

STUDENT EXAMINATION PORTAL

Submitted by

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Class Roll Number: 63

Stream: CSE Core

Subject: Programming for Problem Solving with Python

Subject Code: IVC101

Department: Basic Science and Humanities

Under the supervision of

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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 **Tahiti Dutta**, 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 dictionary 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.

Student - Excel

The screenshot shows a Microsoft Excel spreadsheet titled "Student - Excel". The ribbon menu is visible at the top with tabs like File, Home, Insert, Page Layout, Formulas, Data, Review, View, and Tell me what you want to do... The Home tab is selected. The main area displays a table with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Student ID	Name	Class Roll	Batch ID																			
2	CSE2201	Sujisan Bh.	76	CSE22																			
3	CSE2202	Abhinanda	75	CSE22																			
4	CSE2203	Swagatam	73	CSE22																			
5	CSE2204	Semanth D.	90	CSE22																			
6																							
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At the bottom, there is a "Student" tab selected, and the status bar shows "Ready". The taskbar at the bottom includes icons for File Explorer, Edge, File Manager, Task View, File, Home, Insert, Page Layout, Formulas, Data, Review, View, Tell me what you want to do..., AutoSum, Fill, Clear, Sort & Filter, Select, and Share.

Course - Excel

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

Cut Copy Paste Format Painter Clipboard

Font Alignment Number Styles Cells Editing

Normal Bad Good Neutral Calculation Check Cell Insert Delete Format Sort & Find & Select

A1

Course ID	Course Name	Student ID	Marks Obtained
C001	Python	'CSE2201': 78, 'CSE2202': 90, 'CSE2203': 95, 'CSE2204': 78]	
C002	Physics	'CSE2201': 76, 'CSE2202': 79, 'CSE2203': 81, 'CSE2204': 78]	
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Course

Ready

25°C Haze 100% 100% 02-01-2023

Department - Excel

This screenshot shows a Microsoft Excel spreadsheet titled "Department - Excel". The table consists of two rows of data:

1	Department	Department List of batches
2	CSE	Computer ['CSE22','CSE21']
3	ECE	Electronic ['ECE21','ECE22']
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The ribbon tabs include File, Home, Insert, Page Layout, Formulas, Data, Review, View, and Tell me what you want to do... The status bar at the bottom shows "Ready", the taskbar has the Excel icon highlighted, and the system tray shows the date and time as 02-01-2023.

Batch - Excel

This screenshot shows a Microsoft Excel spreadsheet titled "Batch - Excel". The table consists of five rows of data:

1	Batch ID	Batch Name	Department	List of Courses	List of Students
2	CSE22	CSE 2022-CSE	["C001","C1"]	["CSE2201","CSE2202","CSE2203","CSE2204"]	
3	CSE22	CSE 2021-CSE	["C001","C1"]	["CSE2101"]	
4	ECE22	ECE 2021-ECE	["C002"]	["ECE2101"]	
5	ECE22	ECE 2022-ECE	["C002"]	["ECE2201","ECE2202"]	
6					
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The ribbon tabs include File, Home, Insert, Page Layout, Formulas, Data, Review, View, and Tell me what you want to do... The status bar at the bottom shows "Ready", the taskbar has the Excel icon highlighted, and the system tray shows the date and time as 02-01-2023.

