Programs:

1)

```
#include <iostream>
using namespace std;
class Fraction
{
    float num, den;
public:
    Fraction(){
        cout << "Default constructor" << endl;
        num = 30;
        den = 5;
    }
    Fraction(float n, float d){
        cout << "Parameterized constructor" << endl;
        num = n;
        den = d;
    }
    Fraction(Fraction &i){
        cout << "Copy constructor" << endl;
        num = i.num;
        den = i.den;
    }
    void eval(){
        float eval = num / den;
        cout << "Eval is " << eval << endl;
    }
    friend void display(Fraction &a);
};
void display(Fraction &a){
    cout << "Fraction is " << a.num << " / " << a.den << endl;
}
int main()
{
    Fraction A;
```

```
        display(A);
        A.eval();
        float num, den;
        cout << "Enter the value for Numerator and Denominator : ";
        cin >> num >> den;
        Fraction B(num, den);
        display(B);
        B.eval();
        Fraction C = B;
        display(C);
        C.eval();
        return 0;
    }
```

Output:

```
> ./a.out
Default constructor
Fraction is 30 / 5
Eval is 6
Enter the value for Numerator and Denominator : 40 5
Parameterized constructor
Fraction is 40 / 5
Eval is 8
Copy constructor
Fraction is 40 / 5
Eval is 8
```

2)

```
#include <iostream>
using namespace std;
class Bank
{
    float balance, rateOfInterest;
public:
    Bank(float bal, float rate){
        balance = bal;
        rateOfInterest = rate;
    }
    void deposit(float val){
        balance = balance + val;
        cout << "Balance is: " << balance << endl;
```

```
    }
    void withdraw(float val){
        balance = balance - val;
        cout << "Balance is: " << balance << endl;
    }
    void findInterest(float time){
        float interest = (balance * rateOfInterest * time) / 100;
        cout << "Interest is: " << interest << endl;
    }
    ~Bank(){
        cout << "object destroyed" << endl;
    }
};
int main(){
    float bal, rate, deposit, withdraw;
    cout << "Enter the value for Balance and Rate of Interest : ";
    cin >> bal >> rate;
    Bank A(bal, rate);
    float P, R, T;
    cout << "1: Deposit" << endl;
    cout << "2: Withdraw" << endl;
    cout << "3: Find Interest" << endl;
    while (1){
        int choice;
        cout << "Enter your choice" << endl;
        cin >> choice;
        switch (choice){
        case 1:
            cout << "Enter the amount to be deposited : ";
            cin >> deposit;
            A.deposit(deposit);
            break;
        case 2:
            cout << "Enter the amount to be withdrawn : ";
            cin >> withdraw;
            A.withdraw(withdraw);
```

```
            break;
        case 3:
            cout << "Calculate Interest" << endl;
            cout << "Enter the Time period in years: ";
            cin >> T;
            A.findInterest(T);
            break;
        default:
            cout << "Wrong Input" << endl;
            break;
        }
    }
    return 0;
}
int main()
{
    float bal, rate, deposit, withdraw;
    cout << "Enter the value for Balance and Rate of Interest : ";
    cin >> bal >> rate;
    Bank A(bal, rate);
    float P, R, T;
    cout << "1: Deposit" << endl;
    cout << "2: Withdraw" << endl;
    cout << "3: Find Interest" << endl;
    while (1)
    {
        int choice;
        cout << "Enter your choice" << endl;
        cin >> choice;
        switch (choice){
        case 1:
            cout << "Enter the amount to be deposited : ";
            cin >> deposit;
            A.deposit(deposit);
            break;
        case 2:
```

```
            cout << "Enter the amount to be withdrawn : ";
            cin >> withdraw;
            A.withdraw(withdraw);
            break;
        case 3:
            cout << "Calculate Interest" << endl;
            cout << "Enter the Time period in years: ";
            cin >> T;
            A.findInterest(T);
            break;
        default:
            cout << "Wrong Input" << endl;
            break;
        }
    }
    return 0;
}
```

Output:

```
> ./a.out
Enter the value for Balance and Rate of Interest : 20000 9
1: Deposit
2: Withdraw
3: Find Interest
Enter your choice
1
Enter the amount to be deposited : 2000
Balance is: 22000
Enter your choice
1
Enter the amount to be deposited : 1000
Balance is: 23000
Enter your choice
2
Enter the amount to be withdrawn : 3000
Balance is: 20000
Enter your choice
3
Calculate Interest
Enter the Time period in years: 4
Interest is: 7200
Enter your choice
```

3)

```
#include <iostream>
using namespace std;
class Box
{
   int l, b, h;
public:
   Box(){
      l = 100;
      b = 50;
      h = 20;
   }
   Box(int lenght, int bredth, int height){
      l = lenght;
      b = bredth;
      h = height;
   }
   void display(){
      cout << "length: " << l << endl;
      cout << "bredth: " << b << endl;
      cout << "height: " << h << endl;
   }
};
int main()
{
   float l, b, h;
   cout << "Default Constructor" << endl;
   Box A;
   A.display();
   cout << "Parameterized Constructor" << endl;
   cout << "Enter the Value for length, Bredth and height: ";
   cin >> l >> b >> h;
   Box B(l, b, h);
   B.display();
   return 0;
```

```
}
```

Output:

```
> ./a.out
Default Constructor
length: 100
bredth: 50
height: 20
Parameterized Constructor
Enter the Value for length, Bredth and height: 3 6 8
length: 3
bredth: 6
height: 8
```

4)

```
#include <iostream>
using namespace std;
class Addition
{
    int l, b, h;
public:
    Addition(float A, float B){
        cout << "Additon of Float: " << A + B << endl;
    }
    Addition(int A, int B){
        cout << "Additon of Integer: " << A + B << endl;
    }
    Addition(double A, double B, double C){
        cout << "Additon of Double: " << A + B + C << endl;
    }
};
int main()
{
    int int_A, int_B;
    float float_A, float_B;
    double double_A, double_B, double_C;
    cout << "Enter the Integer Values for A and B: ";
    cin >> int_A >> int_B;
    Addition A(int_A, int_B);
    cout << "Enter the Float Values for A and B: ";
```

```
    cin >> float_A >> float_B;
    Addition B(float_A, float_B);
    cout << "Enter the Double Values for A, B, C: ";
    cin >> double_A >> double_B >> double_C;
    Addition C(double_A, double_B, double_C);
    return 0;
}
```

Output:

```
> ./a.out
Enter the Integer Values for A and B: 4 7
Additon of Integer: 11
Enter the Float Values for A and B: 2.54
23.4
Additon of Float: 25.94
Enter the Double Values for A, B, C: 2.3545 5.454 100.234435
Additon of Double: 108.043
```

5)

```
#include <iostream>
#include <cstring>
using namespace std;
class Join
{
public:
    void
    join(char *A, char *B)
    {
        cout << strcat(A, B) << endl;
    }
};
int main()
{
    char *str1 = NULL;
    char *str2 = NULL;
    str1= new char[20];
    str2 = new char[20];
    cout << "Enter the Value for String 1: ";
    cin.getline(str1, 50);
```

```
    cout << "Enter the Value for String 2: ";
    cin.getline(str2, 50);
    Join A;
    A.join(str1, str2);
    return 0;
}
```

Output: