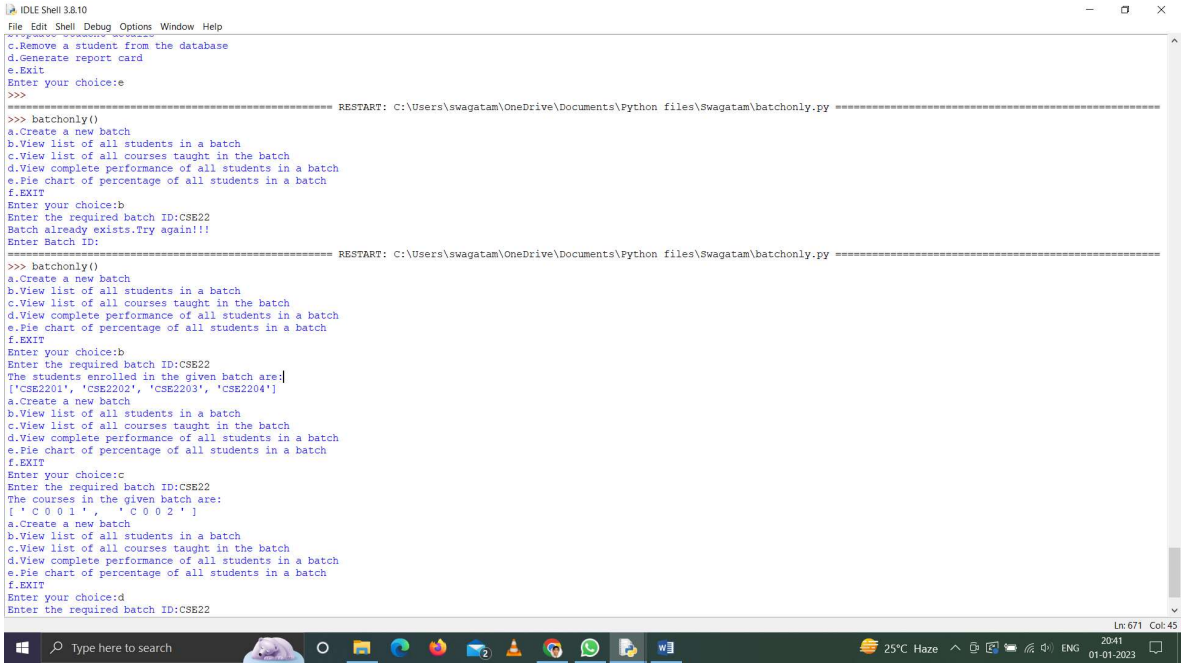

Student - Excel
File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...
Share
Cut
Copy
Format Painter
Paste
Clipboard
Calibri 11
Font
Wrap Text
Merge & Center
Alignment
General
Number
Conditional Formatting
Format as Table
Normal
Bad
Good
Neutral
Calculation
Check Cell
Styles
Insert
Delete
Format
Cells
AutoSum
Fill
Clear
Sort & Filter
Find & Select
Editing
A1
Student ID
Student ID Name Class Roll I Batch ID
CSE2201 Sujaan Bha 76 CSE22
CSE2202 Abhinanda 75 CSE22
CSE2203 Swagatam 73 CSE22
CSE2204 Semanti D 90 CSE22
Student
Ready
100%
Type here to search
25°C Haze
ENG
19:38
01-01-2023

