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Basics Of C++ :

```cpp
//***********************  This is basics of C++ Program  ***********************

#include<iostream>  // -->( Headerfile ) help input and output etc.

using namespace std;



int glo = 123;  // -->Global Variable



int main(){

    cout<<"Hey I'm here..!"<<endl;  //'<<' is called Insertion Operator.



    cout<<"Enter a number here :  ";

    int n, glo = 3;  // -->Local Variable

    cin>>n;  //'>>' is called Extraction Operator.



    cout<<"The global glo is "<<::glo;  //( :: ) Scope resolution operator.



    return 0;

}
```

Output :-

```
PS D:\9. Tutorial of C++> cd
Hey I'm here..!
Enter a number here :  12
The global glo is 123
PS D:\9. Tutorial of C++>
```

Operators :

```cpp
#include<iostream>

using namespace std;


int main(){


    // 1.Assignment Operators :-   --> Use to assign the values to variables

    cout<<"These are the example of Assignment Operators :-"<<endl;

    int m = 3, n = 9;

    char d = 'd';

    cout<<m<<endl;

    cout<<n<<endl;

    cout<<d<<endl<<endl;



    // 2.Arithmetic Operators :-

    cout<<"These are the example of Arithmetic Operators :-"<<endl;

    int a = 4, b = 5;

    cout<<"The value of a+b is = "<<a+b<<endl;

    cout<<"The value of a-b is = "<<a-b<<endl;

    cout<<"The value of a++ is = "<<a++<<endl;

    cout<<"The value of ++a is = "<<++a<<endl;

    cout<<"The value of a-- is = "<<a--<<endl;

    cout<<"The value of --a is = "<<--a<<endl<<endl;



    // 3.Comparison Operator :-

    cout<<"These are the example of Comparison Operators :-"<<endl;

    int x = 4, y = 5;

    cout<<"The value of x==y is = "<<(x==y)<<endl;

    cout<<"The value of x!=y is = "<<(x!=y)<<endl;

    cout<<"The value of x>=y is = "<<(x>=y)<<endl;

    cout<<"The value of x<=y is = "<<(x<=y)<<endl;

    cout<<"The value of x>y is = "<<(x>y)<<endl;

    cout<<"The value of x<y is = "<<(x<y)<<endl<<endl;
```

```cpp
    // 4.Logical Operators :-

    cout<<"These are the example of Logical Operators :-"<<endl;

    cout<<"The value of this Logical 'and' Operator ( (x==y) && (a<b) ) is = "<<((x==y) &&
(x<y))<<endl;

    cout<<"The value of this Logical 'or' Operator ( (x==y) || (a<b) ) is = "<<((x==y) ||
(x<y))<<endl;

    cout<<"The value of this Logical 'not' Operator ( ! (a==b) ) is = "<<(! (x==y))<<endl;


    return 0;

}
```

Output :-

```
PS D:\9. Tutorial of C++> cd "d:\9. Tutorial of C++\" ; if ($?) { g++
These are the example of Assignment Operators :-
The value of --a is = 4

These are the example of Comparison Operators :-
The value of x==y is = 0
The value of x!=y is = 1
The value of x>=y is = 0
The value of x<=y is = 1
The value of x>y is = 0
The value of x<y is = 1

These are the example of Logical Operators :-
The value of this Logical 'and' Operator ( (x==y) && (a<b) ) is = 0
The value of this Logical 'or' Operator ( (x==y) || (a<b) ) is = 1
The value of this Logical 'not' Operator ( ! (a==b) ) is = 1
PS D:\9. Tutorial of C++>
```

Reference Variable :

```cpp
#include<iostream>

#include<iomanip>

using namespace std;


int main(){

    // Reference Variable

    float x = 455;

    float &y = x;

    cout<<x<<endl;

    cout<<y<<endl;

    // Manipulator In C++

    // setw(4) gives 4 width space to make outcome right justified

    int a=3, b=78, c=1233;

    cout<<"The value of a is : "<<setw(4)<<a<<endl;

    cout<<"The value of b is : "<<setw(4)<<b<<endl;

    cout<<"The value of c is : "<<setw(4)<<c<<endl;

    return 0;

}
```

Output :-

```
PS D:\9. Tutorial of C++> cd
lator }
455
455
The value of a is :    3
The value of b is :   78
The value of c is : 1233
PS D:\9. Tutorial of C++>
```

Pointer :

```cpp
#include<iostream>

using namespace std;



// Pointer :- A data type which holds the address of other data type.



int main(){

    int a = 3 ;

    int *b = &a;

    int **c = &b;



    // & -->(Address of) operator

    cout<<"The address of a is "<<&a<<endl;

    cout<<"The address of a is "<<b<<endl;    // --> Also acceptable and either can be use

    cout<<"The address of b is "<<&b<<endl;

    cout<<"The address of b is "<<c<<endl;    // --> Also acceptable and either can be use

    cout<<"The address of a is "<<*c<<endl;



    // * -->(Value at) Dereference operator

    cout<<"The value at address b is "<<*b<<endl;

    cout<<"The value at address c is "<<**c<<endl;

    return 0;

}
```

Output :-

```
PS D:\9. Tutorial of C++> cd
The address of a is 0x61ff08
The address of a is 0x61ff08
The address of b is 0x61ff04
The address of b is 0x61ff04
The address of a is 0x61ff08
The value at address b is 3
The value at address c is 3
PS D:\9. Tutorial of C++>
```

Array :

```cpp
#include<iostream>

using namespace std;


// Array:- An Array is a collection of items of similar type stored in contiguous memory location.


int main(){

    int marks[5] = {90, 92, 89, 99, 95};

    cout<<"These are marks"<<endl;

    cout<<marks[0]<<endl;

    cout<<marks[1]<<endl;

    // You can change the value of an Array

    marks[2]=101;

    cout<<marks[2]<<endl;

    cout<<marks[3]<<endl;

    cout<<marks[4]<<endl;


    // Array Using Loop

    cout<<"These are marks"<<endl;

    for(int i=0; i<5; i++){

        cout<<"The value of marks "<<i<<" is = "<<marks[i]<<endl;

    }


    cout<<"We can also print the value by the use of for each loop :-"<<endl;

    for(int el : marks){

        cout<<el<<", ";

    }

    cout<<"\b\b"<<endl;


    return 0;

}
```

Output :-

```
PS D:\9. Tutorial of C++> cd "d:\9. Tutorial of C++\" ; if ($?) { g++
These are marks
90
92
101
99
95
These are marks
The value of marks 0 is = 90
The value of marks 1 is = 92
The value of marks 2 is = 101
The value of marks 3 is = 99
The value of marks 4 is = 95
We can also print the value by the use of for each loop :-
90, 92, 101, 99, 95,
PS D:\9. Tutorial of C++>
```

Pointer And Array :

```cpp
#include<iostream>

using namespace std;


int main(){

    int n;

    cout<<"How many terms do you want to enter in the array : ";

    cin>>n;

    int marks[n];

    cout<<"Enter the values in the array here :- "<<endl;

    for(int i=0; i<n; i++){

        cin>>marks[i];

    }

    cout<<"Value entered by the user is as follow : "<<endl;

    for(int i=0; i<n; i++){

        cout<<marks[i]<<"\t";

    }

    cout<<endl;

    int *p=marks;

    for(int i=0; i<n; i++){

        cout<<"The value at marks ["<<i<<"] is "<<*(p+i)<<endl;

    }
return 0;

}
```

Output :-