Course - Excel	
File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...	
Clipboard Font Alignment Number Styles Cells Editing	
D6	: fx
1	Course ID Course Name Student ID Marks Obtained
2	C001 Python {'CSE2201': 78, 'CSE2202': 90, 'CSE2203': 95, 'CSE2204': 78, 'CSE2101': 89}
3	C002 Physics {'CSE2201': 76, 'CSE2202': 79, 'CSE2203': 81, 'CSE2204': 78, 'CSE2101': 75, 'ECE2101': 67, 'ECE2201': 86, 'ECE2202': 82}
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Student - Excel	
File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...	
Clipboard Font Alignment Number Styles Cells Editing	
A10	: fx
1	Student ID Name Class Roll Batch ID
2	CSE2201 Sujan Bhe 76 CSE22
3	CSE2202 Abhinanda 75 CSE22
4	CSE2203 Swagatam 73 CSE22
5	CSE2204 Semanti D. 90 CSE22
6	CSE2101 Ankita Chat 78 CSE21
7	ECE2101 Rohit Maji 56 ECE21
8	ECE2201 Arjeet Ch 45 ECE22
9	ECE2202 Adrijा Ban 17 ECE22
10	
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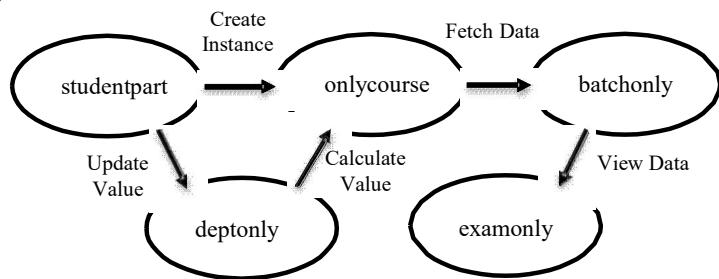
```

result - Notepad
File Edit Format View Help
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

```

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=[],[],[]
    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 department')
        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.Exit
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
Windows Taskbar: Type here to search, File Explorer, Edge, Firefox, Mail, Vivaldi, Google Chrome, WhatsApp, File, Excel, Word, 25°C Haze, ENG, 1856, 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:jhhvvh
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
c.View list of all courses taught in the batch
Ln: 225 Col: 20
Windows Taskbar: Type here to search, File Explorer, Edge, Firefox, Mail, Vivaldi, Google Chrome, WhatsApp, File, Excel, Word, 25°C Haze, ENG, 1857, 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
Windows Taskbar
Type here to search 25°C Haze 1858 ENG 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 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

```
idle Shell 3.8.10
File Edit Shell Debug Options Window Help
>>> Enter your choice:a
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.Show course statistics
c.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:78
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



```
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: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 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



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.EXIT
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.EXIT
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
```

```
idle Shell 3.8.10
File Edit Shell Debug Options Window Help
a.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.EXIT
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 marks in Python:78
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
```

```
File Edit Shell Debug Options Window Help
=====
d.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: Sujan Bhattacharya
Class Roll no. of student: 76
Marks in English : 76 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
2.Course Details
3.Batch Details
4.Department Details
5.Examination Details
6.END
Enter your choice:6
>>>
=====
===== 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:d
Enter the required batch ID:CSE22
Batch already exists.Try again!!!
```

A screenshot of a Microsoft Excel spreadsheet titled "Student - Excel". The data is organized into columns A through V. Column A contains student IDs, and column B contains names. Column C contains Class Roll numbers, and column D contains Batch IDs. The data includes: Row 1: Student ID, Name; Row 2: CSE2201, Sujan Bhattacharya, 76, CSE22; Row 3: CSE2202, Abhinandan Ojha, 75, CSE22; Row 4: CSE2203, Swagatam Adak, 73, CSE22; Row 5: CSE2204, Semanti Datta, 90, CSE22. The rest of the rows from 6 to 30 are empty. The Excel ribbon at the top shows tabs like File, Home, Insert, Page Layout, Formulas, Data, Review, View, and a search bar. The status bar at the bottom right shows the date as 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 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
Windows 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):CSI
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 Ph
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 Pyt
Marks in Physics : 81 Grade in Ph
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:[
```

Ln: 616 Col: 18
Windows Type here to search 25°C Haze ENG 19:25 01-01-2023

```
File Edit Shell Debug Options Window Help
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 marks 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.Quit

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 marks 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:|
```

```

IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
>>> 
a.Update student details
b.Remove a student from the database
c.Generate report card
d.Exit
Enter your choice:a
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:
>>> 

