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# C++ Programming

## Basics

By @ curious\_programmer

#### Introduction:

C++ is an object oriented programming language. it is an extension of a programming language.

programming language. it can be used to develop operating system, browsers, games and so on.

C++ Supports different way of programming like precedural object-oriented, Functional and So on this makes C++ powerful as well as flexiable.

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	Basic syntax:
	# include xiostream>
	using namespace Std;
	11 main method. where the program exacution
	11 Stants.
	int main () {
	11 This is where you write your code
	returno;
	@curious_programmer
_	
	and pull its and
-	Output in C++:
	Cout << " Helloworld! ";
-	COOPER HETTOWORTA! ",
-	cout is used to point anyting which is
×2	written inside " " on the screen.
4.	1.6.20
7	fr.
	input in C+1:
٦	
	cin >> value;
	cin is used to take input and store
	it in variable.
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```
comments in C++:
Single line comment:
        11 this is single line comment
multi-line comment
      1* this is mutiline comment.
        Span multiple line.
      */
conditions and if Statement:
                       @ curious_programmer
       if (condition) s
       11 Block of Code
C++ if Statement tests the condition. it is
exevated if the condition is true:
example! int a = 20;
         if (a>15) {
           Cout << : a is greater than 15 ":
  python, c, Java, HTML Handwritten
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```

if (e> 4) ?

### if-else statement:

the C++ if-else statement also tests the condition. it exacuates if block if condition is true otherwise else block is execuated.

Cout << 5 is greatner than 7";

glesse {

cout << 7 is greatner than 5";

?

else-if statement:

the C++ if-else ladder statement exacuates one condition from mutiple statements.

if (577) {

Cout << = 5 is grather than 7";

g

else if (5==7) {

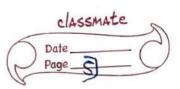
Cout << = 5 is equal to 7";

}

else {

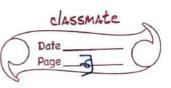
Cout << = 7 is greather than 5";

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	Switch Case Statement:
	A switch Statement allows you to test
(	an expression against a variety of cases.
	If the moten is found, the code within
_	begins to run. A case can be ended
1	switch (grade) f
1	
1	Case A: @ aurious. Poigrommer
_	cout << "expart";
1	break;
	case 8:
1	cout << "intermidiator";
	break;
	case c:
	Cout << Beginner";
1	Break;
-	default: Cout << "Invalid In";
-	
+	break;
+	j e e e e e e e e e e e e e e e e e e e
+	
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	Arryas:
	Arrays:
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	array in C++ is a group of similar types
	of elements that have contigous memory
	location
	In C++STD: Array is a container that
, : S	encapsulates fixed Size arrays. In C++,
	array index start from 0.
*	we can Store fixed set of element in
	C++ array.
	DATA - 1 2 3 4 5
	index -> 0 1 2 3 4
	do mid do amou
	example: program to print an array
	# include <iostram></iostram>
	using namespee std;
	int main (){
	String Str [3] = { "Apple", "Banana", "mango"};
	for (int i=0; i<4; i++)
	5
	COUT << STY [i] + " ";
	3
	returno:

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#### functions:

The functions in C++ language is also known as procedure or submoutine in other programming languages.

every function has a name that is used to refer to it when it is called. A function typically contains the following parts:

- · Return value
- · parameters
- · Declaration

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Example:

# include xiostream \$> using namespace std;

int sum (inta, intb) { -> Delaration

return a+b;

int main () {

int num1 = 10;

int num2 = 30;

sum (numi, num 2); -> calling a function

Go 3



### C++ BASIC PROGRAMS

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```
J
    Fibunacci series in C++
           #include < iostreom>
            Using namespace Std;
             int main ()
                int ni, nz. n3, i, number;
                n1 = 0;
                N2 = 1;
                cout < c: enter the number of elements: ";
                cin>>number;
                Cout << n < < " "; || printing of 1
                For (i=2; ix number; i++)
                  n3 = n+n2
                  Cout << n3 << " ";
                  n1 = n2;
                  12 = n3;
             return o; @curious-programmon
```

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```
output:
         enter the number of element: 10
          0112358
                             13 21 34
prime number program in C++.
     # include <iostream>
     using namespace std;
      int main ()
        int n, i, m=0, flag =0;
        cout << 'enter number to check prime:";
        an >>n;
        m= 112;
        for (i = 2; i <= m; i++)
                           @curious - prajoammer
             it ( U.i.i ==0)
                Cout << ' number is not prime ". «end);
                Flag = 1;
                break:
            4
         if (Flag=0) {
            cout << : number is prime. " << end1:
          returno;
```

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output: enter a number to check prime: 20 number is not prime enter a number to check prime: 17 number is prime palindrome number in C++ 3) the palindrome number is some after reverse. example: 121, 32123, 2372732 #include <iostream> Using namespace std: @curious .. pro rammer int main() int n. r, sum = 0, temp; Cout << . enter the number = "; cin >>n; temp = n; while (n70) 7 = n 1.10; Sum = (60m \* 10) + 8; n=n110

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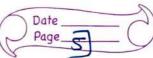


```
if (temp == sum)
       Cout << : number is paindrom. "):
        else
        cout << : number is not palindrom . ";
        seporal o:
 output:
        enter the number =
                                 12321
         number is polindrom
        enter the number = 120
         number is not palindrom
factorial pragram in C++
                            @ Curious_programmer
     # include <iostream>
      using namespace old;
      int main ()
          int i, fact, number;
          cout << "enter any number:";
          cinx number;
          for (1=1x=number; 1++);
              Fact = Fact * i;
         Cout KK: factorial of 'KKnumberKKis:"
                     KLEact KLENdi;
         return 0;
```

V ....

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```
OUtput:
          enter any number: 5
            factorial of 5 is: 120
    C++ Program to Swap two number without
5
    Using third variable:
    \rightarrow
         # include <iostroom>
         Using namespace std;
         int main u
            int a = 20, b = 50;
            cout << Before Gwap a ="<<a << " b = "<<b;
             a = a+b 11 a=10 (20+50)
           b=0-b11 b=20 (70-50)
             a = a-b / a=50 (70-20)
            Cont << , atter smob a = , << a << , p = , <<
                                   b;
             return o;
                           Quisious_programmer
     output :
           Befor swap a = 20, b=50
            after surap to =20, a=50
            after swap a=50, b=20
```

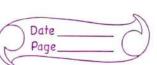
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3
    CH program to print half star parymid
    pattern:
    > # include < iostacam>
       using namespace Std:
      in+ main()
              in+ n, J, i;
             cout << : enter the number of rous: ";
             cin >>n;
             For Ci=1; i =n; i++)
                 tox (1=1, 1<=1 ,1++)
                   Cout << * ";
               Cout << "\";
                         @curious_programmer
          return o:
     output :
       enter number rows: 5
        * *
        * * *
        * * * *
        * * * * *
```

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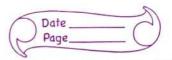
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```
C++ program for full * parymid
7
    > # include <iostrem>
         using namespace std;
         int main ()
            int raws, i, I, spaces;
            Cout << "enter number rows: ";
            cin >> rows:
            for(i=ii i<= rows ; i++)
                For (spaces = i ; spaces ( rows ;
                           Spaces++)
                  COUT << " ";
               Por (J=1) T <= 2 (2*1-1); J++)
                  Cout << "*";
               Cout << > \n";
                               @ curious. programmer
             return o;
```

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\$	output:					
	enter number of rows: 7					
¥	*					
	* *					
	A K X					
	* * * *					
	* * * * *					
e (p	X X X Y X X					
K .	* * * * * *					
i.						
8	sum of digit program C++;					
4.						
	→ # include <iostræm></iostræm>					
	using namespace std:					
	int main()					
	Ş					
	in+ n, sum = 0, m;					
	Cout<< enter a number : ";					
	cin>>n;					
	@curious_programmer					
	while (n>0)					
	4					
	W = U.10					
	Sum = Sum +m;					
	n = n110;					
	3					
	Cout << "sum is = " << sum << end1;					
	returno;					
	<sup>3</sup>					



OUTPUT :

enter a number = 55
Bum is 10

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