STUDENT EXAMINATION PORTAL

Submitted by

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Section: J
Class Roll Number: 61
Stream: Information Technology (IT)
Subject: Programming for Problem Solving with Python
Subject Code: IVC101
Department: Basic Science and Humanities

Under the supervision of
Prof. Dr. Swarnendu Ghosh

Academic Year: 2022-26

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

**DEPARTMENT OF BASIC SCIENCE AND HUMANITITES
INSTITUTE OF ENGINEERING AND MANAGEMENT, KOLKATA**

CERTIFICATE OF RECOMMENDATION

We hereby recommend that the project prepared under the supervision by

Kuntal Bhattacharjee, entitled STUDENT EXAMINATION PORTAL REPORT be

accepted in partial fulfilment of the requirements for the degree of partial

fulfilment of the first semester

_____   _____

Head of the Department
Basic Sciences and Humanities
IEM, Kolkata

Project Supervisor

1. Introduction: -

This project is assigned to us for developing a report card of student's examinations with the help of basic python programming language.

1.1 Objective:

The basic aim of the project is to create student examination portal where we need to put up basic student details and thereby with the help of a python programming, we have to create a report card by maintaining separate CSV files for the student, course, batch, department and examination.

1.2 Organization of the Project:

The project is organised into 5 different modules, namely: -

STUDENT:

We have to create a student with the help of his/her basic details vis. student ID, name, roll number and batch name and then generate a report card showing percentage, grades in each subject and whether he have passed or failed.

COURSE:

After this, we have to create a new course with details vis. his/her course ID, course name and marks obtained followed by his/her performance in that course and course stats with the help of a histogram.

BATCH:

Now we are to create a new batch providing details vis. batch ID, batch name, department name, list of courses and list of students followed by viewing all students, all courses taught, complete performance of all the students and course stats with the help of a pie chart containing all the percentages.

DEPARTMENT:

Now we have to create a new department with details vis. department ID, department name and list of batches followed by a clear picture of all the batches in the department, average performance of all the batches in the department and department stats with the help of a line plot.

EXAMINATION:

Lastly, we are done with entering marks of all students in the examination, performance of all students in the examination and finally displaying examination stats with the help of a scatter plot.
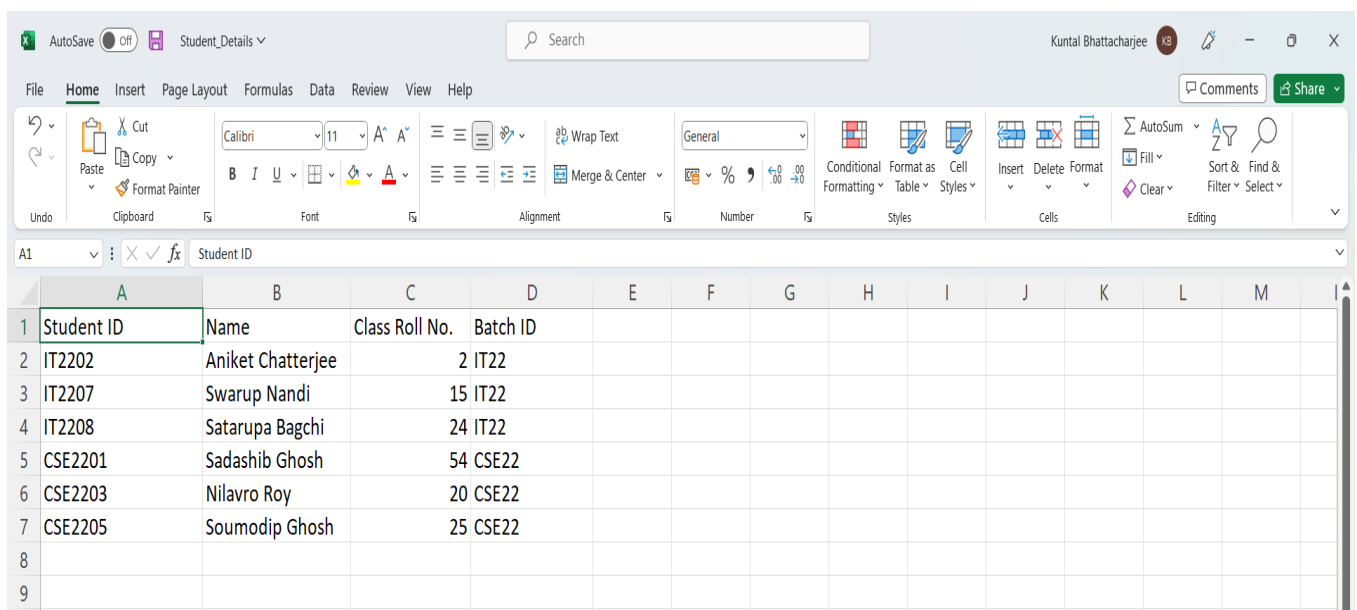
2. Database Descriptions: -

The database used in the project is CSV files.

A CSV (Comma Separated Value) file is a type of plain text file that uses specific structure to arrange tabular data. Because it's a plain text file, it can contain only actual text data—in other words, printable ASCII or Unicode characters. The structure of a CSV file is given away by its name. Normally, CSV files use a comma to separate each specific data value.

2.1 Database Samples:

STUDENT DETAILS:----->

	A	B	C	D
1	Student ID	Name	Class Roll No.	Batch ID
2	IT2202	Aniket Chatterjee	2	IT22
3	IT2207	Swarup Nandi	15	IT22
4	IT2208	Satarupa Bagchi	24	IT22
5	CSE2201	Sadashib Ghosh	54	CSE22
6	CSE2203	Nilavro Roy	20	CSE22
7	CSE2205	Soumodip Ghosh	25	CSE22
8				
9				

STUDENT COURSES:----->

	A	B	C	D
1	Student ID	Name	Class Roll No.	Batch ID
2	IT2202	Aniket Chatterjee	2	IT22
3	IT2207	Swarup Nandi	15	IT22
4	IT2208	Satarupa Bagchi	24	IT22
5	CSE2201	Sadashib Ghosh	54	CSE22
6	CSE2203	Nilavro Roy	20	CSE22
7	CSE2205	Soumodip Ghosh	25	CSE22
8				
9				

DETAILS OF THE BATCH – IT 2022-2026:----->

	A	B	C	D	E
1	Batch ID	Batch Name	Department Name	List Of Courses	List Of Students
2	IT22	IT 2022-2026	IT	Data Base Management System	Aniket Chatterjee
3	IT22	IT 2022-2026	IT	Operating System	Swarup Nandi
4	IT22	IT 2022-2026	IT	Data Structures and Algorithms	Satarupa Bagchi
5					
6					
7					
8					

DETAILS OF THE BATCH – CSE 2022-2026:----->

	A	B	C	D	E
1	Batch ID	Batch Name	Department Name	List Of Courses	List Of Students
2	CSE22	CSE 2022-2026	CSE	Vector Calculus	Sadashib Ghosh
3	CSE22	CSE 2022-2026	CSE	Digital Electronics	Nilavro Roy
4	CSE22	CSE 2022-2026	CSE	Embedded Systems	Soumodip Ghosh

AVERAGE PERFORMANCE OF THE TWO BATCHES: ----->

	A	B	C	D
1	Department ID	Deparment Name	List Of Batches	Average Performance(in %)
2	CSE	Computer Science and Engineering	CSE22	81.66666667
3	IT	Information Technology	IT22	84.88888889

PERFORMANCE OF STUDENTS IN THE ENDSEM EXAMINATION: ----->

	A	B	C	D	E	F
1	Name	Class Roll No	Batch ID	Batch Name	Department ID	Peercentage
2	Aniket Chatterjee	2	IT	IT2022-2026	IT	85
3	Swarup Nandi	15	IT	IT2022-2026	IT	81.66666667
4	Satarupa Bagchi	24	IT	IT2022-2026	IT	85.16666667
5	Sadashib Ghosh	54	CSE	CSE2022-2026	CSE	85
6	Nilavro Roy	20	CSE	CSE2022-2026	CSE	74.83333333
7	Soumodip Ghosh	25	CSE	CSE2022-2026	CSE	79.83333333

3. Programs: -

ALL THE SOURCE CODES HAVE BEEN EDITED IN JUPYTER NOTEBOOK:

<u>IMPORTING THE PYTHON LIBRARIES:</u>

```python
import pandas as pd
%matplotlib inline
from matplotlib import pyplot as plt
import numpy as np
```

<u>MODULE: - STUDENT</u>

```python
class StudentDetails:
    def __init__(self,name,std_id,roll_no,btch_id):
        self.name = name
        self.std_id = std_id
        self.roll_no = roll_no
        self.btch_id = btch_id
    def studentGrades(self,score):
        gr = ""
        if (score>=90):
            gr = "A"
        elif (score>=80):
            gr = "B"
        elif (score>=70):
            gr = "C"
        elif (score>=60):
            gr = "D"
        elif (score>=50):
            gr = "E"
        elif (score<40):
            gr = "F"

        return gr

    def passingStatus(self,score):
        status = ""
        if (score>=90):
            status = "PASS"
        elif (score>=80):
            status = "PASS"
        elif (score>=70):
            status = "PASS"
        elif (score>=60):
            status = "PASS"
        elif (score>=50):
```

```python
            status = "PASS"
        elif (score<40):
            status = "FAIL"

        return status
```

1. **INSTANTIATING THE OBJECTS:**

```python
# STUDENT1

aniket = StudentDetails("Aniket
Chatterjee","IT2202",2,"IT22")

# Entering the marks of student in Engineering Physics
gr1_st1=aniket.studentGrades(92)
stat1_st1 = aniket.passingStatus(92)


# Entering the marks of student in Engineering Chemistry
gr2_st1 = aniket.studentGrades(85)
stat2_st1 = aniket.passingStatus(85)


# Entering the marks of student in Basic Electrical
Engineering
gr3_st1 = aniket.studentGrades(81)
stat3_st1 = aniket.passingStatus(81)


# Entering the marks of student in Engineering Mechanics
gr4_st1 = aniket.studentGrades(77)
stat4_st1 = aniket.passingStatus(77)

# Aniket's Percentage
percent_1 = ((92+85+81+77)/4)*100

#STUDENT2

swarup = StudentDetails("Swarup
Nandi","IT2207",15,"IT22")

# Entering the marks of student in Engineering Physics
gr1_st2=swarup.studentGrades(84)
stat1_st2 = swarup.passingStatus(84)


# Entering the marks of student in Engineering Chemistry
gr2_st2 = swarup.studentGrades(74)
stat2_st2 = swarup.passingStatus(74)
```

```python
# Entering the marks of student in Basic Electrical
Engineering
gr3_st2 = swarup.studentGrades(68)
stat3_st2 = swarup.passingStatus(68)


# Entering the marks of student in Engineering Mechanics
gr4_st2 = swarup.studentGrades(72)
stat4_st2 = swarup.passingStatus(72)

# Swarup's Percentage
percent_2 = ((84+74+68+72)/4)*100

#STUDENT3

satarupa = StudentDetails("Satarupa
Bagchi","IT2208",24,"IT22")


# Entering the marks of student in Engineering Physics
gr1_st3=satarupa.studentGrades(80)
stat1_st3 = satarupa.passingStatus(80)


# Entering the marks of student in Engineering Chemistry
gr2_st3 = satarupa.studentGrades(89)
stat2_st3 = satarupa.passingStatus(89)


# Entering the marks of student in Basic Electrical
Engineering
gr3_st3 = satarupa.studentGrades(78)
stat3_st3 = satarupa.passingStatus(78)


# Entering the marks of student in Engineering Mechanics
gr4_st3 = aniket.studentGrades(67)
stat4_st3 = aniket.passingStatus(67)

# Satarupa's Percentage
percent_3 = ((80+89+78+67)/4)*100

#STUDENT4

sadashib = StudentDetails("Sadashib
Ghosh","CSE2201",54,"CSE22")


# Entering the marks of student in Engineering Physics
gr1_st4=sadashib.studentGrades(92)
stat1_st4 = sadashib.passingStatus(92)
```

```python
# Entering the marks of student in Engineering Chemistry
gr2_st4 = sadashib.studentGrades(85)
stat2_st4 = sadashib.passingStatus(85)

# Entering the marks of student in Basic Electrical
Engineering
gr3_st4 = sadashib.studentGrades(81)
stat3_st4 = sadashib.passingStatus(81)

# Entering the marks of student in Engineering Mechanics
gr4_st4 =sadashib.studentGrades(77)
stat4_st4 =sadashib.passingStatus(77)

# Sadashib's Percentage
percent_4 = ((92+85+81+77)/4)*100

#STUDENT5

nilavro = StudentDetails("Nilavro
Roy","CSE2203",20,"CSE22")


# Entering the marks of student in Engineering Physics
gr1_st5=nilavro.studentGrades(82)
stat1_st5 = nilavro.passingStatus(82)


# Entering the marks of student in Engineering Chemistry
gr2_st5 = nilavro.studentGrades(75)
stat2_st5 = nilavro.passingStatus(75)


# Entering the marks of student in Basic Electrical
Engineering
gr3_st5 = nilavro.studentGrades(83)
stat3_st5 = nilavro.passingStatus(83)


# Entering the marks of student in Engineering Mechanics
gr4_st5 = nilavro.studentGrades(87)
stat4_st5 = nilavro.passingStatus(87)

# Nilavro's Percentage
percent_5 = ((82+75+83+87)/4)*100

#STUDENT6

soumodip = StudentDetails("Soumodip
Ghosh","CSE2205",25,"CSE22")
```

```
# Entering the marks of student in Engineering Physics
gr1_st6 = soumodip.studentGrades(87)
stat1_st6 = soumodip.passingStatus(87)


# Entering the marks of student in Engineering Chemistry
gr2_st6 = soumodip.studentGrades(71)
stat2_st6 = soumodip.passingStatus(71)


# Entering the marks of student in Basic Electrical
Engineering
gr3_st6 = soumodip.studentGrades(80)
stat3_st6 = soumodip.passingStatus(80)


# Entering the marks of student in Engineering Mechanics
gr4_st6 = soumodip.studentGrades(78)
stat4_st6 = soumodip.passingStatus(78)

# Soumodip's Percentage
percent_6 = ((87+71+80+78)/4)*100
```

2. CREATING THE STUDENT DETAILS DATAFRAME AND CSV FILE:

```python
In [4]:  # Creating the Student Details DataFrame and CSV File
         df = pd.DataFrame([["IT2202","Aniket Chatterjee",2,"IT22"],
                            ["IT2207","Swarup Nandi",15,"IT22"],
                            ["IT2208","Satarupa Bagchi",24,"IT22"],
                            ["CSE2201","Sadashib Ghosh",54,"CSE22"],
                            ["CSE2203","Nilavro Roy",20,"CSE22"],
                            ["CSE2205","Soumodip Ghosh",25,"CSE22"]],
                              columns = ["Student ID","Name","Class Roll No.","Batch ID"])
         df
```

OUTPUT:
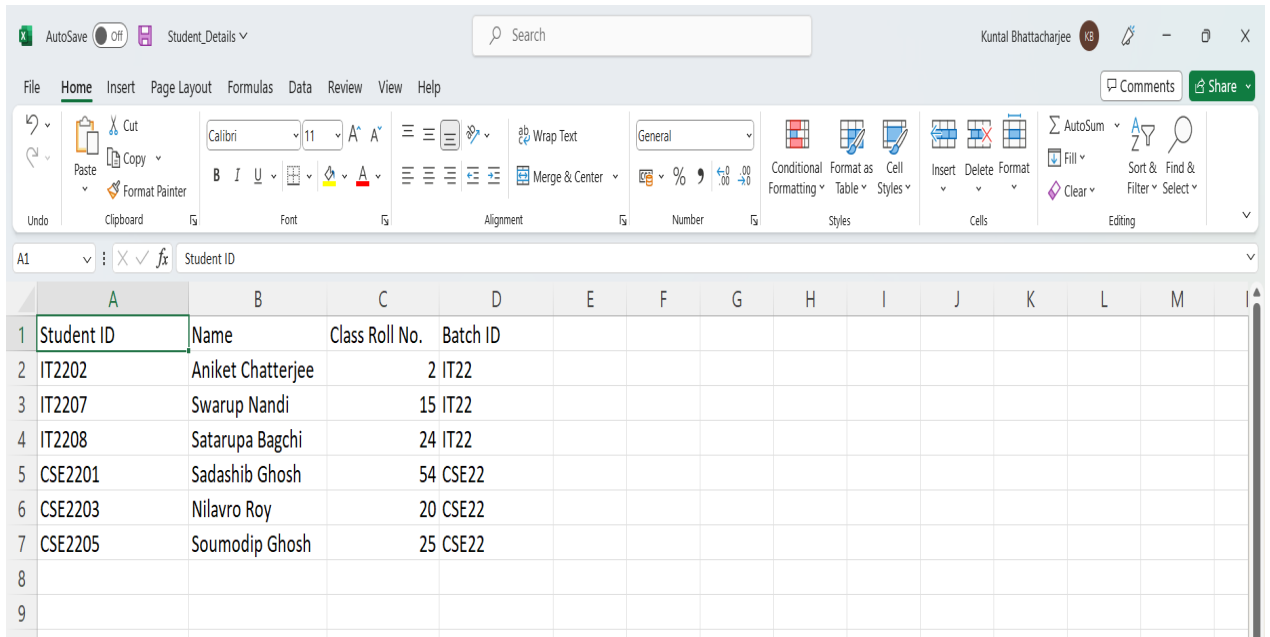
Out[4]:

	Student ID	Name	Class Roll No.	Batch ID
0	IT2202	Aniket Chatterjee	2	IT22
1	IT2207	Swarup Nandi	15	IT22
2	IT2208	Satarupa Bagchi	24	IT22
3	CSE2201	Sadashib Ghosh	54	CSE22
4	CSE2203	Nilavro Roy	20	CSE22
5	CSE2205	Soumodip Ghosh	25	CSE22

```
df.to_csv('Student_Details.csv',index=False)
```

OUTPUT:

3. GENERATING THE REPORT CARD OF STUDENTS:

```
# Generating the Report Card of Aniket Chatterjee
df_st1 = pd.DataFrame([["Engineering Physics","92",gr1_st1,stat1_st1],
                       ["Engineering Chemistry","85",gr2_st1,stat2_st1],

            ["BasicElectricalEngineering","81",gr3_st1,stat3_st1],
                ["Engineering Mechanics","77",gr4_st1,stat4_st1]],
                  columns = ["Subject","Marks","Grades","Status"])
df_st1
```
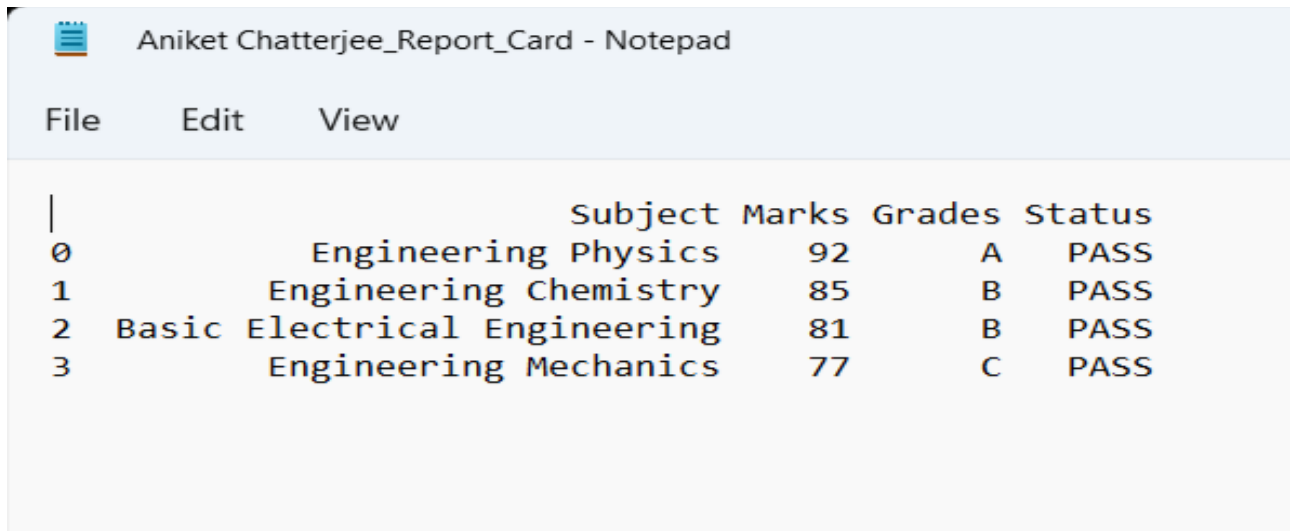
OUTPUT:

Out[6]:

	Subject	Marks	Grades	Status
0	Engineering Physics	92	A	PASS
1	Engineering Chemistry	85	B	PASS
2	Basic Electrical Engineering	81	B	PASS
3	Engineering Mechanics	77	C	PASS

```
# Exporting the DataFrame to a Text File
```

```python
with open("Aniket Chatterjee_Report_Card.txt","w") as f:
    f.write(str(df_st1)) # Report Card generated in the aforesaid text file
```

OUTPUT:


```
                              Subject Marks Grades Status
0              Engineering Physics    92      A   PASS
1            Engineering Chemistry    85      B   PASS
2    Basic Electrical Engineering    81      B   PASS
3             Engineering Mechanics   77      C   PASS
```

```python
# Generating the Report Card of Swarup Nandi
df_st2 = pd.DataFrame([["Engineering Physics","84",gr1_st2,stat1_st1],
                       ["Engineering Chemistry","74",gr2_st2,stat2_st2],

                       ["BasicElectricalEngineering","68",gr3_st2,stat3_st2],
                       ["Engineering Mechanics","72",gr4_st2,stat4_st2]],
                       columns = ["Subject","Marks","Grades","Status"])
df_st2
```

OUTPUT:

Out[8]:

	Subject	Marks	Grades	Status
0	Engineering Physics	84	B	PASS
1	Engineering Chemistry	74	C	PASS
2	Basic Electrical Engineering	68	D	PASS
3	Engineering Mechanics	72	C	PASS

```python
# Exporting the DataFrame to a Text File
with open("Swarup Nandi_Report_Card.txt","w") as f:
    f.write(str(df_st2)) # Report Card generated in the aforesaid text file
```

OUTPUT:

```
|                     Subject Marks Grades Status
0         Engineering Physics    84       B    PASS
1       Engineering Chemistry    74       C    PASS
2  Basic Electrical Engineering  68       D    PASS
3        Engineering Mechanics   72       C    PASS
```

 # Generating the Report Card of Satarupa Bagchi
```
df_st3 = pd.DataFrame([["Engineering Physics","80",gr1_st3,stat1_st3],
                       ["Engineering Chemistry","89",gr2_st3,stat2_st3],

              ["BasicElectricalEngineering","78",gr3_st3,stat3_st3],
                  ["Engineering Mechanics","67",gr4_st3,stat4_st3]],
                  columns = ["Subject","Marks","Grades","Status"])
df_st3
```

OUTPUT:

Out[10]:

	Subject	Marks	Grades	Status
0	Engineering Physics	80	B	PASS
1	Engineering Chemistry	89	B	PASS
2	Basic Electrical Engineering	78	C	PASS
3	Engineering Mechanics	67	D	PASS

 # Exporting the DataFrame to a Text File
```
with open("Satarupa Bagchi_Report_Card.txt","w") as f:
    f.write(str(df_st3)) # Report Card generated in the aforesaid text file
```

OUTPUT:

```
|                     Subject Marks Grades Status
0         Engineering Physics    80       B    PASS
1       Engineering Chemistry    89       B    PASS
2  Basic Electrical Engineering  78       C    PASS
3        Engineering Mechanics   67       D    PASS
```

 # Generating the Report Card of Sadashib Ghosh

```
df_st4 = pd.DataFrame([["Engineering Physics","92",gr1_st4,stat1_st4],
                       ["Engineering Chemistry","85",gr2_st4,stat2_st4],

                       ["BasicElectricalEngineering","81",gr3_st4,stat3_st4],
                       ["Engineering Mechanics","77",gr4_st4,stat4_st4]],
                       columns = ["Subject","Marks","Grades","Status"])
df_st4
```
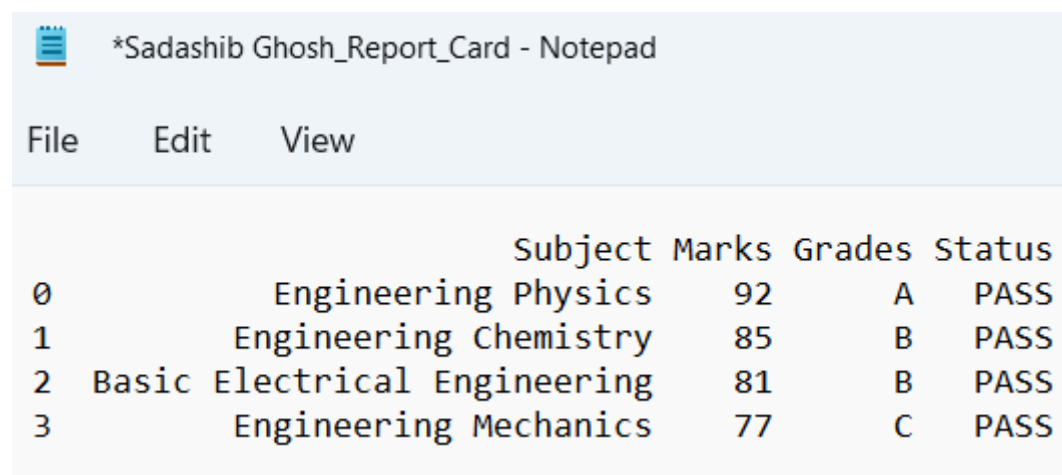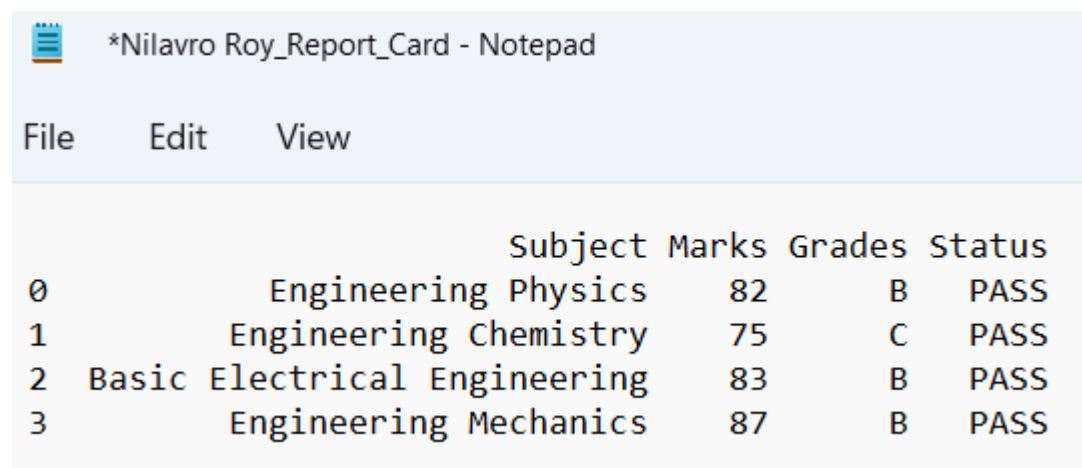
OUTPUT:

Out[12]:

	Subject	Marks	Grades	Status
0	Engineering Physics	92	A	PASS
1	Engineering Chemistry	85	B	PASS
2	Basic Electrical Engineering	81	B	PASS
3	Engineering Mechanics	77	C	PASS

```
# Exporting the DataFrame to a Text File
with open("Sadashib Ghosh_Report_Card.txt","w") as f:
    f.write(str(df_st4)) # Report Card generated in the aforesaid text file
```

OUTPUT:

*Sadashib Ghosh_Report_Card - Notepad

File   Edit   View

```
                     Subject Marks Grades Status
0          Engineering Physics   92      A   PASS
1        Engineering Chemistry   85      B   PASS
2  Basic Electrical Engineering   81      B   PASS
3        Engineering Mechanics   77      C   PASS
```

```
# Generating the Report Card of Nilavro Roy
df_st5 = pd.DataFrame([["Engineering Physics","82",gr1_st5,stat1_st5],
                       ["Engineering Chemistry","75",gr2_st5,stat2_st5],

                       ["BasicElectricalEngineering","83",gr3_st5,stat3_st5],
                       ["Engineering Mechanics","87",gr4_st5,stat4_st5]],
                       columns = ["Subject","Marks","Grades","Status"])
df_st5
```
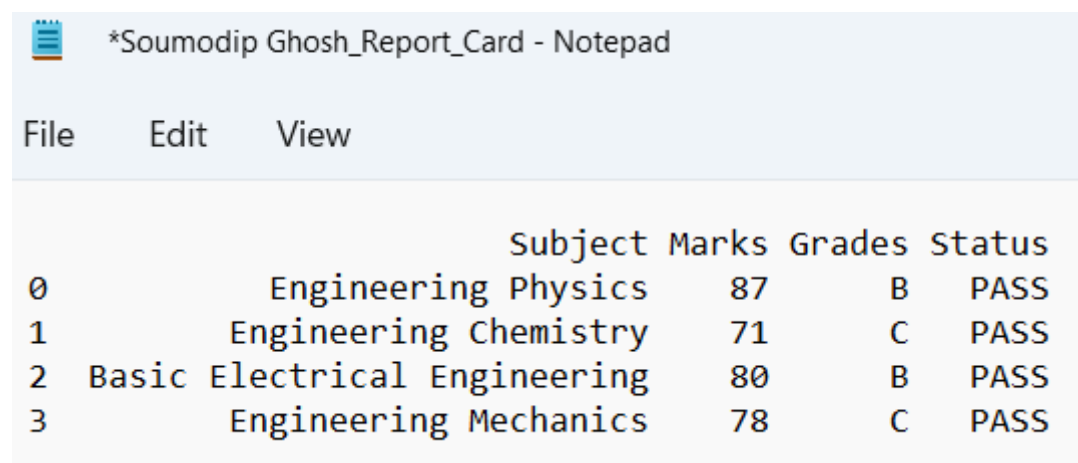
OUTPUT:

Out[14]:

	Subject	Marks	Grades	Status
0	Engineering Physics	82	B	PASS
1	Engineering Chemistry	75	C	PASS
2	Basic Electrical Engineering	83	B	PASS
3	Engineering Mechanics	87	B	PASS

```
# Exporting the DataFrame to a Text File
with open("Nilavro Roy_Report_Card.txt","w") as f:
    f.write(str(df_st5)) # Report Card generated in the aforesaid text file
```

OUTPUT:

```
*Nilavro Roy_Report_Card - Notepad

File    Edit    View

                      Subject Marks Grades Status
0           Engineering Physics    82      B   PASS
1         Engineering Chemistry    75      C   PASS
2   Basic Electrical Engineering    83      B   PASS
3         Engineering Mechanics    87      B   PASS
```

```
# Generating the Report Card of Soumodip Ghosh
df_st6 = pd.DataFrame([["Engineering Physics","87",gr1_st6,stat1_st6],
                       ["Engineering Chemistry","71",gr2_st6,stat2_st6],

             ["BasicElectricalEngineering","80",gr3_st6,stat3_st6],
                  ["Engineering Mechanics","78",gr4_st6,stat4_st6]],
                   columns = ["Subject","Marks","Grades","Status"])
df_st6
```

OUTPUT:

Out[16]:

	Subject	Marks	Grades	Status
0	Engineering Physics	87	B	PASS
1	Engineering Chemistry	71	C	PASS
2	Basic Electrical Engineering	80	B	PASS
3	Engineering Mechanics	78	C	PASS

```python
# Exporting the DataFrame to a Text File
with open("Soumodip Ghosh_Report_Card.txt","w") as f:
    f.write(str(df_st6)) # Report Card generated in the aforesaid text file
```

OUTPUT:

*Soumodip Ghosh_Report_Card - Notepad

File   Edit   View

```
                        Subject Marks Grades Status
0            Engineering Physics    87      B   PASS
1          Engineering Chemistry    71      C   PASS
2   Basic Electrical Engineering    80      B   PASS
3          Engineering Mechanics    78      C   PASS
```

MODULE: - COURSE

```python
class studentCourse(StudentDetails):
    def __init__(self, name, std_id, roll_no,
btch_id,course_id1,course_name1,course_id2,course_name2,c
ourse_id3,course_name3):
        super().__init__(name, std_id, roll_no, btch_id)
        self.course_id1 = course_id1
        self.course_name1 = course_name1
        self.course_id2 = course_id2
        self.course_name2 = course_name2
        self.course_id3 = course_id3
        self.course_name3self = course_name3

    def courseGrades(self,cs_scr):
```

```python
            gr_cs = ""
            if (cs_scr>=90):
                gr_cs = "A"
            elif (cs_scr>=80):
                gr_cs = "B"
            elif (cs_scr>=70):
                gr_cs = "C"
            elif (cs_scr>=60):
                gr_cs = "D"
            elif (cs_scr>=50):
                gr_cs = "E"
            elif (cs_scr<40):
                gr_cs = "F"

            return gr_cs

    def courseStatus(self,cs_scr):
            status_cs = ""
            if (cs_scr>=90):
                status_cs = "PASS"
            elif (cs_scr>=80):
                status_cs = "PASS"
            elif (cs_scr>=70):
                status_cs = "PASS"
            elif (cs_scr>=60):
                status_cs = "PASS"
            elif (cs_scr>=50):
                status_cs = "PASS"
            elif (cs_scr<40):
                status_cs = "FAIL"

            return status_cs
```

1.REINSTANTIATING THE OBJECTS:

```python
# STUDENT1

aniket = studentCourse("Aniket
Chatterjee","IT2202",2,"IT22","IVC101","Python
Programming","IVC102","Economics,Finance &
Entrepreneurship","IVC103","Aptitude")

# Entering marks in IVC101: Python Programming
gr1_cs1 = aniket.courseGrades(93)
st1_cs1 = aniket.courseStatus(93)

# Entering marks in IVC102: Economics,Finance &
Entrepreneurship
gr1_cs2 = aniket.courseGrades(85)
st1_cs2 = aniket.courseStatus(85)
```

```python
# Entering marks in IVC103: Aptitude
gr1_cs3 = aniket.courseGrades(90)
st1_cs3 = aniket.courseStatus(90)

#STUDENT2

swarup = studentCourse("Swarup
Nandi","IT2207",15,"IT22","IVC101","Python
Programming","IVC102","Economics,Finance &
Entrepreneurship","IVC103","Aptitude")

# Entering marks in IVC101: Python Programming
gr2_cs1 = swarup.courseGrades(94)
st2_cs1 = swarup.courseStatus(94)

# Entering marks in IVC102: Economics,Finance &
Entrepreneurship
gr2_cs2 = swarup.courseGrades(79)
st2_cs2 = swarup.courseStatus(79)

# Entering marks in IVC103: Aptitude
gr2_cs3 = swarup.courseGrades(83)
st2_cs3 = swarup.courseStatus(83)

#STUDENT3

satarupa = studentCourse("Satarupa
Bagchi","IT2208",24,"IT22","IVC101","Python
Programming","IVC102","Economics,Finance &
Entrepreneurship","IVC103","Aptitude")

# Entering marks in IVC101: Python Programming
gr3_cs1 = satarupa.courseGrades(88)
st3_cs1 = satarupa.courseStatus(88)

# Entering marks in IVC102: Economics,Finance &
Entrepreneurship
gr3_cs2 = satarupa.courseGrades(86)
st3_cs2 =satarupa.courseStatus(86)

# Entering marks in IVC103: Aptitude
gr3_cs3 = satarupa.courseGrades(78)
st3_cs3 = satarupa.courseStatus(78)

#STUDENT4

sadashib = studentCourse("Sadashib
Ghosh","CSE2201",54,"CSE22","IVC101","Python
Programming","IVC102","Economics,Finance &
Entrepreneurship","IVC103","Aptitude")
```

```python
# Entering marks in IVC101: Python Programming
gr4_cs1 = sadashib.courseGrades(79)
st4_cs1 = sadashib.courseStatus(79)

# Entering marks in IVC102: Economics,Finance &
Entrepreneurship
gr4_cs2 = sadashib.courseGrades(68)
st4_cs2 = sadashib.courseStatus(68)

# Entering marks in IVC103: Aptitude
gr4_cs3 = sadashib.courseGrades(75)
st4_cs3 = sadashib.courseStatus(75)

#STUDENT5

nilavro = studentCourse("Nilavro
Roy","CSE2203",20,"CSE22","IVC101","Python
Programming","IVC102","Economics,Finance &
Entrepreneurship","IVC103","Aptitude")

# Entering marks in IVC101: Python Programming
gr5_cs1 = nilavro.courseGrades(65)
st5_cs1 = nilavro.courseStatus(65)

# Entering marks in IVC102: Economics,Finance &
Entrepreneurship
gr5_cs2 = nilavro.courseGrades(82)
st5_cs2 = nilavro.courseStatus(82)

# Entering marks in IVC103: Aptitude
gr5_cs3 = nilavro.courseGrades(77)
st5_cs3 = nilavro.courseStatus(77)

#STUDENT6

soumodip = studentCourse("Soumodip
Ghosh","CSE2205",25,"CSE22","IVC101","Python
Programming","IVC102","Economics,Finance &
Entrepreneurship","IVC103","Aptitude")

# Entering marks in IVC101: Python Programming
gr6_cs1 = soumodip.courseGrades(85)
st6_cs1 = soumodip.courseStatus(85)

# Entering marks in IVC102: Economics,Finance &
Entrepreneurship
gr6_cs2 = soumodip.courseGrades(78)
st6_cs2 = soumodip.courseStatus(78)

# Entering marks in IVC103: Aptitude
gr6_cs3 = soumodip.courseGrades(74)
```

```
       st6_cs3 = soumodip.courseStatus(74)
```

2.CREATING THE MARKS OBTAINED DATAFRAME AND CSV FILE:

```python
# Creating the Marks Obtained DataFrame and CSV file
myDict = {"Student Name":["Aniket Chatterjee","Swarup
Nandi","Satarupa Bagchi","Sadashib Ghosh","Nilavro
Roy","Soumodip Ghosh"],
          "Roll No.":[2,15,24,54,20,25],
          "IVC101: Python Programming":[93,94,88,79,65,85],
          "IVC102: Economics,Finance &
Entrepreneurship":[85,79,86,68,82,78],
          "IVC103: Aptitude":[90,83,78,75,77,74]

}
df1 = pd.DataFrame(myDict)
df1
```

OUTPUT:

	Student Name	Roll No.	IVC101: Python Programming	IVC102: Economics,Finance & Entrepreneurship	IVC103: Aptitude
0	Aniket Chatterjee	2	93	85	90
1	Swarup Nandi	15	94	79	83
2	Satarupa Bagchi	24	88	86	78
3	Sadashib Ghosh	54	79	68	75
4	Nilavro Roy	20	65	82	77
5	Soumodip Ghosh	25	85	78	74

```python
       df1.to_csv("Student_Courses.csv",index=False)
```
OUTPUT:

3.CREATING THE PERFORMANCE ANALYSIS DATAFRAME AND CSV FILE:

```
# Performance Analysis of all the Students

# Performance of Students in IVC101: Python Programming Course
dict_python = {"Class Roll No.":[2,15,24,54,20,25],
               "Name":["Aniket Chatterjee","Swarup
Nandi","Satarupa Bagchi","Sadashib Ghosh","Nilavro
Roy","Soumodip Ghosh"],
               "Marks Obtained":[93,94,88,79,65,85],

"Grades":[gr1_cs1,gr2_cs1,gr3_cs1,gr4_cs1,gr5_cs1,gr6_cs1],

"Status":[st1_cs1,st2_cs1,st3_cs1,st4_cs1,st5_cs1,st6_cs1]
}
df_python = pd.DataFrame(dict_python)
df_python
```

OUTPUT:

Out[21]:

	Class Roll No.	Name	Marks Obtained	Grades	Status
0	2	Aniket Chatterjee	93	A	PASS
1	15	Swarup Nandi	94	A	PASS
2	24	Satarupa Bagchi	88	B	PASS
3	54	Sadashib Ghosh	79	C	PASS
4	20	Nilavro Roy	65	D	PASS
5	25	Soumodip Ghosh	85	B	PASS

```
# Performance of Students in IVC102: Economics,Finance &
Entrepreneurship Course
dict_econ = {"Class Roll No.":[2,15,24,54,20,25],
             "Name":["Aniket Chatterjee","Swarup
Nandi","Satarupa Bagchi","Sadashib Ghosh","Nilavro
Roy","Soumodip Ghosh"],
             "Marks Obtained":[85,79,86,68,82,78],

"Grades":[gr1_cs2,gr2_cs2,gr3_cs2,gr4_cs2,gr5_cs2,gr6_cs2],

"Status":[st1_cs2,st2_cs2,st3_cs2,st4_cs2,st5_cs2,st6_cs2]
             }
df_econ = pd.DataFrame(dict_econ)
df_econ
```

OUTPUT:

	Class Roll No.	Name	Marks Obtained	Grades	Status
0	2	Aniket Chatterjee	85	B	PASS
1	15	Swarup Nandi	79	C	PASS
2	24	Satarupa Bagchi	86	B	PASS
3	54	Sadashib Ghosh	68	D	PASS
4	20	Nilavro Roy	82	B	PASS
5	25	Soumodip Ghosh	78	C	PASS

```
# Performance of Students in IVC103: Aptitude Course
dict_apt = {"Class Roll No.":[2,15,24,54,20,25],
            "Name":["Aniket Chatterjee","Swarup
Nandi","Satarupa Bagchi","Sadashib Ghosh","Nilavro
Roy","Soumodip Ghosh"],
            "Marks Obtained":[90,83,78,75,77,74],

"Grades":[gr1_cs3,gr2_cs3,gr3_cs3,gr4_cs3,gr5_cs3,gr6_cs3],

"Status":[st1_cs3,st2_cs3,st3_cs3,st4_cs3,st5_cs3,st6_cs3]
            }
df_apti = pd.DataFrame(dict_apt)
df_apti
```

OUTPUT:

	Class Roll No.	Name	Marks Obtained	Grades	Status
0	2	Aniket Chatterjee	90	A	PASS
1	15	Swarup Nandi	83	B	PASS
2	24	Satarupa Bagchi	78	C	PASS
3	54	Sadashib Ghosh	75	C	PASS
4	20	Nilavro Roy	77	C	PASS
5	25	Soumodip Ghosh	74	C	PASS

4.COURSE STATISTICS:

```python
# Course Statistics

# IVC101: Python Programming Course Statistics
x1 = ['A','A','B',"C","D","B"]
plt.hist(x1,ec='red')
plt.xlabel("Grades---------->")
plt.ylabel("Number of Students-------->")
plt.title("IVC101: Python Programming Histogram")
plt.show()
```
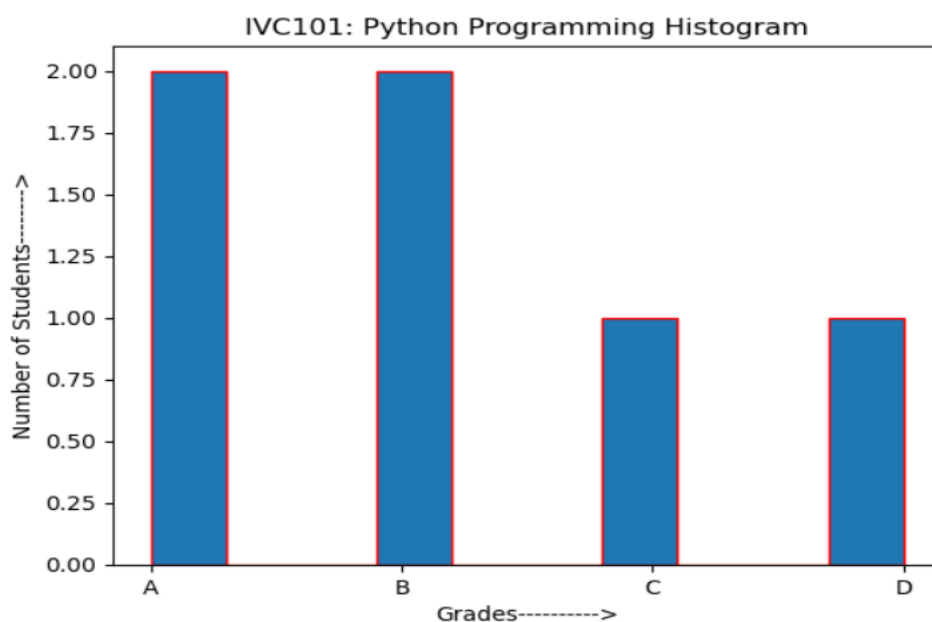
OUTPUT:


```python
# IVC102: Economics,Finance & Entrepreneurship Course
Statistics
x2 = ['B',"C",'B',"D",'B',"C"]
plt.hist(x2,ec='red')
plt.xlabel("Grades---------->")
plt.ylabel("Number of Students-------->")
plt.title("IVC102: Economics,Finance & Entrepreneurship
Histogram")
plt.show()
```

OUTPUT:

IVC102: Economics,Finance & Entrepreneurship Histogram
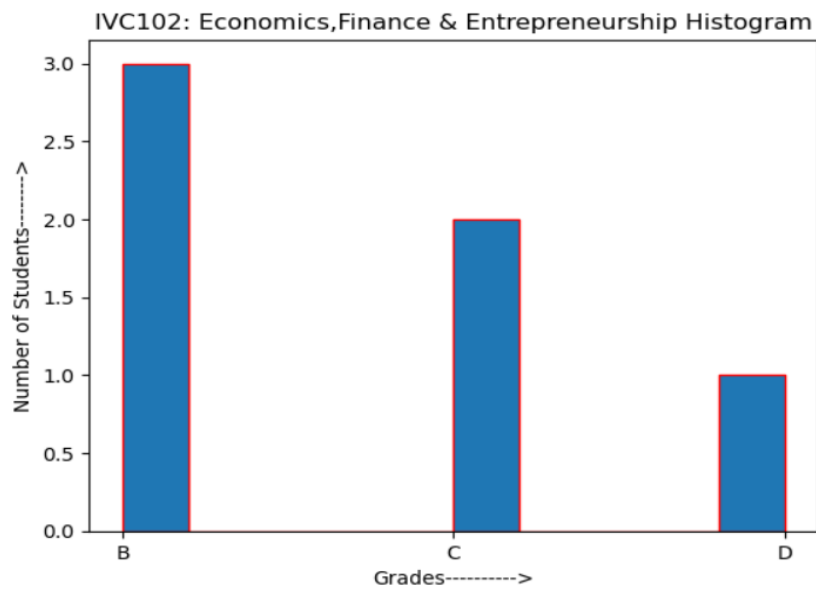
```
# IVC103: Aptitude Course Statistics
x3 = ['A','B','C','C','C',"C"]
plt.hist(x3,ec='red')
plt.xlabel("Grades---------->")
plt.ylabel("Number of Students-------->")
plt.title("IVC103: Aptitude Histogram")
plt.show()
```

OUTPUT:

IVC103: Aptitude Histogram
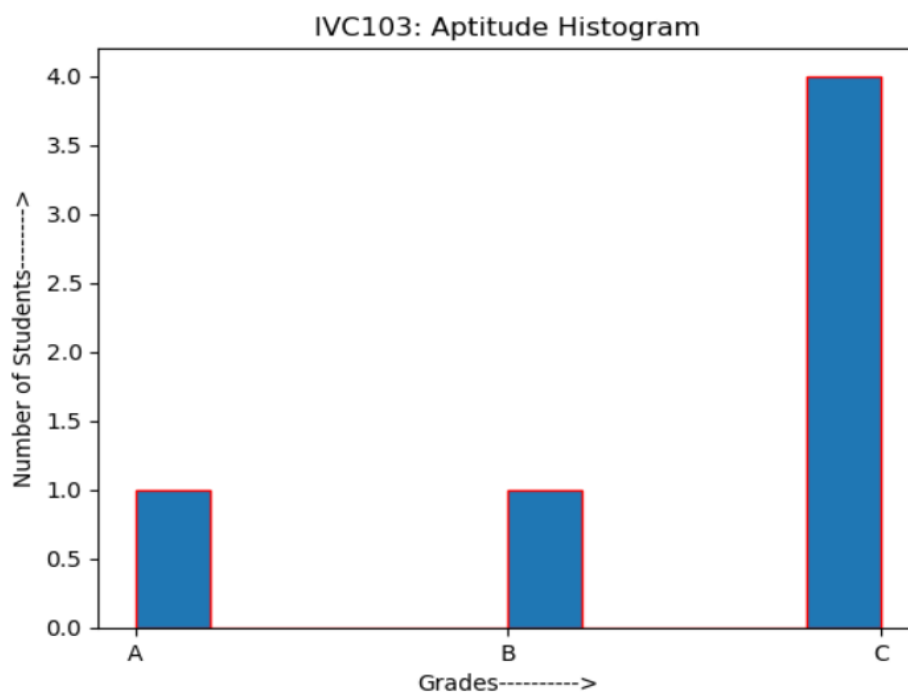
MODULE: - BATCH