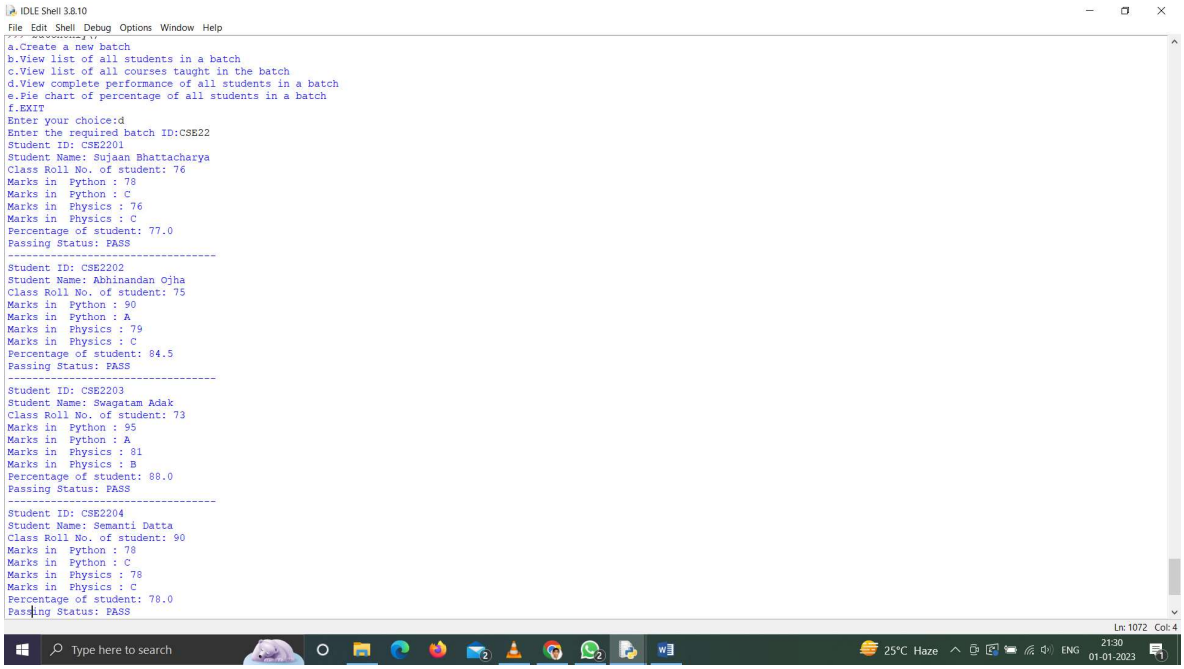

IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
>>> studentpart()
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:a
Enter Student ID:CSE2202
Enter name of the Student:Abhinandan Ojha
Enter class roll number:75
Enter Batch ID:CSE22
Enter marks of student in course'C001':67
Enter marks of student in course 'C002':78
Enter more records?(y/n):n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:a
Enter Student ID:CSE2023
Enter name of the Student:Swagatam Adak
Enter class roll number:73
Enter Batch ID:CSE22
Enter marks of student in course'C001':89
Enter marks of student in course 'C002':87
Enter more records?(y/n):y
Enter Student ID:CSE2024
Enter name of the Student:Semanti Datta
Enter class roll number:90
Enter Batch ID:CSE22
Enter marks of student in course'C001':78
Enter marks of student in course 'C002':78
Enter more records?(y/n):n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:d
Enter the Student ID of the student whose report card you want to generate:CSE2201
REPORT CARD
Student ID: CSE2201
Student Name: Sujaan Bhattacharya
Class Roll no. of student: 76
Marks in Python : 78 Grade in Python : C
Marks in Physics : 76 Grade in Physics : C
Ln: 562 Col: 28
Type here to search
25°C Haze
ENG
19:46
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
Enter name of the Student:Semanti Datta
Enter class roll number:90
Enter Batch ID:CSE22
Enter marks of student in course'C001':78
Enter marks of student in course 'C002':78
Enter more records?(y/n):n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:d
Enter the Student ID of the student whose report card you want to generate:CSE2201
REPORT CARD
Student ID: CSE2201
Student Name: Sujaan Bhattacharya
Class Roll no. of student: 76
Marks in Python : 78 Grade in Python : C
Marks in Physics : 76 Grade in Physics : C
Percentage of student: 77.0
Passing Status:PASS
Generate more report cards?(y/n):y
Enter the Student ID of the student whose report card you want to generate:CSE2202
REPORT CARD
Student ID: CSE2202
Student Name: Abhinandan Ojha
Class Roll no. of student: 75
Marks in Python : 90 Grade in Python : A
Marks in Physics : 79 Grade in Physics : C
Percentage of student: 84.5
Passing Status:PASS
Generate more report cards?(y/n):CSE2204
Enter the Student ID of the student whose report card you want to generate:CSE2204
REPORT CARD
Student ID: CSE2204
Student Name: Semanti Datta
Class Roll no. of student: 90
Marks in Python : 78 Grade in Python : C
Marks in Physics : 78 Grade in Physics : C
Percentage of student: 78.0
Passing Status:PASS
Generate more report cards?(y/n):y
Enter the Student ID of the student whose report card you want to generate:CSE2203
REPORT CARD
Ln: 591 Col: 11
Type here to search
25°C Haze
ENG
19:46
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
Generate more report cards?(y/n):y
Enter the Student ID of the student whose report card you want to generate:CSE2202
REPORT CARD
Student ID: CSE2202
Student Name: Abhinandan Ojha
Class Roll no. of student: 75
Marks in Python : 90 Grade in Python : A
Marks in Physics : 79 Grade in Physics : C
Percentage of student: 84.5
Passing Status:PASS
Generate more report cards?(y/n):CSE2204
Enter the Student ID of the student whose report card you want to generate:CSE2204
REPORT CARD
Student ID: CSE2204
Student Name: Semanti Datta
Class Roll no. of student: 90
Marks in Python : 78 Grade in Python : C
Marks in Physics : 78 Grade in Physics : C
Percentage of student: 78.0
Passing Status:PASS
Generate more report cards?(y/n):y
Enter the Student ID of the student whose report card you want to generate:CSE2203
REPORT CARD
Student ID: CSE2203
Student Name: Swagatam Adak
Class Roll no. of student: 73
Marks in Python : 95 Grade in Python : A
Marks in Physics : 81 Grade in Physics : B
Percentage of student: 88.0
Passing Status:PASS
Generate more report cards?(y/n):n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:b
Enter the Student ID of the student whose details you want to update:CSE2202
Enter name of the Student:Deep Banerjee
Enter class roll number:74
Update more records?(y/n)n
a.Create a new student
b.Update student details
c.Remove a student from the database
Ln: 567 Col: 31
Type here to search
25°C Haze
ENG
19:46
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:b
Enter the Student ID of the student whose details you want to update:CSE2202
Enter name of the Student:Deep Banerjee
Enter class roll number:74
Update more records?(y/n)n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:b
Enter the Student ID of the student whose details you want to update:CSE2202
Enter name of the Student:Abhinandan Ojha
Enter class roll number:75
Update more records?(y/n)n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:a
Enter Student ID:CSE2205
Enter name of the Student:Argyadip Chowdhury
Enter class roll number:23
Enter Batch ID:CSE22
Enter marks of student in course'C001':98
Enter marks of student in course 'C002':97
Enter more records?(y/n):n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:c
Enter the Student ID of the student whose details you want to delete:CSE2205
Delete more records?(y/n)n
a.Create a new student
b.Update student details
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:e
>>>
Ln: 648 Col: 4
Type here to search
25°C Haze
ENG
19:47
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
c.Remove a student from the database
d.Generate report card
e.Exit
Enter your choice:e
>>>
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\batchonly.py ==========
>>> batchonly()
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:b
Enter the required batch ID:CSE22
Batch already exists.Try again!!!
Enter Batch ID:
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\batchonly.py ==========
>>> batchonly()
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:b
Enter the required batch ID:CSE22
The students enrolled in the given batch are:
['CSE2201', 'CSE2202', 'CSE2203', 'CSE2204']
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:c
Enter the required batch ID:CSE22
The courses in the given batch are:
[' C 0 0 1 ' , ' C 0 0 2 ']
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:d
Enter the required batch ID:CSE22
Ln: 671 Col: 45
Type here to search
25°C Haze
ENG
20:41
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
a.Create a new batch
b.View list of all students in a batch
c.View list of all courses taught in the batch
d.View complete performance of all students in a batch
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:d
Enter the required batch ID:CSE22
Student ID: CSE2201
Student Name: Sujaan Bhattacharya
Class Roll No. of student: 76
Marks in Python : 78
Marks in Python : C
Marks in Physics : 76
Marks in Physics : C
Percentage of student: 77.0
Passing Status: PASS

