Title: Student Performance and Grading System

Description: A python-based console program that can be used to manage student data, compute averages, assign grades, and filter students according to their performance.

In [1]:

```
class Students:
    def __init__(self,roll_number,name,marks):
        self.roll_number = roll_number
        self.name = name
        self.marks = marks
        self.avg = self.avg_function()
        self.grade =self.grade_function()


    def avg_function(self):
        average=sum(self.marks.values())/len(self.marks)
        return average

    def grade_function(self):
        avg=self.avg
        if avg>=90:
            return 'A'
        elif avg>=75:
            return 'B'
        elif avg>=60:
            return 'C'
        elif avg>=45:
            return 'D'
        else:
            return 'F'

    def display_information(self):
        print("student roll_number: {}".format(self.roll_number))
        print("student  name:  {}".format(self.name))
        print("student average: {}".format(self.avg))
        print("student grade: {}".format(self.grade))

def add_student():
    roll_number = int(input("Enter roll_number:"))
    name = input("Enter name:")
    subject = ['Maths','English','Physics','Chemistry','economics']
    d={}
    for i in subject:
        d[i]=int(input("Enter the marks in {}".format(i)))
    return Students(roll_number,name,d)


students=[]
while True:
    print("1.Add student \n")
    print("2.Average \n")
    print("3.Grade \n")
    print("4.Display information \n")
    print("5.Filter Grade B and above \n")
    print("Enter '0' for Exit \n")
```

```
    choice = int(input("Enter your choice:"))

    if choice==1:
        students.append(add_student())
    elif choice==2:
        for i in students:
            print(i.avg)
    elif choice==3:
        for i in students:
            print(i.grade)
    elif choice==4:
        for i in students:
            i.display_information()
    elif choice==5:
        filter_details=list(filter(lambda x:x.grade in['A','B'],students))

        print("Students with grade A or B:")
        for i in filter_details:
            print(i.name,"with Grade",i.grade)
    else:
        break
```

```
1.Add student

2.Average

3.Grade

4.Display information

5.Filter Grade B and above

Enter '0' for Exit

1.Add student

2.Average

3.Grade

4.Display information

5.Filter Grade B and above

Enter '0' for Exit
```

1.Add student

2.Average

3.Grade

4.Display information

5.Filter Grade B and above

Enter '0' for Exit

1.Add student

2.Average

3.Grade

4.Display information

5.Filter Grade B and above

Enter '0' for Exit

1.Add student

2.Average

3.Grade

4.Display information

5.Filter Grade B and above

Enter '0' for Exit

89.2
90.4
90.0
73.2
1.Add student

2.Average

3.Grade

4.Display information

5.Filter Grade B and above

Enter '0' for Exit

```
B
A
A
C
1.Add student

2.Average

3.Grade

4.Display information

5.Filter Grade B and above

Enter '0' for Exit

student roll_number: 1
student name: sindhu
student average: 89.2
student grade: B
student roll_number: 2
student name: vyshu
student average: 90.4
student grade: A
student roll_number: 3
student name: rishi
student average: 90.0
student grade: A
student roll_number: 4
student name: chinni
student average: 73.2
student grade: C
1.Add student

2.Average

3.Grade

4.Display information

5.Filter Grade B and above

Enter '0' for Exit
```

```
Students with grade A or B:
sindhu with Grade B
vyshu with Grade A
rishi with Grade A
1.Add student

2.Average

3.Grade

4.Display information

5.Filter Grade B and above

Enter '0' for Exit
```

In [ ]: