Assignments

Write a programming language to read in odd numbers between 1 &1000

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

int main() {
	int num = 1; // Start with the first odd number after 20

	while (num <= 1000) {
		std::cout << num << ", ";
		num += 2; // Increment by 2 to get the next odd number
	}

	return 0;
}
```

Write a programming language if a point is below rectangle

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

struct Point {
	double x, y;
};

struct Rectangle {
	double left, right, top, bottom;
};

bool isPointBelowRectangle(const Point& point, const Rectangle& rectangle) {
	return point.y < rectangle.bottom;
}

int main() {
	Point point;
	Rectangle rectangle;

	// Input point coordinates
	std::cout << "Enter point coordinates (x y): ";
```

```
    std::cin >> point.x >> point.y;

    // Input rectangle coordinates
    std::cout << "Enter rectangle coordinates (left right top bottom): ";
    std::cin >> rectangle.left >> rectangle.right >> rectangle.top >> rectangle.bottom;

    // Check if the point is below the rectangle
    if (isPointBelowRectangle(point, rectangle)) {
        std::cout << "The point is below the rectangle.\n";
    } else {
        std::cout << "The point is not below the rectangle.\n";
    }

    return 0;
}
```

Write a programming language to determine your shoe size

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

int main() {
    int footLength;

    // Input the length of the foot in centimeters
    std::cout << "Enter the length of your foot in centimeters: ";
    std::cin >> footLength;

    // Determine shoe size based on a simple conversion (for illustration purposes)
    int shoeSize = footLength / 2 + 5;

    // Output the calculated shoe size
    std::cout << "Your estimated shoe size is: " << shoeSize << "\n";

    return 0;
}
```

Write a programming language to a triangle using 0 to 9

```
#include <iostream>
#include <string>
```

```
using namespace std;
int main() {
	int n = 9;    // Number of rows

	for (int i = 1; i <= n; ++i) {
		// Print spaces
		for (int j = 0; j < n - i; ++j) {
			std::cout << "    ";
		}

		// Print numbers in ascending order
		for (int k = 1; k <= i; ++k) {
			std::cout << k << " ";
		}

		// Print numbers in descending order (excluding 1 for avoiding duplication)
		for (int l = i - 1; l >= 1; --l) {
			std::cout << l << " ";
		}

		// Move to the next line
		std::cout << "\n";
	}

	return 0;
}
```

Write a programming language to write your experience of c++ class to your colleague in other higher institutions

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

int main() {
	std::cout << "Subject: Reflection on C++ Class Experience\n\n";
	std::cout << "Dear [olayinka],\n\n";
	std::cout << "I hope this message finds you well. I wanted to share my experience with the C++ class that I've been attending.\n\n";
	std::cout << "The C++ class has been an enlightening journey, covering topics ranging from the basics of syntax to more advanced concepts like object-oriented programming. The hands-on exercises and projects have provided valuable insights, enhancing my problem-solving skills and understanding of programming structures.\n\n";
```

```
    std::cout << "One highlight was [The programming language below rectangular]. The instructor's expertise and the collaborative nature of the class created a positive learning environment.\n\n";
    std::cout << "I believe the knowledge gained in this class will be beneficial for our future projects and studies. Looking forward to hearing about your academic experiences as well.\n\n";
    std::cout << "Best regards,\n";
    std::cout << "[shukurat]\n";

    return 0;
}
```

Write a programming language to calculate your CGPA for four semesters

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

int main() {
    const int numCourses = 4;

    char grades[numCourses];
    double creditHours[numCourses];

    // Input grades and credit hours for each course
    for (int i = 0; i < numCourses; ++i) {
        std::cout << "Enter grade for Course " << (i + 1) << ": ";
        std::cin >> grades[i];

        std::cout << "Enter credit hours for Course " << (i + 1) << ": ";
        std::cin >> creditHours[i];
    }

    // Calculate total grade points and total credit hours
    double totalGradePoints = 0.0;
    double totalCreditHours = 0.0;

    for (int i = 0; i < numCourses; ++i) {
        switch (grades[i]) {
            case 'A':
                totalGradePoints += 4.0 * creditHours[i];
                break;
            case 'B':
                totalGradePoints += 3.0 * creditHours[i];
```

```
                break;
            case 'C':
                totalGradePoints += 2.0 * creditHours[i];
                break;
            case 'D':
                totalGradePoints += 1.0 * creditHours[i];
                break;
            case 'F':
                // F grade contributes no grade points
                break;
            default:
                std::cout << "Invalid grade entered.\n";
                return 1; // Exit with an error code
        }

        totalCreditHours += creditHours[i];
    }

    // Calculate CGPA
    double cgpa = totalGradePoints / totalCreditHours;

    // Output CGPA
    std::cout << "Your CGPA is: " << cgpa << "\n";

    return 0;
}
```

Write a programming language to calculate area of a lecture room

```
#include <iostream>
#include <string>
using namespace std;
int main() {
    double length, width;

    // Input the length and width of the lecture room
    std::cout << "Enter the length of the lecture room (in meters): ";
    std::cin >> length;

    std::cout << "Enter the width of the lecture room (in meters): ";
    std::cin >> width;

    // Calculate the area of the lecture room
```

```
    double area = length * width;

    // Output the calculated area
    std::cout << "The area of the lecture room is: " << area << " square meters.\n";

    return 0;
}
```