Student ID: CSE2202
Student Name: Abhinandan Ojha
Class Roll No. of student: 75
Marks in Python : 90
Marks in Python : A
Marks in Physics : 79
Marks in Physics : C
Percentage of student: 84.5
Passing Status: PASS

Student ID: CSE2203
Student Name: Swagatam Adak
Class Roll No. of student: 73
Marks in Python : 95
Marks in Python : A
Marks in Physics : 81
Marks in Physics : B
Percentage of student: 88.0
Passing Status: PASS

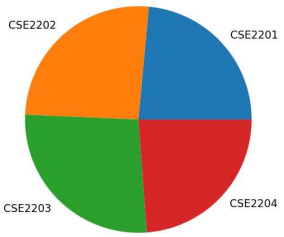
Student ID: CSE2204
Student Name: Semanti Datta
Class Roll No. of student: 90
Marks in Python : 78
Marks in Python : C
Marks in Physics : 78
Marks in Physics : C
Percentage of student: 78.0
Passing Status: PASS
Ln: 1072 Col: 4
Type here to search
25°C Haze
ENG
21:30
01-01-2023

IDLE Shell 3.8.10

File Edit Shell Debug Options Window Help

```
Marks in  Physics : C
Percentage of student: 77.0
Passing Status: PASS
--------------------
Student ID: C
Student Name:
Class Roll No
Marks in  Pyt
Marks in  Pyt
Marks in  Phy
Marks in  Phy
Percentage of
Passing Statu
--------------------
Student ID: C
Student Name:
Class Roll No
Marks in  Pyt
Marks in  Pyt
Marks in  Phy
Marks in  Phy
Percentage of
Passing Statu
--------------------
Student ID: C
Student Name:
Class Roll No
Marks in  Pyt
Marks in  Pyt
Marks in  Phy
Marks in  Phy
Percentage of
Passing Statu
--------------------
a.Create a ne
b.View list o
c.View list o
d.View comple
e.Pie chart of percentage of all students in a batch
f.EXIT
Enter your choice:e
Enter the required batch ID:CSE22
Student ID: CSE2201
Student ID: CSE2202
Student ID: CSE2203
Student ID: CSE2204
```

