```
// 1. Write a functions to add 2 int value, 2 float value, 1 int and 1 float value and vice
// versa . similary write functions for all other arithmetic operations.
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <cstdio>
struct Calculate
{
   int add(int a, int b)
   {
      return a + b;
   }
   float add(int a, float b)
   {
      return a + b;
   }
   float add(float a, int b)
   {
      return a + b;
   }
   float add(float a, float b)
   {
      return a + b;
   }

   //Subtraction
   int sub(int a, int b)
   {
      return a - b;
   }
   float sub(int a, float b)
```

```
{
   return a - b;
}
float sub(float a, int b)
{
   return a - b;
}
float sub(float a, float b)
{
   return a - b;
}

//multiplication
int mul(int a, int b)
{
   return a * b;
}
float mul(int a, float b)
{
   return a * b;
}
float mul(float a, int b)
{
   return a * b;
}
float mul(float a, float b)
{
   return a * b;
}

//division
```

```
    int div(int a, int b)
    {
        return a / b;
    }
    float div(int a, float b)
    {
        return a / b;
    }
    float div(float a, int b)
    {
        return a / b;
    }
    float div(float a, float b)
    {
        return a / b;
    }
};
int main()
{
    Calculate c1;
    int a, b, ans, ch,op;
    float c, d, fans;
    printf("\nSelect Your Choice to Calculate");
    printf("\n1. int int\n2. int float\n3. float int\n4. float float\nchoice = ");
    scanf("%d", &ch);
    printf("\nSelect Your Operator");
    printf("\n1. +\n2. -\n3. *\n4. /\nchoice = ");
    scanf("%d", &op);
    if (ch == 1)
    {
        printf("\nEnter Values");
```

```
    printf("\nA = ");
    scanf("%d", &a);
    printf("\nB = ");
    scanf("%d", &b);
    (op==1)?ans = c1.add(a, b):(op==2)?ans = c1.sub(a, b):(op==3)?ans = c1.mul(a, b):(op==4)?ans = c1.div(a, b):printf("\nWrong Choice");
  }
  else if (ch == 2)
  {
    printf("\nEnter Values");
    printf("\nA = ");
    scanf("%d", &a);
    printf("\nB = ");
    scanf("%f", &c);
    fans = c1.add(a, c);
  }
  else if (ch == 3)
  {
    printf("\nEnter Values");
    printf("\nA = ");
    scanf("%f", &c);
    printf("\nB = ");
    scanf("%d", &b);
    fans = c1.add(c, b);
  }
  else if (ch == 4)
  {
    printf("\nEnter Values");
    printf("\nA = ");
    scanf("%f", &c);
    printf("\nB = ");
```

```
        scanf("%f", &d);
        fans = c1.add(c, d);
    }
    if (ch == 1)
    {
        printf("\n\nAns = %d", ans);
    }
    else
    {
        printf("\n\nAns = %.2f", fans);
    }
}
```

```
Select Your Choice to Calculate
1. int int
2. int float
3. float int
4. float float
choice = 2

Select Your Operator
1. +
2. -
3. *
4. /
choice = 3

Enter Values
A = 34

B = 45.7


Ans = 79.70
```

```
// 2. Write a function to calculate area of shape, for calculating area of triangle,
// rectangle, circle differently
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <cstdio>
#include<iostream>
#include <iomanip>


using namespace std;
struct Circle
{
   float r;
   // setter
   void setR(float r)
   {
      this->r = r;
   }
   // getter
   float getR()
   {
      return this->r;
   }
   // default
   Circle()
   {
      this->r = 0;
   }
   Circle(float r)
   {
```

```
        this->r = r;
    }
};
struct Rectangle
{
    float l, w;
    // setter
    void setL(float l)
    {
        this->l = l;
    }
    void setW(float w)
    {
        this->w = w;
    }
    // getter
    float getL()
    {
        return this->l;
    }
    float getW()
    {
        return this->w;
    }
    // default
    Rectangle()
    {
        this->l = 0;
        this->w = 0;
    }
    // para
```

```
    Rectangle(float l, float w)
    {
        this->l = l;
        this->w = w;
    }
};
struct Tringle
{
    /* data */
    float b, h;
    // setter
    void setB(float b)
    {
        this->b = b;
    }
    void setH(float h)
    {
        this->h = h;
    }
    // getter
    float getB()
    {
        return this->b;
    }
    float getH()
    {
        return this->h;
    }
    // default
    Tringle()
    {
```

```
        this->b = 0;
        this->h = 0;
    }
    // para
    Tringle(float b, float h)
    {
        this->b = b;
        this->h = h;
    }
};
struct Shape
{
    float areaC;

    float area(Circle c1)
    {
        areaC = 3.147 * c1.getR() * c1.getR();
        return areaC;
    }
    float area(Rectangle r1)
    {
        areaC = r1.getL() * r1.getW();
        return areaC;
    }
    float area(Tringle t1)
    {
        areaC = 0.5 * t1.getB() * t1.getH();
        return areaC;
    }
};
int main()
```

```
{
    Circle c1;
    Rectangle r1;
    Tringle t1;
    Shape s1;

    float r,l,w,b,h,areaC;

    cout<<"\nEnter Circle Value\nr = ";
    cin>>r;
    c1.setR(r);

    cout<<"\n\nEnter Rectangle Values\nL = ";
    cin>>l;
    cout<<"\nW = ";
    cin>>w;
    r1.setL(l);
    r1.setW(w);

    cout<<"\nEnter Tringle Values\nB = ";
    cin>>b;
    cout<<"\nH = ";
    cin>>h;
    t1.setB(b);
    t1.setH(h);

    areaC = s1.area( c1);
    cout<<"\nArea of Cirlce = "<<std::setprecision(4)<<areaC;

    areaC = s1.area( r1);
    cout<<"\nArea of Rectangle = "<<std::setprecision(4)<<areaC;
```

```
    areaC = s1.area( t1);
    cout<<"\nArea of Tringle = "<<std::setprecision(4)<<areaC;
}
```

```
Enter Circle Value
r = 12


Enter Rectangle Values
L = 5.6

W = 4.8

Enter Tringle Values
B = 55

H = 23.9

Area of Cirlce = 453.2
Area of Rectangle = 26.88
Area of Tringle = 657.2
```

```
//
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <cstdio>
#include<iostream>
#include <iomanip>

using namespace std;
struct Student
{
   float percent;
   void setPercent(float per)
   {
      this->percent=per;
   }
   float getPercent()
   {
      return this->percent;
   }
   Student()
   {
      this->percent=0;
   }
   Student(float per)
   {
      this->percent=per;
   }
};
struct Employee
{
```

```
    float salLPA;
    void setSal(float sal)
    {
        this->salLPA=sal;
    }
    float getSal()
    {
        return this->salLPA;
    }
    Employee()
    {
        this->salLPA=0;
    }
    Employee(float sal)
    {
        this->salLPA=sal;
    }
};
struct Loan
{
    int loanAmmount;

    void grantLoan(Student s1)
    {
        if(s1.getPercent()>=80)
        {
            printf("\nStudent is Eligible for Loan : 2,00,000/-");
            loanAmmount=200000;
        }
        else if(s1.getPercent()<80 && s1.getPercent()>=60)
        {
```

```
        printf("\nStudent is Eligible for Loan : 1,00,000/-");
        loanAmmount=100000;
    }
    else if(s1.getPercent()>=40 && s1.getPercent()<60)
    {
        printf("\nStudent is Eligible for Loan : 50,000/-");
        loanAmmount=50000;
    }
    else if (s1.getPercent()<40)
    {
        printf("\nSorry Student is not eligible for any Loan");
    }
}
void grantLoan(Employee e1)
{
    if(e1.getSal()>=1200000)
    {
        loanAmmount=700000;
    }
    else if(e1.getSal()<1200000 && e1.getSal()>=1000000)
    {
        loanAmmount=600000;
    }
    else if(e1.getSal()>=600000 && e1.getSal()<1000000)
    {
        loanAmmount=500000;
    }
    else if(e1.getSal()<600000 && e1.getSal()>=400000)
    {
        loanAmmount=400000;
    }
```

```
    else if(e1.getSal()<400000 && e1.getSal()>1)
    {
       cout<<"\nSorry !!! Employee is not eligible for any Loan";
    }
    else{
       cout<<"\nInvalid salary ammount entered by user...!!!";
    }
    if(e1.getSal()>400000)
    {
       cout<<"\nEmployee is eligible for loanAmmount = "<<loanAmmount;
    }
  }

};
int main()
{
  Student s1;
  Employee e1;
  Loan l1;
  float per,salaryInLPA;
  cout<<"\nEnter Percentage for Student = ";
  cin>>per;
  s1.setPercent(per);
  l1.grantLoan(s1);

  cout<<"\n\nEnter Employee Salary per Annum like '250000'\nsalary = ";
  cin>>salaryInLPA;
  e1.setSal(salaryInLPA);
  l1.grantLoan(e1);
```

```
}
```

```
PS D:\FirstBit Solutions\CPP Programming\Assignnments\CPPAssignment_2> g++ 3.cpp
PS D:\FirstBit Solutions\CPP Programming\Assignnments\CPPAssignment_2> ./a.exe

Enter Percentage for Student = 35

Sorry Student is not eligible for any Loan

Enter Employee Salary per Annum like '250000'
salary = 600000

Employee is eligible for loanAmmount = 500000
PS D:\FirstBit Solutions\CPP Programming\Assignnments\CPPAssignment_2>
```