1.CREATING BATCHES

```python
class stdBatch(studentCourse):
    Course = np.array(["Data Base Management
System","Operating System","Data Structures and
Algorithms","Vector Calculus","Digital Electronics","Embedded
Systems"])
    def __init__(self,btch_id,btch_name,dept_name):
        self.btch_id = btch_id
        self.btch_name = btch_name
        self.dept_name = dept_name

aniket = stdBatch("IT22","IT 2022-2026","IT")
swarup = stdBatch("IT22","IT 2022-2026","IT")
satarupa = stdBatch("IT22","IT 2022-2026","IT")
sadashib  = stdBatch("CSE22","CSE 2022-2026","CSE")
nilavro = stdBatch("CSE22","CSE 2022-2026","CSE")
soumodip = stdBatch("CSE22","CSE 2022-2026","CSE")


# Batch -  IT 2022-2026
dict_it = {"Batch ID":["IT22","IT22","IT22"],
           "Batch Name":["IT 2022-2026","IT 2022-2026","IT
2022-2026"],
           "Department Name":["IT","IT","IT"],
           "List Of Courses":["Data Base Management
System","Operating System","Data Structures and Algorithms"],
           "List Of Students":["Aniket Chatterjee","Swarup
Nandi","Satarupa Bagchi"]
}
df_it = pd.DataFrame(dict_it)
df_it
```

OUTPUT:

Out[28]:		Batch ID	Batch Name	Department Name	List Of Courses	List Of Students
	0	IT22	IT 2022-2026	IT	Data Base Management System	Aniket Chatterjee
	1	IT22	IT 2022-2026	IT	Operating System	Swarup Nandi
	2	IT22	IT 2022-2026	IT	Data Structures and Algorithms	Satarupa Bagchi

```
df_it.to_csv("IT 2022-2026.csv",index = False)
```

OUTPUT:


```
# Batch -  CSE 2022-2026
dict_cse = {"Batch ID":["CSE22","CSE22","CSE22"],
           "Batch Name":["CSE 2022-2026","CSE 2022-2026","CSE
2022-2026"],
           "Department Name":["CSE","CSE","CSE"],
            "List Of Courses":["Vector Calculus","Digital
Electronics","Embedded Systems"],
            "List Of Students":["Sadashib Ghosh","Nilavro
Roy","Soumodip Ghosh"]
            }
df_cse = pd.DataFrame(dict_cse)
df_cse
```

OUTPUT:

Out[30]:	Batch ID	Batch Name	Department Name	List Of Courses	List Of Students
0	CSE22	CSE 2022-2026	CSE	Vector Calculus	Sadashib Ghosh
1	CSE22	CSE 2022-2026	CSE	Digital Electronics	Nilavro Roy
2	CSE22	CSE 2022-2026	CSE	Embedded Systems	Soumodip Ghosh

```
df_cse.to_csv("CSE 2022-2026.csv",index=False)
```

OUTPUT:

2. **PERFORMANCE OF STUDENTS IN THE TWO BATCHES AND THEIR RESPECTIVE PIE CHARTS:**

```
# Performance of Students in Batch -  IT 2022-2026
dict_perit = {"Class Roll No.":[2,15,24],
    "Names":["Aniket Chatterjee","Swarup Nandi","Satarupa Bagchi"],
    "Data Base Management System":[90,85,82],
    "Operating System":[84,78,81],
    "Data Structures and Algorithms":[91,93,80],
    "Percentage":[(90+84+91)/3, (85+78+93)/3 , (82+81+80)/3]
}
df_perit = pd.DataFrame(dict_perit)
df_perit
```

OUTPUT:

Out[32]:	Class Roll No.	Names	Data Base Management System	Operating System	Data Structures and Algorithms	Percentage
0	2	Aniket Chatterjee	90	84	91	88.333333
1	15	Swarup Nandi	85	78	93	85.333333
2	24	Satarupa Bagchi	82	81	80	81.000000

```
# Pie Chart
std_vals1 = [88.33,85.33,81.00]
std_labels1 = ["Aniket Chatterjee","Swarup Nandi","Satarupa Bagchi"]
plt.axis("equal") # Equalising the pixels of each pie
plt.pie(std_vals1,labels = std_labels1,radius = 1.25,autopct = '%0.2f%%')
plt.show()
```

OUTPUT:


```
# Performance of Students in Batch - CSE 2022-2026
dict_percse={"Class Roll No.":[54,20,25],
             "Names":["Sadashib Ghosh","Nilavro Roy","Soumodip Ghosh"],
             "Vector Calculus":[85,82,84],
             "Digital Electronics":[78,75,86],
             "Embedded Systems":[88,79,78],
             "Percentage":[(85+78+88)/3 ,(82+75+79)/3 ,(84+86+78)/3]
                 }
df_percse = pd.DataFrame(dict_percse)
df_percse
```

OUTPUT:

	Class Roll No.	Names	Vector Calculus	Digital Electronics	Embedded Systems	Percentage
0	54	Sadashib Ghosh	85	78	88	83.666667
1	20	Nilavro Roy	82	75	79	78.666667
2	25	Soumodip Ghosh	84	86	78	82.666667

Out[34]: (leftmost column label)

```
# Pie Chart
std_vals2 = [83.6667,78.6667,82.6667]
std_labels2 = ["Sadashib Ghosh","Nilavro Roy","Soumodip Ghosh"]
plt.axis("equal") # Equalising the pixels of each pie
plt.pie(std_vals2,labels = std_labels2,radius = 1.25,autopct = '%0.2f%%')
plt.show()
```

OUTPUT:
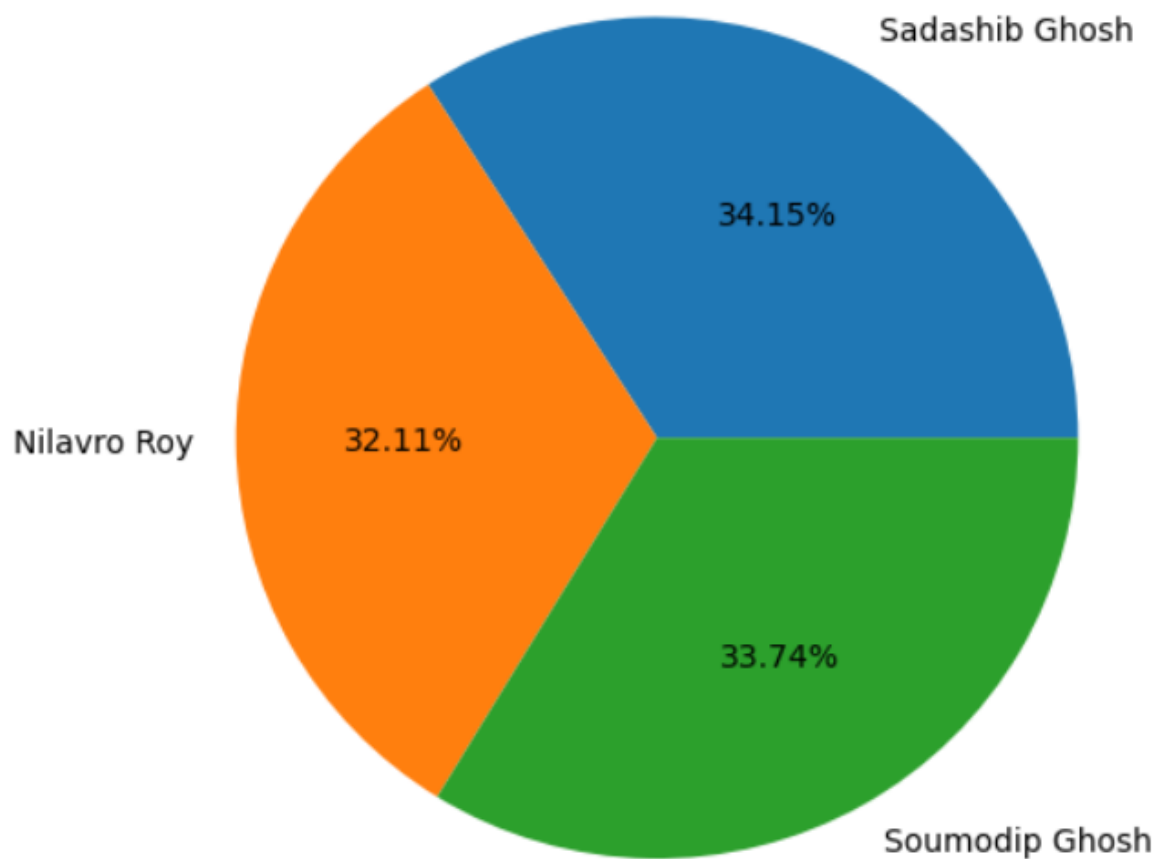
MODULE: - DEPARTMENT

1.CREATING DEPARTMENTS:

```
class stdDepartment(stdBatch):
    def __init__(self,dept_id,dept_name):
        self.dept_id = dept_id
        self.dept_name = dept_name

aniket = stdDepartment("IT","Information Technology")
swarup = stdDepartment("IT","Information Technology")
satarupa = stdDepartment("IT","Information Technology")
sadashib = stdDepartment("CSE","Computer Science and Engineering")
nilavro = stdDepartment("CSE","Computer Science and Engineering")
soumodip = stdDepartment("CSE","Computer Science and Engineering")
```

2. AVERAGE PERFORMANCE OF BATCHES (IN %):

```
dict_dept = {"Department ID":["CSE","IT"],
        "Deparment Name":["Computer Science and
Engineering","Information Technology"],
        "List Of Batches":["CSE22","IT22"],
        "Average Performance(in %)":[(85+78+88+82+75+79+84+86+78)/9 ,
(90+84+91+85+78+93+82+81+80)/9]
}
df_dept = pd.DataFrame(dict_dept)
df_dept
```
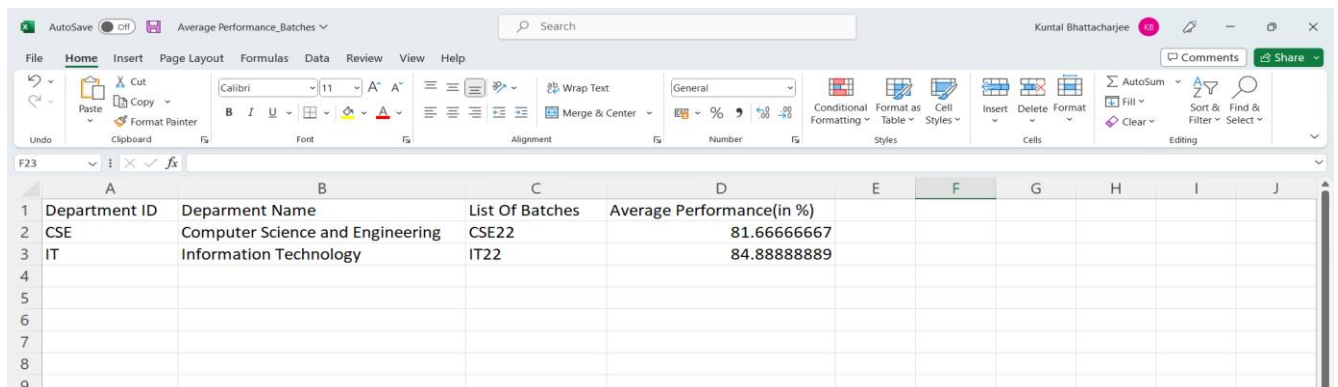
OUTPUT:

Out[38]:	Department ID	Deparment Name	List Of Batches	Average Performance(in %)
0	CSE	Computer Science and Engineering	CSE22	81.666667
1	IT	Information Technology	IT22	84.888889

```
df_dept.to_csv("Average Performance_Batches.csv",index=False)
```

OUTPUT:

3.PERFORMANCE OF STUDENTS IN THEIR RESPECTIVE BATCHES AND BATCH-WISE LINE PLOTS:

```
# Performance of Students in Batch - CSE 2022-2026
dict_percse={"Class Roll No.":[54,20,25],
            "Names":["Sadashib Ghosh","Nilavro Roy","Soumodip Ghosh"],
            "Vector Calculus":[85,82,84],
            "Digital Electronics":[78,75,86],
            "Embedded Systems":[88,79,78],
            "Percentage":[(85+78+88)/3 ,(82+75+79)/3 ,(84+86+78)/3]
               }
df_percse = pd.DataFrame(dict_percse)
df_percse
```

OUTPUT:

Out[41]:

	Class Roll No.	Names	Vector Calculus	Digital Electronics	Embedded Systems	Percentage
0	54	Sadashib Ghosh	85	78	88	83.666667
1	20	Nilavro Roy	82	75	79	78.666667
2	25	Soumodip Ghosh	84	86	78	82.666667

```
# Line Plot for Batch - CSE 2022-2026

x1 = np.array([20,25,54])

y1 = np.array([78.666667,82.666667,83.666667])

plt.xlabel("CSE 2022-2026--------->")

plt.ylabel("Average Percentage------->")

plt.plot(x1,y1)

plt.show()
```
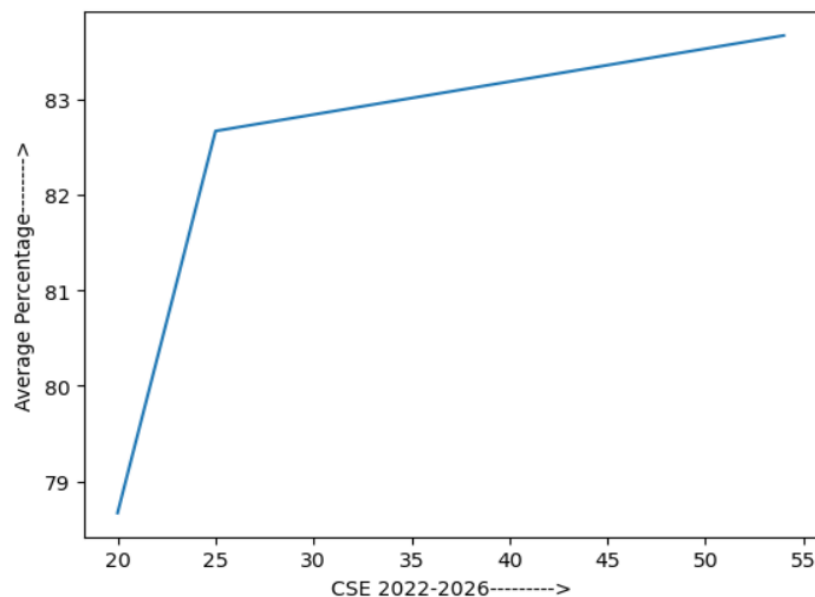
OUTPUT:

```
# Performance of Students in Batch -  IT 2022-2026

dict_perit = {"Class Roll No.":[2,15,24],

    "Names":["Aniket Chatterjee","Swarup Nandi","Satarupa Bagchi"],

    "Data Base Management System":[90,85,82],

    "Operating System":[84,78,81],

    "Data Structures and Algorithms":[91,93,80],

    "Percentage":[(90+84+91)/3, (85+78+93)/3 , (82+81+80)/3]

}

df_perit = pd.DataFrame(dict_perit)

df_perit
```

OUTPUT:

Out[42]:

	Class Roll No.	Names	Data Base Management System	Operating System	Data Structures and Algorithms	Percentage
0	2	Aniket Chatterjee	90	84	91	88.333333
1	15	Swarup Nandi	85	78	93	85.333333
2	24	Satarupa Bagchi	82	81	80	81.000000

```
# Line Plot for Batch - IT 2022-2026

x1 = np.array([2,15,24])

y1 = np.array([88.333333,85.333333,81.000000])

plt.xlabel("IT 2022-2026--------->")

plt.ylabel("Average Percentage-------->")

plt.plot(x1,y1)

plt.show()
```

OUTPUT:
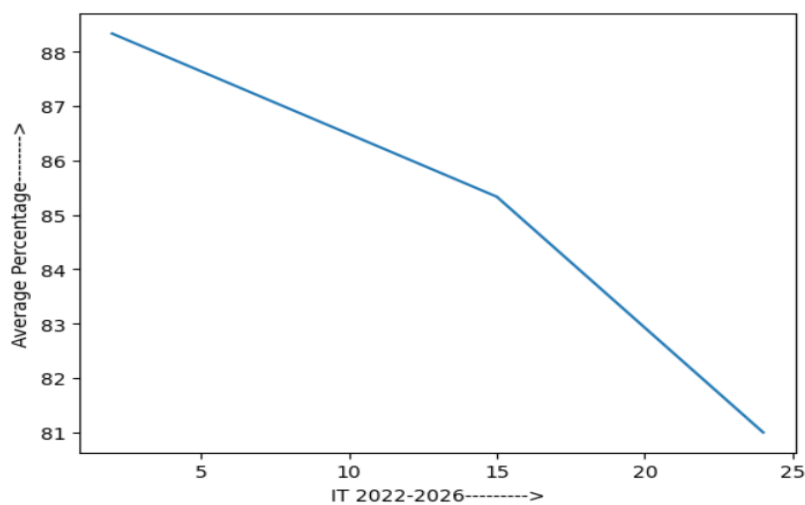
MODULE: - EXAMINATION

1.END-SEMESTER EXAMINATION

```python
class EndSem:
    def __init__(self,name,std_roll,btch_id,btch_name,dept_id):
        self.name = name
        self.std_roll = std_roll
        self.btch_id = btch_id
        self.btch_name = btch_name
        self.dept_id = dept_id

    def scoreGrades(self,marks):
        gr = ""
        if (marks>=90):
            gr = "A"
        elif (marks>=80):
            gr = "B"
        elif (marks>=70):
            gr = "C"
        elif (marks>=60):
            gr = "D"
        elif (marks>=50):
            gr = "E"
        elif (marks<40):
            gr = "F"
        return gr
```