Figure 1



Ln: 1086 Col: 0

Type here to search 25°C Haze ENG 21:29 01-01-2023

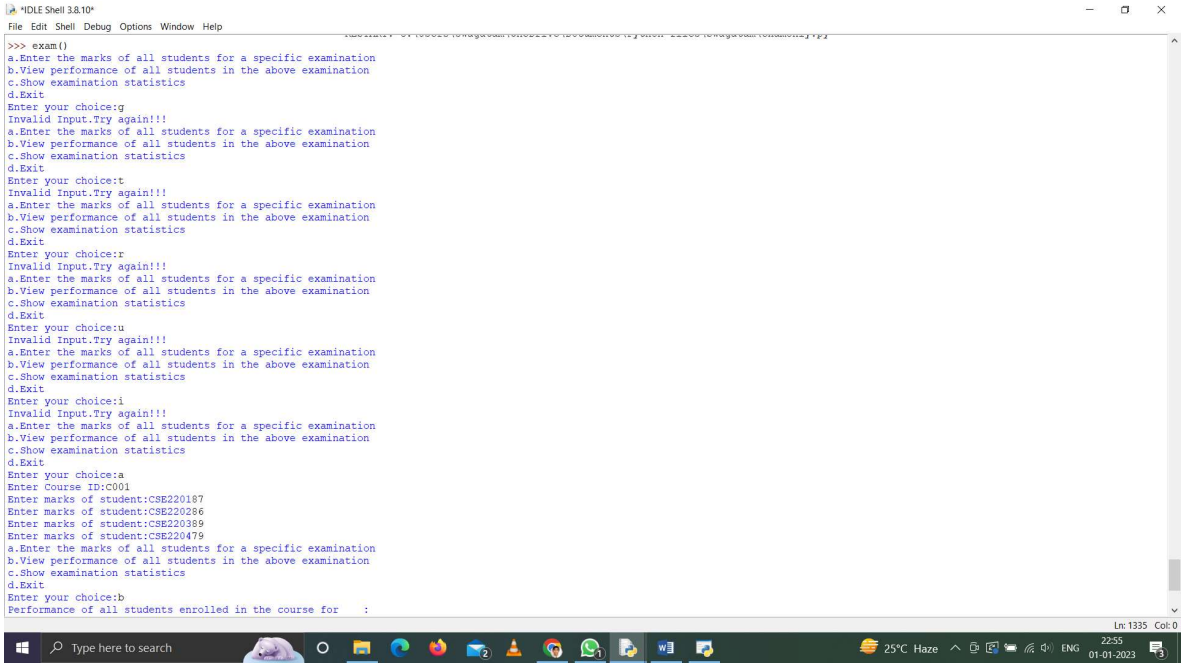
IDLE Shell 3.8.10

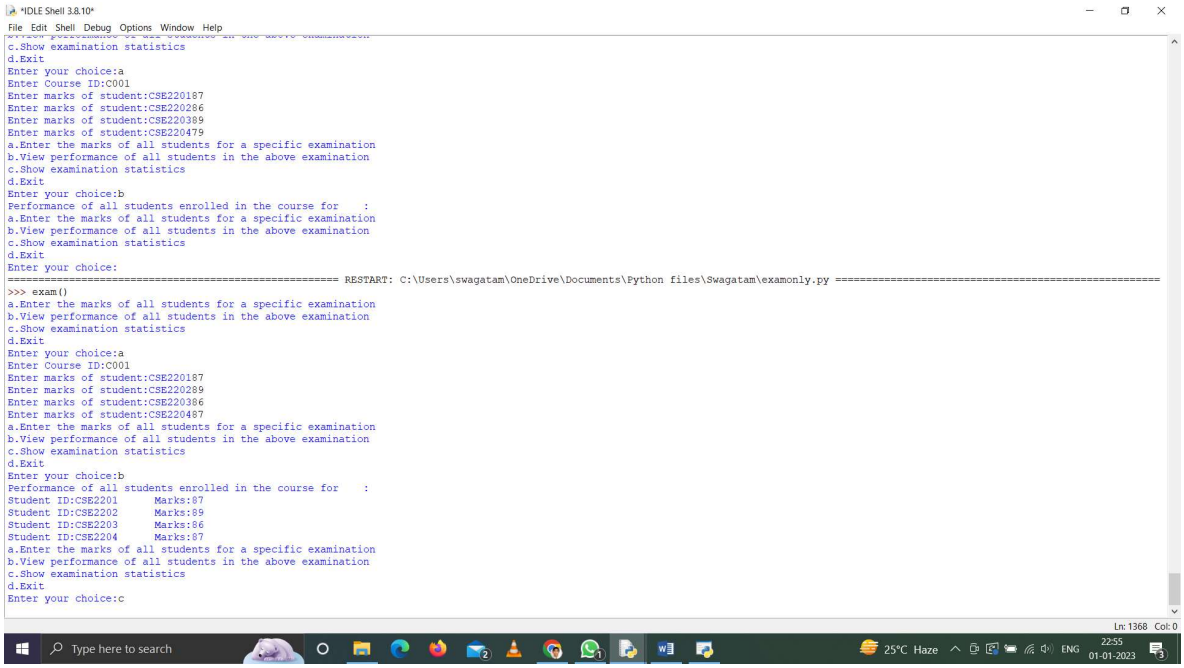
File Edit Shell Debug Options Window Help

