PROGRAMMING LAB

HOME TASK ASSIGNMENT-1

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- **FACTORIAL OF 6 :**

```
#include<iostream>
using namespace std;
int main(){
        int num=6;int fact=1;
        cout<<"factorial of num:"<<endl ;

        for(int i=1;i<=num;i++){
                fact=fact*i;
        }
        cout<<"Value of a factorial:"<<fact<<endl;
        return 0;
}
```

- **DISTANCE BETWEEN TWO POINTS:**

```
#include <iostream>
#include <cmath>

using namespace std;

int main() {
   int x1, y1, x2, y2;

   cout << "Enter the coordinates of the first point (x1 y1): ";
   cin >> x1 >> y1;

   cout << "Enter the coordinates of the second point (x2 y2): ";
   cin >> x2 >> y2;

   // Calculate the distance using the distance formula
   double distance=sqrt(pow(x2 - x1, 2) + pow(y2 - y1, 2));

   cout << "The distance between the two points is: " <<
distance << endl;

   return 0;
}
```

- **LENGTH IN CENTIMETERS:**

```
#include <iostream>

using namespace std;

int main() {
   float lengthInCentimeters;
```

```
    cout << "Enter the length in centimeters: ";
    cin >> lengthInCentimeters;

    // Convert centimeters to meters and kilometers
    float lengthInMeters = lengthInCentimeters / 100.0;
    float lengthInKilometers = lengthInCentimeters / 100000.0;

    cout << "Length in meters: " << lengthInMeters << " m" << endl;
    cout << "Length in kilometers: " << lengthInKilometers << " km" << endl;

    return 0;
}
```

- **DISPLAY IN POLYNOMIAL:**

```
#include <iostream>
using namespace std;
float a,b;
int main(){

    cout << "Enter the value of a: ";
    cin >> a;

    cout << "Enter the value of b: ";
    cin >> b;

    // Calculate the result of the polynomial
    double result = a * a + 2 * a * b + b * b;

    cout << "Result of the polynomial expression is: " << result << endl;

    return 0;
}
```