2.INSTANTIATING THE OBJECTS:

```python
aniket = EndSem("Aniket Chatterjee",2,"IT22","IT2022-2026","IT")

# Entering Aniket's marks in Engineering Mathematics
gr1_it1 = aniket.scoreGrades(92)
# Entering Aniket's marks in Engineering Chemistry
gr2_it1 = aniket.scoreGrades(83)
```

```python
# Entering Aniket's marks in Engineering Mechanics
gr3_it1 = aniket.scoreGrades(79)
# Entering Aniket's marks in Python Programming
gr4_it1 = aniket.scoreGrades(91)
# Entering Aniket's marks in Engineering Physics
gr5_it1  =aniket.scoreGrades(84)
# Entering Aniket's marks in Aptitude
gr6_it1  =aniket.scoreGrades(81)

percent_it1 = (92+83+79+91+84+81)/6

swarup = EndSem("Swarup Nandi",15,"IT22","IT2022-2026","IT")

# Entering Swarup's marks in Engineering Mathematics
gr1_it2 = swarup.scoreGrades(90)
# Entering Swarup's marks in Engineering Chemistry
gr2_it2 = swarup.scoreGrades(81)
# Entering Swarup's marks in Engineering Mechanics
gr3_it2 = swarup.scoreGrades(77)
# Entering Swarup's marks in Python Programming
gr4_it2 = swarup.scoreGrades(79)
# Entering Swarup's marks in Engineering Physics
gr5_it2  =swarup.scoreGrades(83)
# Entering Swarup's marks in Aptitude
gr6_it2  =swarup.scoreGrades(80)

percent_it2 = (90+81+77+79+83+80)/6

satarupa = EndSem("Satarupa Bagchi",24,"IT22","IT2022-2026","IT")

# Entering Satarupa's marks in Engineering Mathematics
gr1_it3 = satarupa.scoreGrades(88)
# Entering Satarupa's marks in Engineering Chemistry
gr2_it3 = satarupa.scoreGrades(84)
# Entering Satarupa's marks in Engineering Mechanics
gr3_it3 = satarupa.scoreGrades(75)
# Entering Satarupa's marks in Python Programming
gr4_it3 = satarupa.scoreGrades(95)
# Entering Satarupa's marks in Engineering Physics
gr5_it3  =satarupa.scoreGrades(87)
# Entering Satarupa's marks in Aptitude
gr6_it3  =satarupa.scoreGrades(82)

percent_it3 = (88+84+75+95+87+82)/6

sadashib = EndSem("Sadashib Ghosh",54,"CSE22","CSE2022-2026","CSE")

# Entering Sadashib's marks in Engineering Mathematics
gr1_cse1 = sadashib.scoreGrades(93)
# Entering Sadashib's marks in Engineering Chemistry
gr2_cse1 = sadashib.scoreGrades(85)
# Entering Sadashib's marks in Engineering Mechanics
gr3_cse1 = sadashib.scoreGrades(73)
# Entering Sadashib's marks in Python Programming
gr4_cse1 = sadashib.scoreGrades(94)
# Entering Sadashib's marks in Engineering Physics
gr5_cse1  =sadashib.scoreGrades(81)
```

```python
# Entering Sadashib's marks in Aptitude
gr6_cse1  =sadashib.scoreGrades(84)

percent_cse1 = (93+85+73+94+81+84)/6


nilavro = EndSem("Nilavro Roy",20,"CSE22","CSE2022-2026","CSE")


# Entering Nilavro's marks in Engineering Mathematics

gr1_cse2 = nilavro.scoreGrades(82)

# Entering Nilavro's marks in Engineering Chemistry

gr2_cse2 = nilavro.scoreGrades(78)

# Entering Nilavro's marks in Engineering Mechanics

gr3_cse2 = nilavro.scoreGrades(76)

# Entering Nilavro's marks in Python Programming

gr4_cse2 = nilavro.scoreGrades(71)

# Entering Nilavro's marks in Engineering Physics

gr5_cse2  =nilavro.scoreGrades(74)

# Entering Nilavro's marks in Aptitude

gr6_cse2  =nilavro.scoreGrades(68)


percent_cse2 = (82+78+76+71+74+68)/6
soumodip = EndSem("Soumodip Ghosh",25,"CSE22","CSE2022-2026","CSE")


# Entering Soumodip's marks in Engineering Mathematics

gr1_cse3 = soumodip.scoreGrades(85)

# Entering Soumodip's marks in Engineering Chemistry

gr2_cse3 = soumodip.scoreGrades(81)

# Entering Soumodip's marks in Engineering Mechanics

gr3_cse3 = soumodip.scoreGrades(77)

# Entering Soumodip's marks in Python Programming

gr4_cse3 = soumodip.scoreGrades(78)

# Entering Soumodip's marks in Engineering Physics

gr5_cse3  =soumodip.scoreGrades(80)

# Entering Soumodip's marks in Aptitude

gr6_cse3  =soumodip.scoreGrades(78)
```

```
percent_cse3 = (85+81+77+78+80+78)/6
```

3. PERFORMANCE OF STUDENTS IN THE END-SEMESTER EXAMINATION:

```
# Performance of Students in ENDSEM Exam

dict_final = {

    "Name":["Aniket Chatterjee","Swarup Nandi","Satarupa Bagchi","Sadashib
Ghosh","Nilavro Roy","Soumodip Ghosh"],

    "Class Roll No.":[2,15,24,54,20,25],

    "Batch ID":["IT","IT","IT","CSE","CSE","CSE"],

    "Batch Name":["IT2022-2026","IT2022-2026","IT2022-2026","CSE2022-
2026","CSE2022-2026","CSE2022-2026"],

    "Department ID":["IT","IT","IT","CSE","CSE","CSE"],

"Peercentage":[percent_it1,percent_it2,percent_it3,percent_cse1,percent_cse
2,percent_cse3]

}

df_end = pd.DataFrame(dict_final)

df_end
```
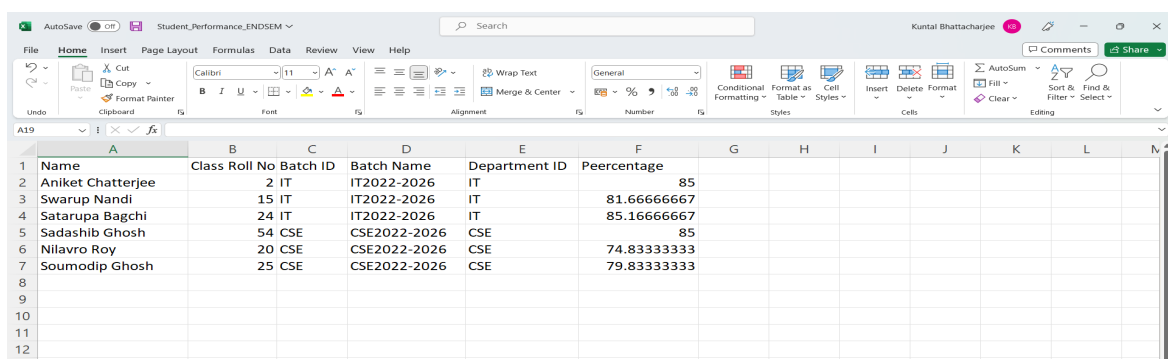
OUTPUT:

Out[57]:

	Name	Class Roll No.	Batch ID	Batch Name	Department ID	Peercentage
0	Aniket Chatterjee	2	IT	IT2022-2026	IT	85.000000
1	Swarup Nandi	15	IT	IT2022-2026	IT	81.666667
2	Satarupa Bagchi	24	IT	IT2022-2026	IT	85.166667
3	Sadashib Ghosh	54	CSE	CSE2022-2026	CSE	85.000000
4	Nilavro Roy	20	CSE	CSE2022-2026	CSE	74.833333
5	Soumodip Ghosh	25	CSE	CSE2022-2026	CSE	79.833333

```
df_end.to_csv("Student_Performance_ENDSEM.csv",index=False)
```

OUTPUT:

4.SCATTER PLOTS:

```python
# Scatter PLot of BATCH - IT 2022-2026
x = [2,15,24]
em_it = [92,90,88]
plt.scatter(x,em_it,label = "Engg Math")
em_ch = [83,81,84]
plt.scatter(x,em_ch,label = "Engg Chem")
em_mec = [79,77,75]
plt.scatter(x,em_mec,label = "Engg Mech")
em_py = [91,79,95]
plt.scatter(x,em_py,label = "Python Prog")
em_ph = [84,83,87]
plt.scatter(x,em_ph,label = "Engg Physics")
em_apt = [81,80,82]
plt.scatter(x,em_apt,label = "Aptitude")
plt.xlabel("Batch - IT 2022-2026--------->")
plt.ylabel("Marks-------->")
plt.legend()
plt.show()
```
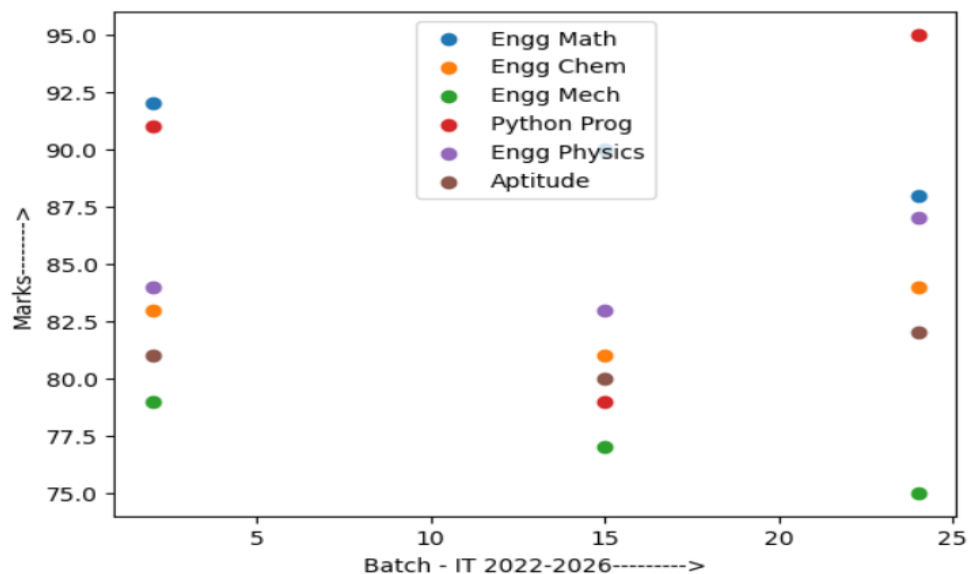
OUTPUT:

```
# Scatter PLot of BATCH - CSE 2022-2026

x = [54,20,25]

em_cs = [93,82,85]

plt.scatter(x,em_cs,label = "Engg Math")

em_chcs = [85,78,81]

plt.scatter(x,em_chcs,label = "Engg Chem")

em_mec = [73,76,77]

plt.scatter(x,em_mec,label = "Engg Mech")

em_pycs = [94,71,78]

plt.scatter(x,em_pycs,label = "Python Prog")

em_phcs = [81,74,80]

plt.scatter(x,em_phcs,label = "Engg Physics")

em_aptcs = [84,68,78]

plt.scatter(x,em_aptcs,label = "Aptitude")

plt.xlabel("Batch - CSE 2022-2026--------->")

plt.ylabel("Marks-------->")

plt.legend()

plt.show()
```

OUTPUT: