Q1: Program for Arithmetic operations using class (add, sub, mul, div).

Program:

```
class Arithmetic:
    def __init__(self, n1, n2):
        self.n1 = n1
        self.n2 = n2

    def add(self):
        return self.n1 + self.n2

    def sub(self):
        return self.n1 - self.n2

    def mul(self):
        return self.n1 * self.n2

    def div(self):
        return self.n2 / self.n2

obj = Arithmetic(10, 5)
print("Addition:", obj.add())
print("Subtraction:", obj.sub())
print("Multiplication:", obj.mul())
print("Division:", obj.div())
```

Output:

```
Addition: 15
Subtraction: 5
Multiplication: 50
Division: 2.0
```

Q2: Program for Bank operations (deposit, withdraw, display).

//Program:

```
class Bank:
    def __init__(self, name, accno, balance):
        self.name = name
        self.accno = accno
        self.balance = balance

    def deposit(self, amount):
        self.balance += amount

    def withdraw(self, amount):
        if amount <= self.balance:
            self.balance -= amount
        else
            print("Insufficient Balance")

    def display(self):
        print("Name:", self.name)
        print("Account a/o:", self.accno)
        print("Balance:", self.balance)

obj = Bank("Satyajeet", 48343180, 5101)

obj.deposit(1000)  // Balance becomes 6101
obj.withdraw(2000) // Balance becomes 4101
obj.display()
```

//output:

```
Name: Satyajeet
Account No: 48343180
Balance : 4101
```

Q3: Program for Employee Salary Calculation.

//Program:

```
class Employee:
    def __init__(self, emp_id, name, basic):
        self.emp_id = emp_id
        self.name = name
        self.basic = basic
        self.gross = 0
    def calculate(self):
        hra = 0.4 * self.basic
        da = 0.6 * self.basic
        self.gross = self.basic + hra + da
    def display(self):
        print("Employee ID:", self.emp_id)
        print("Name:", self.name)
        print("Basic Salary:", self.basic)
        print("Gross Salary:", self.gross)

obj = Employee(1011, "Sarthak", 20000)
obj.calculate()
obj.display()
```

//output:

```
Name: Sarthak
Basic Salary: 20000
Gross Salary: 40000.0
```

Q4: Program for Student Grade Calculation

```
//Program:
class Student:
    def __init__(self, name, reg, mark):
        self.name = name
        self.reg = reg
        self.mark = mark
        self.grade = ""

    def calc_grade(self):
        if self.mark >= 90:
            self.grade = "O"
        elif self.mark >= 80:
            self.grade = "A"
        elif self.mark >= 70:
            self.grade = "B"
        elif self.mark >= 60:
            self.grade = "C"
        elif self.mark >= 50:
            self.grade = "D"
        elif self.mark >= 40:
            self.grade = "E"
        else:
            self.grade = "F"

    def display(self):
        print("Name:", self.name)
        print("Reg No:", self.reg)
        print("Mark:", self.mark)
        print("Grade:", self.grade)

obj = Student("Sarthak", "25(2001", 76)
obj.calc_grade()
obj.display()
```

//Output:
Name: Sarthak
Reg No: 25(2002
Mark: 76
Grade: B

Q5: Program for Library book management

```
//program: class Library:
            def __init__(self):
                self.book = []
            def add_book(self, name, author, isbn, pages, price):
                self.books.append([name, author, isbn, pages,
                                   price])
            def remove_book(self, name):
                for b in self.books:
                    if b[0] == name:
                        self.books.remove(b)

            def display(self):
                for b in self.books:
                    print(b)

        obj = Library()
        obj.add_book("Python", "Guido", 1111, 300, 450)
        obj.add_book("Java", "James Gosling", 222, 500, 600)
        obj.remove_book("Java")
        obj.display()
```

//output:

```
['Python', 'Guido', 1111, 300, 450]
```