## PRODUCT GST

```
#include <iostream>
#include <string>
using namespace std;

class GST;

class Product
{
  string product_name;
  float product_price;

public:
  void setProduct(string name, float price)
  {
    product_name = name;
    product_price = price;
  }

  friend float finalPrice(Product p, GST g);
};

class GST
{
  float gst_rate;

public:
  void setGST(float rate)
  {
    gst_rate = rate;
  }

  friend float finalPrice(Product p, GST g);
};

float finalPrice(Product p, GST g)
{
  float total_price = p.product_price + (p.product_price * g.gst_rate /
100);
  cout << "Product Name: " << p.product_name << endl;
  cout << "Total Price: " << total_price << endl;
  return total_price;
}

int main()
{
  string name;
```

```
  float price, rate;
  cout << "Enter Product Name: ";
  cin >> name;
  cout << "Enter Product Price: ";
  cin >> price;
  cout << "Enter GST Rate: ";
  cin >> rate;

  Product p;
  p.setProduct(name, price);
  GST g;
  g.setGST(rate);
  finalPrice(p, g);
  return 0;
}
```

## STUDENT

```
#include <iostream>
#include <string>
using namespace std;

class Student
{
  int roll;

public:
  void setRoll(int r)
  {
    roll = r;
  }

  void displayRoll()
  {
    cout << "Roll: " << roll << endl;
  }

  int getRoll()
  {
    return roll;
  }
};

class Test : virtual public Student
{
  int marks;

public:
```

```
  void setMarks(int m)
  {
    marks = m;
  }

  void displayMarks()
  {
    cout << "Marks: " << marks << endl;
  }

  int getMarks()
  {
    return marks;
  }
};

class Sports : virtual public Student
{
  int score;

public:
  void setScore(int s)
  {
    score = s;
  }

  void displayScore()
  {
    cout << "Score: " << score << endl;
  }

  int getScore()
  {
    return score;
  }
};

class Result : public Test, public Sports
{
  int total;
  public:
  void displayResult()
  {
    total = getRoll() + getMarks();
    displayRoll();
    displayMarks();
    displayScore();
    cout << "Total: " << total << endl;
```

```
  }
};

int main()
{
  int roll, marks, score;
  cout << "Enter Roll: ";
  cin >> roll;
  cout << "Enter Marks: ";
  cin >> marks;
  cout << "Enter Score: ";
  cin >> score;

  Result r;
  r.setRoll(roll);
  r.setMarks(marks);
  r.setScore(score);
  r.displayResult();
  return 0;
}
```

**SHAPE**

```
#include <iostream>
using namespace std;

class Shape
{
public:
  virtual void area() = 0;
  virtual void perimeter() = 0;
};

class Square : public Shape
{
  int side;

public:
  Square(int s)
  {
    side = s;
  }

  void area()
  {
    cout << "Area of Square: " << side * side << endl;
  }
```

```
  void perimeter()
  {
    cout << "Perimeter of Square: " << 4 * side << endl;
  }
};

class Rectangle : public Shape
{
  int length, breadth;

public:

  Rectangle(int l, int b)
  {
    length = l;
    breadth = b;
  }

  void area()
  {
    cout << "Area of Rectangle: " << length * breadth << endl;
  }

  void perimeter()
  {
    cout << "Perimeter of Rectangle: " << 2 * (length + breadth) << endl;
  }
};


int main()
{
  Shape *s;
  Square sq(5);
  Rectangle r(5, 10);

  s = &sq;
  s->area();
  s->perimeter();

  s = &r;
  s->area();
  s->perimeter();

  return 0;
}
```