VIT - Vellore

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BCSE102P_Structured and Object Oriented Programming Lab_VL2024250502365

VIT V_Structured and OOP_Lab 5_COD_Easy_Class Objects

Attempt : 1
Total Mark : 20
Marks Obtained : 20

Section 1 : Coding

1. Problem Statement

Bhuvi is studying geometry, and she wants to determine the type of a triangle based on its side lengths. She needs your help to write a program using a class Triangle that can classify triangles as equilateral, isosceles, or scalene.

Equilateral triangle - All sides are equal

Isosceles triangle - Any two sides are equal

Scalene triangle - All sides are different

Answer

#include<iostream>

```cpp
using namespace std;
class Triangle{
    private:
        int a, b, c;
    public:
        Triangle (int side1, int side2, int side3) {
            a = side1;
            b = side2;
            c = side3;
        }
        void classiftTriangle(){
            if(a==b && b==c){
                cout<<"Equilateral triangle"<<endl;
            }
            else if(a == b || b == c || a == c){
                cout<<"Isosceles triangle"<<endl;
            }
            else{
                cout<<"Scalene triangle"<<endl;
            }
        }
};
int main(){
    int a,b,c;
    cin>>a >> b>> c;

    Triangle t(a,b,c);

    t.classiftTriangle();

    return 0;
}
```

Status : Correct   *Marks : 10/10*

2. Problem Statement

Create a class A that takes an integer N as input and generates a sequence
of N numbers where each number alternates between 1 and 6. The
program should start with 1 and then repeatedly switch from 1 and 6 for N
iterations, displaying each number in the sequence separated by a space.

Use class and objects to solve the program.

Answer

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

int main(){
    class A{
        int N;
        public:
        A(int x){
            N = x;
        }
        void print_num(){
            int i = 1;
            while(N>0){
                cout<<i<<" ";
                if(i == 6){
                    i = 0;
                }
                N--;
                i++;
            }
        }
    };

int N;
cin>>N;
A nums(N);
nums.print_num();
return 0;
}
```

Status : Correct   *Marks : 10/10*