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/*
  File: tris.cpp
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  Creation Date: 4/12/2019
  Synopsis: This program output the coordinate of lower left vertex,
dimension and Area or a righyt triangle.
*/

#include <iostream>
#include <cmath>

using namespace std;

class Triangle
{
private:
      double locx, locy;
      double length, height;

public:
      // member functions
      void setBottomLeftX(const double x);
      void setBottomLeftY(const double y);
      void setLength(const double inLength);
      void setHeight(const double inHeight);

      double getBottomLeftX() const;
      double getBottomLeftY() const;
      double getLength() const;
      double getHeight() const;

      double area() const;
      void display() const;
};

// FUNCTION PROTOTYPES GO HERE:
void read_triangle(Triangle & tri);

int main()
{
      // Define local variables
      Triangle tri;

      //Prompt the user for triangle information and fill Class Triangle
object, tri,
      //with this information
      read_triangle(tri);

      // Display triangle information
      tri.display();

      return 0;
}
```

```
// FUNCTION DEFINITIONS GO HERE:

// CLASS MEMBER FUNCTION DEFINITINOS GO HERE:

void Triangle::setBottomLeftX(const double x)
{
      locx = x;
}

void Triangle::setBottomLeftY(const double y)
{
      locy = y;
}

void Triangle::setLength(const double inLength)
{
      length = inLength;
}

void Triangle::setHeight(const double inHeight)
{
      height = inHeight;
}

double Triangle::getBottomLeftX() const
{
      return locx;
}

double Triangle::getBottomLeftY() const
{
      return locy;
}

double Triangle::getLength() const
{
      return length;
}

double Triangle::getHeight() const
{
      return height;
}

double Triangle::area() const
{

  double Area(0);

  Area = 0.5 * getLength() * getHeight();

  return Area;
}
```

```
void Triangle::display() const
{

  cout << "-----------------------------------------" << endl;
  cout << "Lower Left Vertex (" << getBottomLeftX() << ", " <<
getBottomLeftY() << ")" << endl;
  cout << "Dimension (" << getLength() << ", " << getHeight() << ")" <<
endl;
  cout << "Area = " << area() << endl;
  cout << "-----------------------------------------" << endl;
  cout << endl;
}

void read_triangle(Triangle & tri)
{
      double x, y;
      double leng, heih;


      cout << "Enter bottom left x coordinate: ";
      cin >> x;

      cout << "Enter bottom left y coordinate: ";
      cin >> y;

      cout << "Enter length: ";
      cin >> leng;

      cout << "Enter height: ";
      cin >> heih;

      cout << endl;

      tri.setBottomLeftX(x);
        tri.setBottomLeftY(y);
      tri.setLength(leng);
      tri.setHeight(heih);

}
```