```

Ln: 648 Col: 4

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Student ID	Name	Class Roll	Batch ID																			
2	CSE2201	Sujan Bhi	76	CSE22																			
3	CSE2202	Abhinanda	75	CSE22																			
4	CSE2203	Swagatam	73	CSE22																			
5	CSE2204	Semanti D.	90	CSE22																			

The status bar at the bottom shows '25°C Haze' and the date '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: Sujan 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

Windows Type here to search 25°C Haze ENG 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 the Student ID of the student whose report card you want to generate:CSE2201
REPORT CARD
Student ID: CSE2201
Student Name: Sujan 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

```



```

Windows Type here to search 25°C Haze ENG 01-01-2023

```

```
[4] 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

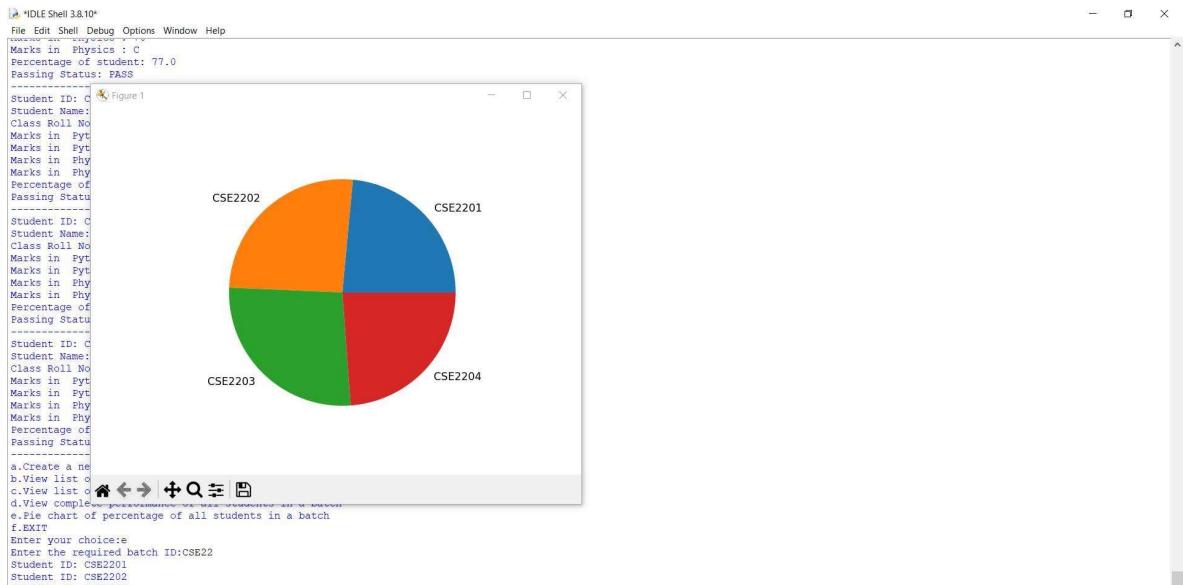
Generate more report cards?(y/n):CSE2204
Enter the Student ID of the student whose report card you want to generate:CSE2204
REPORT CARD
Student ID: CSE2204
Student Name: Semanti Datta
Class Roll no. of student: 90
Marks in Python : 78 Grade in Python : C
Marks in Physics : 78 Grade in Physics : C
Percentage 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: Swapnam 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:c
Enter the Student ID of the student whose details you want to update:Deep Banerjee
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:CSE2205
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
>>> |
```

```
idle Shell 3.8.10
File Edit Shell Debug Options Window Help
=====
a.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\batchesonly.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 does not exists.Try again!!!
Enter Batch ID:
=====
RESTART: C:\Users\swagatam\OneDrive\Documents\Python files\Swagatam\batchesonly.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:
[ 'CSE2201', 'CSE2202' ]
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
Windows Taskbar: Type here to search, File Explorer, Edge, Firefox, Mail, File, Control Panel, File History, Task View, Google Chrome, WhatsApp, Microsoft Word, Microsoft Word, 25°C Haze, 2041, ENG, 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: Sujan 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: Abhinandam 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 : 91
Marks in Physics : B
Percentage of student: 88.0
Passing Status: PASS
-----
Student ID: CSE2204
Student Name: Sapti 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
Windows Taskbar: Type here to search, File Explorer, Edge, Firefox, Mail, File, Control Panel, File History, Task View, Google Chrome, WhatsApp, Microsoft Word, Microsoft Word, 25°C Haze, 21:30, ENG, 01-01-2023
```



Ln: 1086 Col: 0

Windows Type here to search

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: Sujan 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

Windows Type here to search

File Edit Shell Debug Options Window Help

```

25°C Haze 21:29 01-01-2023 ENG

```



```

IDLE Shell 3.8.10*
File Edit Shell Debug Options Window Help
=====
d.Show examination statistics
d.Exit
Enter your choice:a
Enter Course ID:C001
Enter marks of student:cse220187
Enter marks of s
Figure 1
Enter marks of s
Enter marks of s
a.Enter the mark
b.View performance
c.Show examination statistics
d.Exit
Enter your choice:
=====
>>> exam()
a.Enter the mark
b.View performance
c.Show examination statistics
d.Exit
Enter your choice:
Enter Course ID:
Enter marks of s
Enter marks of s
Enter marks of s
a.Enter the mark
b.View performance
c.Show examination statistics
d.Exit
Enter your choice:
=====
Student ID:cse2201
Student ID:cse2202 Marks:86
Student ID:cse2203 Marks:87
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
=====

L: 1368 Col: 0

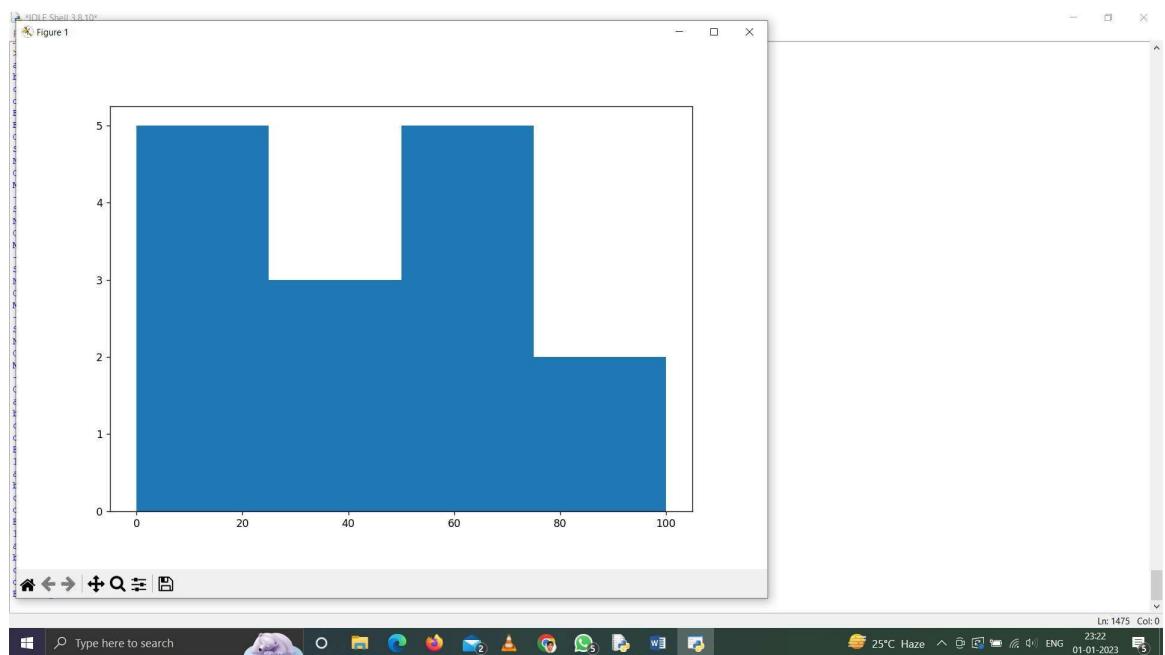
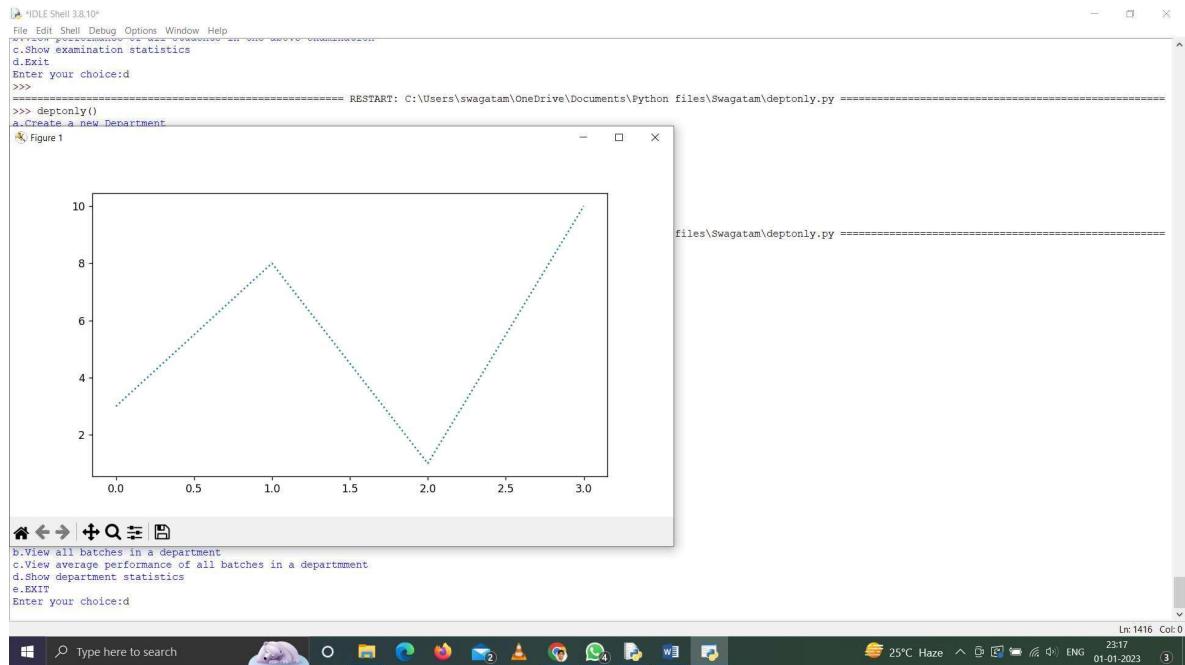
```

```

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: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 department
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 department
d.Show department statistics
e.EXIT
Enter your choice:b
Enter Department ID:CSE
All The Batches in this Department are:
[ 'B 1 2 3 E 2 1 ' ]
a.Create a new Department
b.View all batches in a department
c.View average performance of all batches in a department
d.Show department statistics
e.EXIT
Enter your choice:c
Enter Department ID:CSE
=====

L: 1395 Col: 21

```



```
*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: Sujan 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: Sujan 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):y
Enter course ID:C002
Course Name: Physics
Student ID: CSE2201
Name: Sujan Bhattacharya
Class Roll No. 76
Marks in CSE2201 : 78
-----
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: 1526 Col: 0
23:25 25°C Haze ⌂ ENG 01-01-2023
```



```
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: Sujan 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):y
Enter course ID:C002
Course Name: Physics
Student ID: CSE2201
Name: Sujan Bhattacharya
Class Roll No. 76
Marks in CSE2201 : 78
-----
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
23:25 25°C Haze ⌂ ENG 01-01-2023
```