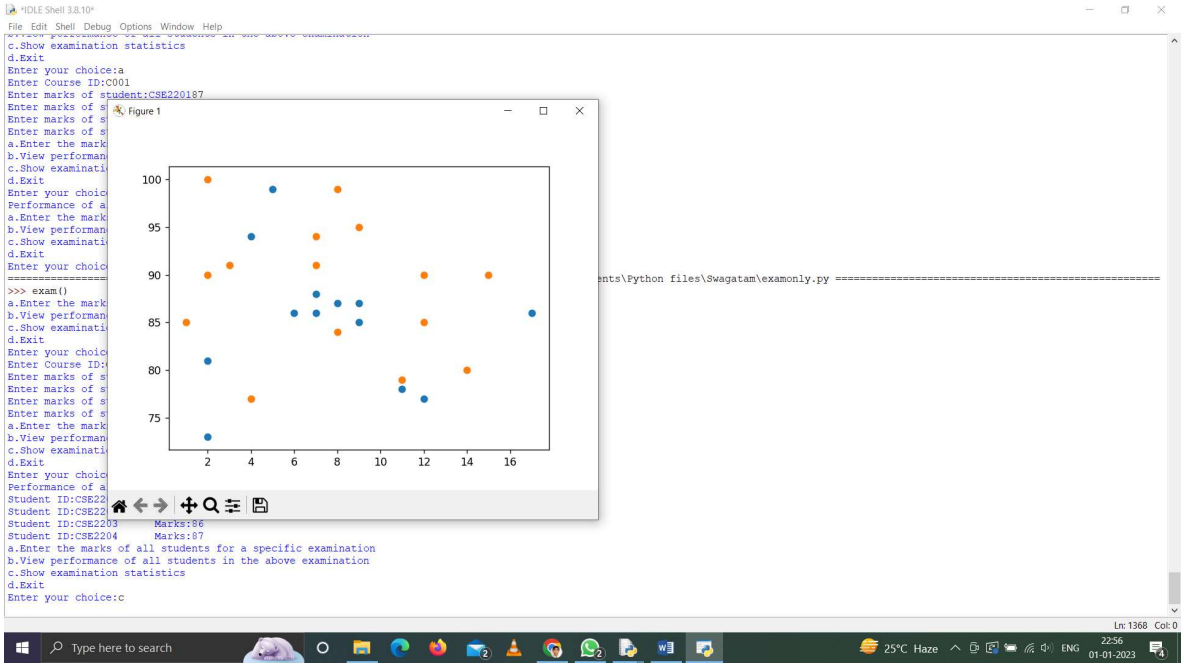
```
Class Roll No. 76
Marks in  CSE2201 : 78
------------------------------
Student ID: CSE2202
Name: Abhinandan Ojha
Class Roll No. 75
Marks in  CSE2202 : 90
------------------------------
Student ID: CSE2203
Name: Swagatam Adak
Class Roll No. 73
Marks in  CSE2203 : 95
------------------------------
Student ID: CSE2204
Name: Semanti Datta
Class Roll No. 90
Marks in  CSE2204 : 78
------------------------------
Check student details of more courses?(y/n):n
a.Create a new course
b.View performance of all students in the course
c.Show course statistics
d.Exit
Enter your choice:b
Enter course ID:C001
Course Name: Python
Student ID: CSE2201
Name: Sujaan Bhattacharya
Class Roll No. 76
Marks in  CSE2201 : 78
------------------------------
Student ID: CSE2202
Name: Abhinandan Ojha
Class Roll No. 75
Marks in  CSE2202 : 90
------------------------------
Student ID: CSE2203
Name: Swagatam Adak
Class Roll No. 73
Marks in  CSE2203 : 95
------------------------------
Student ID: CSE2204
Name: Semanti Datta
Class Roll No. 90
Marks in  CSE2204 : 78
------------------------------
Check student details of more courses?(y/n):n
```

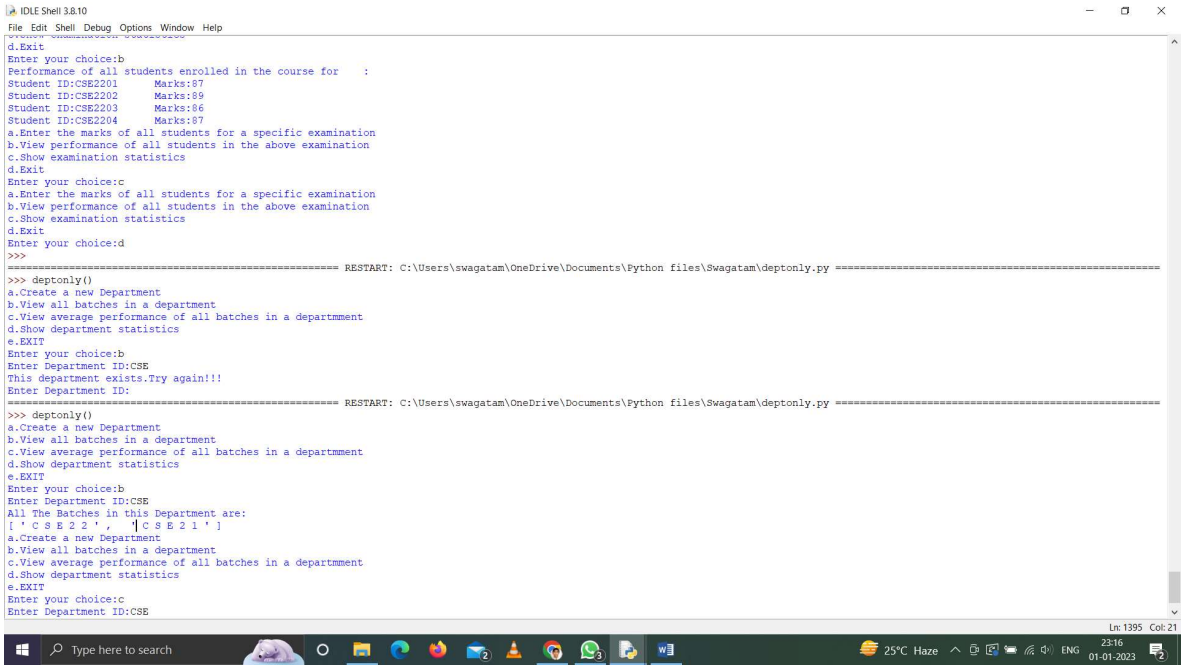
Ln: 1141 Col: 4

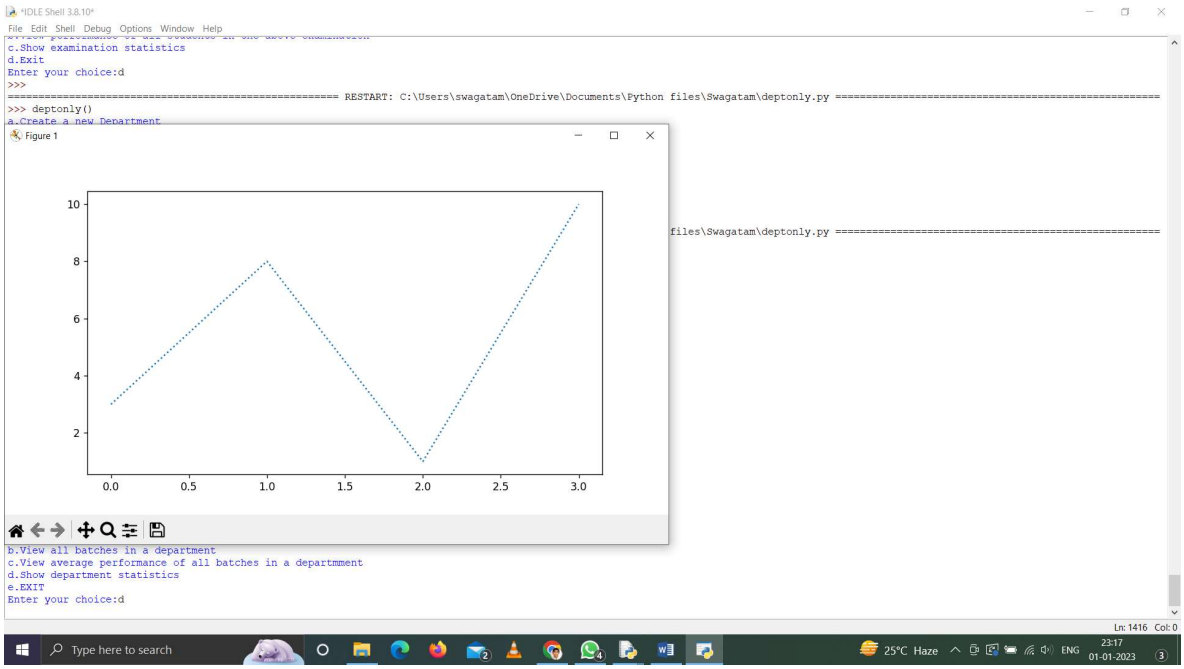
Type here to search 25°C Haze ENG 22:33 01-01-2023

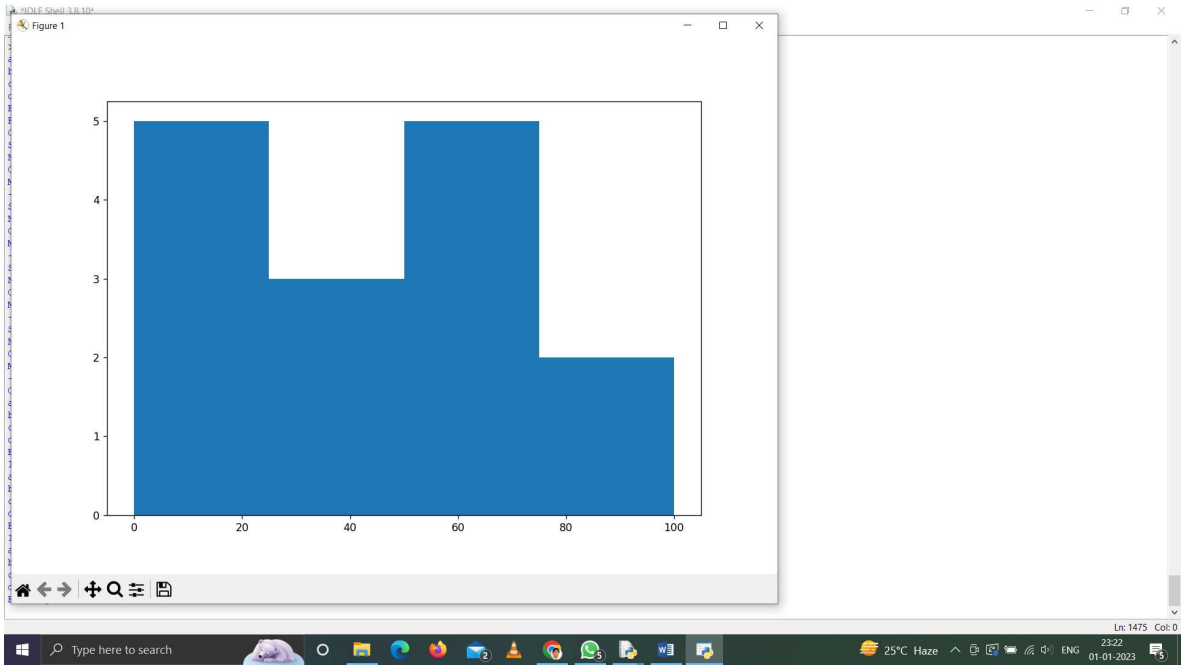

IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
>>> exam()
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:g
Invalid Input.Try again!!!
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:t
Invalid Input.Try again!!!
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:r
Invalid Input.Try again!!!
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:u
Invalid Input.Try again!!!
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:i
Invalid Input.Try again!!!
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:a
Enter Course ID:C001
Enter marks of student:CSE220187
Enter marks of student:CSE220286
Enter marks of student:CSE220389
Enter marks of student:CSE220479
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:b
Performance of all students enrolled in the course for :
Ln: 1335 Col: 0
Type here to search
25°C Haze
ENG
22:55
01-01-2023

