Q1. Explain Pointers in C++ Programming?

Ans: A Pointer is a variable that can hold address of another variable

We can use * to declare the pointer
We can use & to initialize a pointer variable
We can use * (Value at Operator / Dereference operator) to
get the value of pointing to the pointers

```
Syntax:
```

Data type vb;(Normal variable)
Data type vb1[5];(Array Declaration)

OR

How to Declare a Pointer Variable in C++

Data type *variableName;

OR

Data Type* VariableName;

Example:

int a; int b;

a=10;

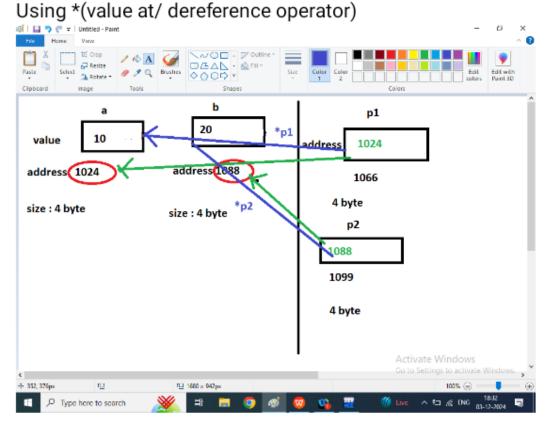
b=20;

How to initialize a pointer variable in C++: declaration of pointer is not enough it also initialize some address

```
int *p1,*p2;
p1=10;
P2=20;//Incorrect
```

```
p1=a;
p2=b;
Syntax:
pointerVariableName= &variableName;
p1=&a;
p2=&b;
```

How to get value of the pointer :



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

int *p1;
int *p2;//Declare a pointer variable
```

```
p1=&a;
p2 = &b;
cout<<"\n Address of a: "<<&a;
cout<<"\n Address of b : "<<&b;
cout<<"\n Address of p1: "<<p1;
cout<<"\n Address of p2: "<<p2;
cout<<"\n Address of &p1: "<<&p1;
cout<<"\n Address of &p2: "<<&p2;
cout<<"\n value of a using pointer: "<<*p1;
cout<<"\n value of b using pointer: "<<*p2;
*p1=11;
*p2=22;
cout<<"\n value of a : "<<a;
cout<<"\n value of b : "<<b;
cout<<"\n value of a using pointer: "<<*p1;
cout<<"\n value of b using pointer: "<<*p2;
return 0;
}
```

```
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File Edit Search View Project Execute Tools AStyle Window Help
(globals)
[*] p1/cpp
 1 //Pointer Example
 2 #include<iostream>
 3 using namespace std;
 4 pint main(){
 5
         int a,b;
 6
 7
         int *p1;
 8
         int *p2;//Declare a pointer variable
 9
         *p1=10;
10
         *p2=20;
11
         // cannot use uninitialized pointer
12
13
         cout<<"\n Value of p1 : "<<*p1;
14
         cout<<"\n Value of p2 : "<<*p2;
15
16
17
         return 0;
Line 12
                Lines: 18
                          Length: 287
                                        Done parsing in 0.015 seconds
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CNUsers\Admin\Documents\Newfolder\p1.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
p1.cpp
 1 //Pointer Example
 2 #include<iostream>
 3 using namespace std;
 4 pint main(){
 5
         int a,b;
 6
 7
         int *p1;
 8
         int *p2;//Declare a pointer variable
 9
         int x;
10
         int y;
11
         p1=&x;
12
         p2=&y;
13
         *p1=10;
14
         *p2=20;
15
         // cannot use uninitialized pointer
16
                                                      Activate Windows
         cout<<"\n Value of p1 : "<<*p1;
17
                                                      Go to Settings to activate Windows.
    Type here to search
                                                         ^ $□ 6€ ENG 18:39
```

Q1. Write a c++ Program to print Sum of two numbers using pointer?

```
int x=1;
  int y=2;
  1. Pointer Declare
  int *p1;
  int *p2;
  2. Pointer Initilization
  p1=&x;
  p2=&y;
  3. Access value using
  pointer
  int c=*p1+*p2;
  cout<<"Additon "<<c;
//Pointer Example
#include<iostream>
using namespace std;
int main(){
int a,b;
int *p1;
int *p2;//Declare a pointer variable
int x;
int y;
p1=&x;
p2=&y;
*p1=10;
*p2=20;
```

```
// cannot use uninitialized pointer
int c=*p1+*p2;
cout<<"\n Addition : "<<c;
return 0;
Q2. Write a C++ program to calculate area of Rectangle Using Pointer?
 int I=4;
 int b=5;
 step1: Declare Pointer Variable
 int *x;
 int *y;
 step2: Initialize a pointer variable
 x=&I;
 v=&b;
 step3: Get Value using Pointer
 int ar=*x * *y;
 cout<<"Area of Rectangle: "<< ar;
//Pointer Example
#include<iostream>
using namespace std;
int main(){
int a,b;
int *p1;
```

```
int *p2;//Declare a pointer variable
int x;
int y;
p1=&x;
p2=&y;
*p1=10;
*p2=20;
// cannot use uninitialized pointer
int c=*p1* *p2;
cout<<"\n Area of Rectangle : "<<c;
return 0;
}</pre>
```