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Course : DSA

Section: SE 3-2

LAB # 06

Task # 02 :

Code :

```
    #include <iostream>

using namespace std;
class Line {
private:
    double a;
    double b;
public:
    Line(double slope, double intercept) {
        a = slope;
        b = intercept;
    }
    double intersect(Line otherLine) {
        if (a == otherLine.a) {
            cout << "The lines are parallel and do not intersect." << endl;
            return -1;
        }
        return (otherLine.b - b) / (a - otherLine.a);
```

```
    }
    void display() {
        cout << "y = " << a << "x + " << b << endl;
    }
};

int main() {
    Line line1(2.0, 3.0);
    Line line2(1.0, 5.0);

    cout << "Line 1: "; line1.display();
    cout << "Line 2: "; line2.display();

    double intersectionX = line1.intersect(line2);
    if (intersectionX != -1) {
        cout << "The lines intersect at x = " << intersectionX << endl;
    }
    return 0;
}
```

Output :

```
PS D:\Assignment 2> cd "d:\Assignment 2\" ; if ($?) { g++ task2.cpp -o task2 } ; if ($?) { .\task2 }
Line 1: y = 2x + 3
Line 2: y = 1x + 5
The lines intersect at x = 2
PS D:\Assignment 2>
```

Task # 4 :

Code :

```
#include<iostream>
#include<cmath>  // For sqrt function
using namespace std;
```

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```
class Progression {
    public:
        double a;
        Progression() : a(65536) {}
        Progression(double start) : a(start) {}

        double getValue() const {
            return a;
        }
        void setValue(double value) {
            a = value;
        }
};
class FinalProgression : public Progression {
    public:
        FinalProgression() : Progression() {}
        FinalProgression(double start) : Progression(start) {}
        void nextValue() {
            cout<<"Progressive sqrt series of "<< a <<" : "<<endl;
            cout <<  a<<", ";
         while(a>1.9 && a!=2) {
            a = sqrt(a);
            cout <<  a << ", ";
        }}
};

int main() {
    int c;
    FinalProgression p;
    cout << "Initial value: " << p.getValue() << endl;

    p.nextValue();
    cout <<"\nEnter the value of which you want to find the progression"<<
endl;
    cin>>c;
    p.setValue(c);
    cout << "\nProgression of : " << p.getValue() << endl;
    p.nextValue();
```

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```
    return 0;
}
```

Output :

```
PS D:\Assignment 2> cd "d:\Assignment 2\" ; if ($?) { g++ task4.cpp -o task4 } ; if ($?) { .\task4 }
Initial value: 65536
Progressive sqrt series of 65536 :
65536, 256, 16, 4, 2,
Enter the value of which you want to find the progression
16

Progression of : 16
Progressive sqrt series of 16 :
16, 4, 2,
PS D:\Assignment 2>
```

----------**END**----------