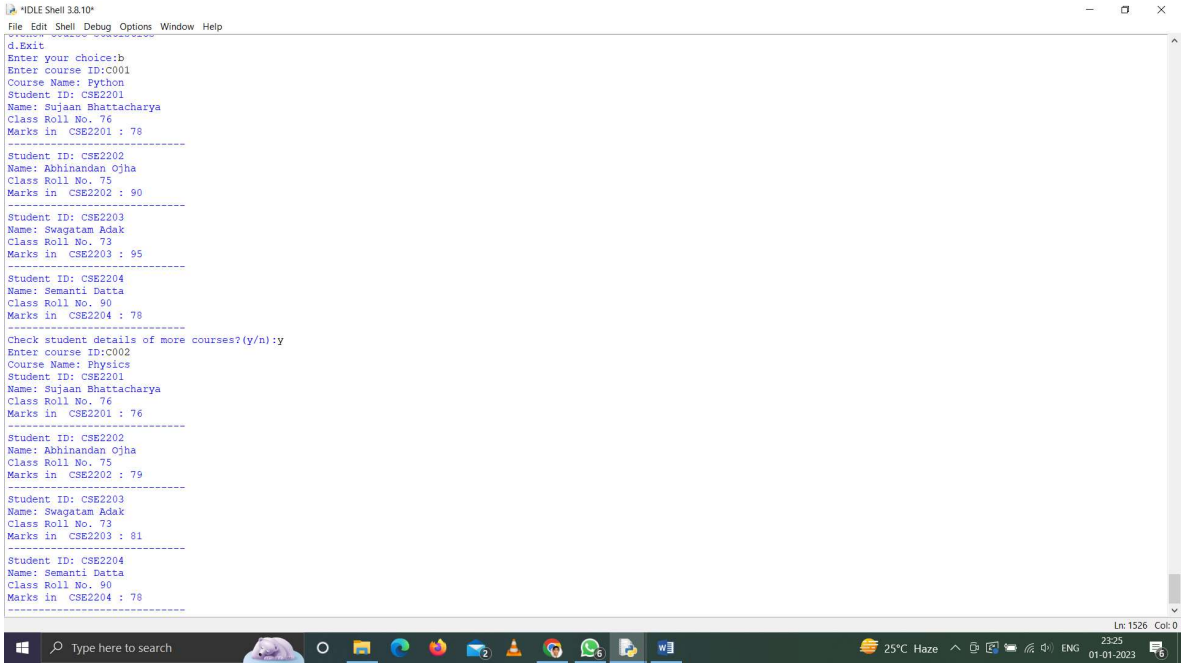

IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
c.Show examination statistics
d.Exit
Enter your choice:a
Enter Course ID:C001
Enter marks of student:CSE220187
Enter marks of student:CSE220286
Enter marks of student:CSE220389
Enter marks of student:CSE220479
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:b
Performance of all students enrolled in the course for :
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\examonly.py ==========
>>> exam()
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:a
Enter Course ID:C001
Enter marks of student:CSE220187
Enter marks of student:CSE220289
Enter marks of student:CSE220386
Enter marks of student:CSE220487
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:b
Performance of all students enrolled in the course for :
Student ID:CSE2201 Marks:87
Student ID:CSE2202 Marks:89
Student ID:CSE2203 Marks:86
Student ID:CSE2204 Marks:87
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:c
Ln: 1368 Col: 0
Type here to search
25°C Haze
ENG
22:55
01-01-2023

