Friend Class for Stream Insertion:

Scenario: You have a Point class with private members for x and y coordinates. You want to define a way to easily print Point objects to output streams like cout.

Create a Point class with private x and y members and a public constructor.

Design a friend class PointOutputStream that has an overloaded << operator to format and insert Point objects into output streams.

In main, demonstrate creating Point objects and printing them using cout.

Code:

#include <iostream>

class Point {

private:

int x;

int y;

friend class PointoStream;

public:

Point(int x = 0, int y = 0) : x(x), y(y) {}

};

class PointoStream {

public:

friend std::ostream& operator<<(std::ostream& os, const Point& point) {

ostream << "(" << point.x << ", " << point.y << ")";

return os;

}

};

int main() {

Point p1(1, 2);

Point p2(3, 4);

std::cout << "Point p1: " << p1 << std::endl;

std::cout << "Point p2: " << p2 << std::endl;

return 0;

}