Graphics Engine Project

Week4 Requirements:

1. Overload the print **cout** operator for Point, Line, Triangle and Rectangle classes;

Example (using a friend function): In

Point.h

```
friend ostream& operator<<(ostream& os, const Point& p);
```

In Point.cpp:

```
ostream& operator<<(ostream& os, const Point& p)
{     os << "The X coordinate of the point: " << p.coordinates[0] << endl;
os << "The Y coordinate of the point: " << p.coordinates[1] << endl;
return os;
}
```

Pay attention that a friend function of a class is not a member function of that class, so if you declare your operator as a friend function, do not define it as a member function. And also, do not forget that member finctions have access to the private members of the class they are friend with.

2. Add the virtual print() function in class Shape and implement it in each of the derived classes (Point, Line, Triangle, Rectangle);

    -   Use the << operator you've just overloaded for printing the class attributes

Example: In

Point.cpp:

```
void Point::print()
{
    cout << this;
}
```

In main:

```
Point  point(1,2);  cout
<< point;
```

Output:
```
The X coordinate of the point: 1
The Y coordinate of the point: 2
```

3. Draw a robot, by adding the class Robot which will contain lines, points, triangles and rectangle. It should show like this:
    -   For this class you will need just the default constructor.