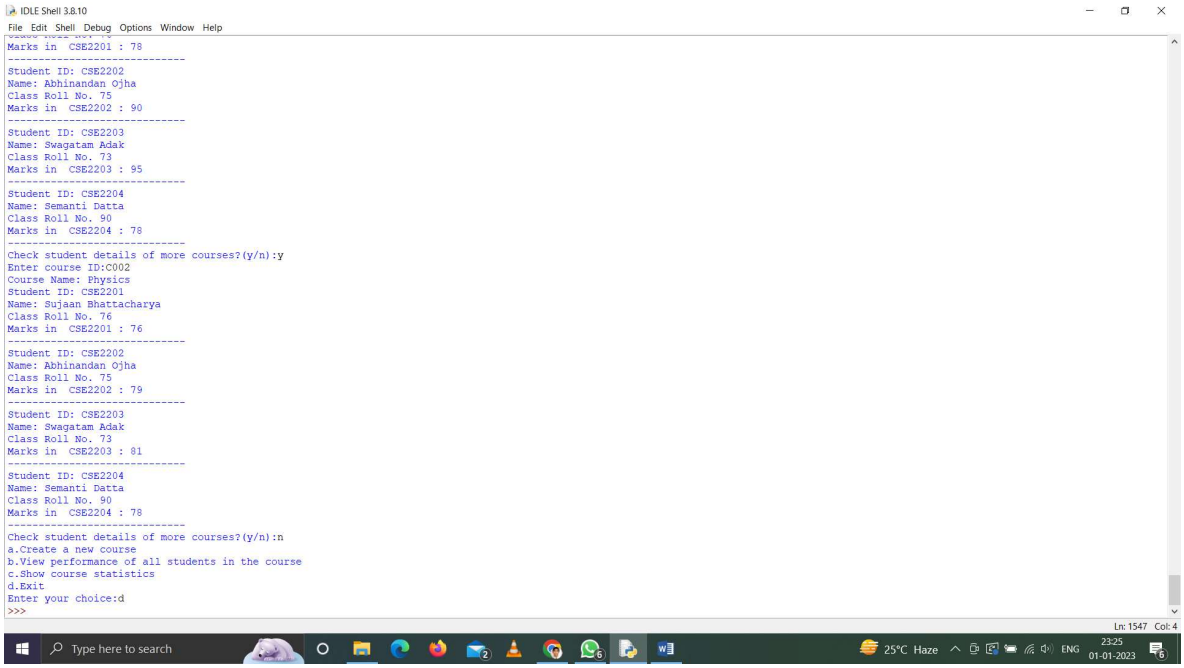

IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
c.Show examination statistics
d.Exit
Enter your choice:a
Enter Course ID:C001
Enter marks of student:CSE220187
Figure 1
100
95
90
85
80
75
2
4
6
8
10
12
14
16
>>> exam()
a.Enter the mark
b.View performan
c.Show examinati
d.Exit
Enter your choic
Enter Course ID:
Enter marks of s
Enter marks of s
Enter marks of s
Enter marks of s
a.Enter the mark
b.View performan
c.Show examinati
d.Exit
Enter your choic
Performance of a
Student ID:CSE22
Student ID:CSE22
Student ID:CSE2203 Marks:86
Student ID:CSE2204 Marks:87
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:c
Ln: 1368 Col: 0
Type here to search
25°C Haze
ENG
22:56
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
d.Exit
Enter your choice:b
Performance of all students enrolled in the course for :
Student ID:CSE2201 Marks:87
Student ID:CSE2202 Marks:89
Student ID:CSE2203 Marks:86
Student ID:CSE2204 Marks:87
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:c
a.Enter the marks of all students for a specific examination
b.View performance of all students in the above examination
c.Show examination statistics
d.Exit
Enter your choice:d
>>>
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\deptonly.py ==========
>>> deptonly()
a.Create a new Department
b.View all batches in a department
c.View average performance of all batches in a departmment
d.Show department statistics
e.EXIT
Enter your choice:b
Enter Department ID:CSE
This department exists.Try again!!!
Enter Department ID:
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\deptonly.py ==========
>>> deptonly()
a.Create a new Department
b.View all batches in a department
c.View average performance of all batches in a departmment
d.Show department statistics
e.EXIT
Enter your choice:b
Enter Department ID:CSE
All The Batches in this Department are:
[' C S E 2 2 ' , ' C S E 2 1 ']
a.Create a new Department
b.View all batches in a department
c.View average performance of all batches in a departmment
d.Show department statistics
e.EXIT
Enter your choice:c
Enter Department ID:CSE
Ln: 1395 Col: 21
Type here to search
25°C Haze
ENG
23:16
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
c.Show examination statistics
d.Exit
Enter your choice:d
>>>
========== RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\deptonly.py ==========
>>> deptonly()
a.Create a new Department
Figure 1
10
8
6
4
2
0.0
0.5
1.0
1.5
2.0
2.5
3.0
files\Swagatam\deptonly.py ==========
b.View all batches in a department
c.View average performance of all batches in a departmment
d.Show department statistics
e.EXIT
Enter your choice:d
Ln: 1416 Col: 0
Type here to search
25°C Haze
ENG
23:17
01-01-2023


IDLE Shell 3.8.10
Figure 1
5
4
3
2
1
0
0
20
40
60
80
100
Ln: 1475 Col: 0
Type here to search
25°C Haze
ENG
23:22
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
d.Exit
Enter your choice:b
Enter course ID:C001
Course Name: Python
Student ID: CSE2201
Name: Sujaan Bhattacharya
Class Roll No. 76
Marks in CSE2201 : 78
Student ID: CSE2202
Name: Abhinandan Ojha
Class Roll No. 75
Marks in CSE2202 : 90
Student ID: CSE2203
Name: Swagatam Adak
Class Roll No. 73
Marks in CSE2203 : 95
Student ID: CSE2204
Name: Semanti Datta
Class Roll No. 90
Marks in CSE2204 : 78
Check student details of more courses?(y/n):y
Enter course ID:C002
Course Name: Physics
Student ID: CSE2201
Name: Sujaan Bhattacharya
Class Roll No. 76
Marks in CSE2201 : 76
Student ID: CSE2202
Name: Abhinandan Ojha
Class Roll No. 75
Marks in CSE2202 : 79
Student ID: CSE2203
Name: Swagatam Adak
Class Roll No. 73
Marks in CSE2203 : 81
Student ID: CSE2204
Name: Semanti Datta
Class Roll No. 90
Marks in CSE2204 : 78
Ln: 1526 Col: 0
Type here to search
25°C Haze
ENG
23:25
01-01-2023


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
Marks in CSE2201 : 78
Student ID: CSE2202
Name: Abhinandan Ojha
Class Roll No. 75
Marks in CSE2202 : 90
Student ID: CSE2203
Name: Swagatam Adak
Class Roll No. 73
Marks in CSE2203 : 95
Student ID: CSE2204
Name: Semanti Datta
Class Roll No. 90
Marks in CSE2204 : 78
Check student details of more courses?(y/n):y
Enter course ID:C002
Course Name: Physics
Student ID: CSE2201
Name: Sujaan Bhattacharya
Class Roll No. 76
Marks in CSE2201 : 76
Student ID: CSE2202
Name: Abhinandan Ojha
Class Roll No. 75
Marks in CSE2202 : 79
Student ID: CSE2203
Name: Swagatam Adak
Class Roll No. 73
Marks in CSE2203 : 81
Student ID: CSE2204
Name: Semanti Datta
Class Roll No. 90
Marks in CSE2204 : 78
Check student details of more courses?(y/n):n
a.Create a new course
b.View performance of all students in the course
c.Show course statistics
d.Exit
Enter your choice:d
>>>
Ln: 1547 Col: 4
Type here to search
25°C Haze
ENG
23:25
01-01-2023