1) Create a class named Student with name, score as instance attributes. Assign values to both of these attributes using a constructor.

Create 2 Student objects. And also define a method called 'display' in the Student class - which, when called should print the name and score of the student.

In [5]:
```
class Student:
    def __init__(self,name,score):
        self.name=name
        self.score=score
    def display(self):
        print("My Name is ",self.name,"and I scored",self.score,"Marks")

student1=Student("ajith",100)
student2=Student("Akshay",95)

student1.display()
student2.display()
```

```
My Name is  ajith and I scored 100 Marks
My Name is  Akshay and I scored 95 Marks
```

2) Extend the above solution and add another instance attribute called grade (should be string). Assign value to grade from within the constructor.

The value should not be taken from user input. Instead use the following conditions and assign values to grade by using the value of score. grade = A+ if score >=90 grade = A if score >=80 and <90 grade = B+ if score >=70 and <80 and so on. if score is below 40 then grade should be "FAILED"

In [25]:
```
# Method 1


class Student:
    def __init__(self,name,score):
        self.name=name
        self.score=score

    def calculate_grade(self):
        if self.score>=90:
            print(self.name,"You Got A+")
        elif self.score>=80 and self.score<90:
            print(self.name,"You Got A")
        elif self.score>=70 and self.score<80:
            print(self.name,"You Got b+")
        elif self.score>=60 and self.score<70:
            print(self.name,"You Got b")
        elif self.score<40:
            print(self.name,"You  are Fail")

    def display(self):
        print("My Name is ",self.name,"and I scored",self.score,"Marks")

student1=Student("ajith",100)
student2=Student("Akshay",89)


student1.calculate_grade()
student2.calculate_grade()
```

```
ajith You Got A+
Akshay You Got A
```

In [68]:
```
# Method 2

class Student:
    def __init__(self,name,score,grade):
        self.name=name
        self.score=score
        self.grade=grade

    def calculate_grade(self):
        if self.score>=90:
            self.grade="A+"
            print(self.name,"You Got A+")
        elif self.score>=80 and self.score<90:
            self.grade="A"
            print(self.name,"You Got A")
        elif self.score>=70 and self.score<80:
            self.grade="B+"
            print(self.name,"You Got b+")
        elif self.score>=60 and self.score<70:
            self.grade="B"
            print(self.name,"You Got b")
        elif self.score<40:
            sself.grade="D"
            print(self.name,"You  are Fail")

    def display(self):
        print("My Name is ",self.name,"and I scored",self.score,"Marks")


student1=Student("ajith",100,"")
student2=Student("Akshay",89,"")


student1.calculate_grade()
student2.calculate_grade()

print(student1.grade)  # calling variables
print(student2.grade)
```

```
ajith You Got A+
Akshay You Got A
A+
A
```

3) Extend the above solution again and add an instance method named 'get_ehs' (short for eligible for higher studies) It should return a boolean. Return True if score is 40 and above.

Modify the 'display' method to include this EHS status also while printing.

In [72]:
```
class Student:
    def __init__(self,name,score):
        self.name=name
        self.score=score

    def calculate_grade(self):
        if self.score>=90:
            print(self.name,"You Got A+")
        elif self.score>=80 and self.score<90:
            print(self.name,"You Got A")
        elif self.score>=70 and self.score<80:
            print(self.name,"You Got b+")
        elif self.score>=60 and self.score<70:
            print(self.name,"You Got b")
        elif self.score<40:
            print(self.name,"You  are Fail")

    def get_ehs(self):
        if self.score>40:
            return True
        else:
            return False




student1=Student("ajith",100)
student2=Student("Akshay",89)


student1.calculate_grade()
student2.calculate_grade()
student1.get_ehs()
student2.get_ehs()
```

```
ajith You Got A+
Akshay You Got A
```

Out[72]:
```
True
```

4) Extend the above solution again and add another instance method called 'as_dict'. The method should return a dictionary with the data of the student. It should contain 'name', 'score', 'grade', 'ehs_status' keys and their respective values.

Create Student 2 objects and call each of its methods.

In [85]:
```
class Student:

    def __init__(self,name,score,grade):
        self.name=name
        self.score=score
        self.grade=grade

    def calculate_grade(self):
        if self.score>=90:
            self.grade="A+"
            print(self.name,"You Got A+")
        elif self.score>=80 and self.score<90:
            self.grade="A"
            print(self.name,"You Got A")
        elif self.score>=70 and self.score<80:
            self.grade="B+"
            print(self.name,"You Got b+")
        elif self.score>=60 and self.score<70:
            self.grade="B"
            print(self.name,"You Got b")
        elif self.score<40:
            sself.grade="D"
            print(self.name,"You  are Fail")

    def as_dict(self):
        return {
            'name': self.name,
            'score': self.score,
            'grade': self.grade,
            'ehs_status':self.get_ehs()
        }

    def get_ehs(self):
        if self.score>=40:
            return True
            print(self.name,"Your Elibile For Higher Studies")
        else:
            return False
            print(self.name,"Your Not Elibile For Higher Studies")


    def display(self):
        print("name:",self.name)
        print("score:",self.score)
        print("grade:",self.grade)
        print("ehs:",self.get_ehs())

student1=Student("ajith",100,"")
student2=Student("Akshay",89,"")



student1.calculate_grade()
student2.calculate_grade()


print(student1.as_dict())

print(student2.as_dict())
student1.display()
student2.display()
```

```
ajith You Got A+
Akshay You Got A
{'name': 'ajith', 'score': 100, 'grade': 'A+', 'ehs_status': True}
{'name': 'Akshay', 'score': 89, 'grade': 'A', 'ehs_status': True}
name: ajith
score: 100
grade: A+
ehs: True
name: Akshay
score: 89
grade: A
ehs: True
```

In [ ]:
```

```