Q1. Explain Call By Value?
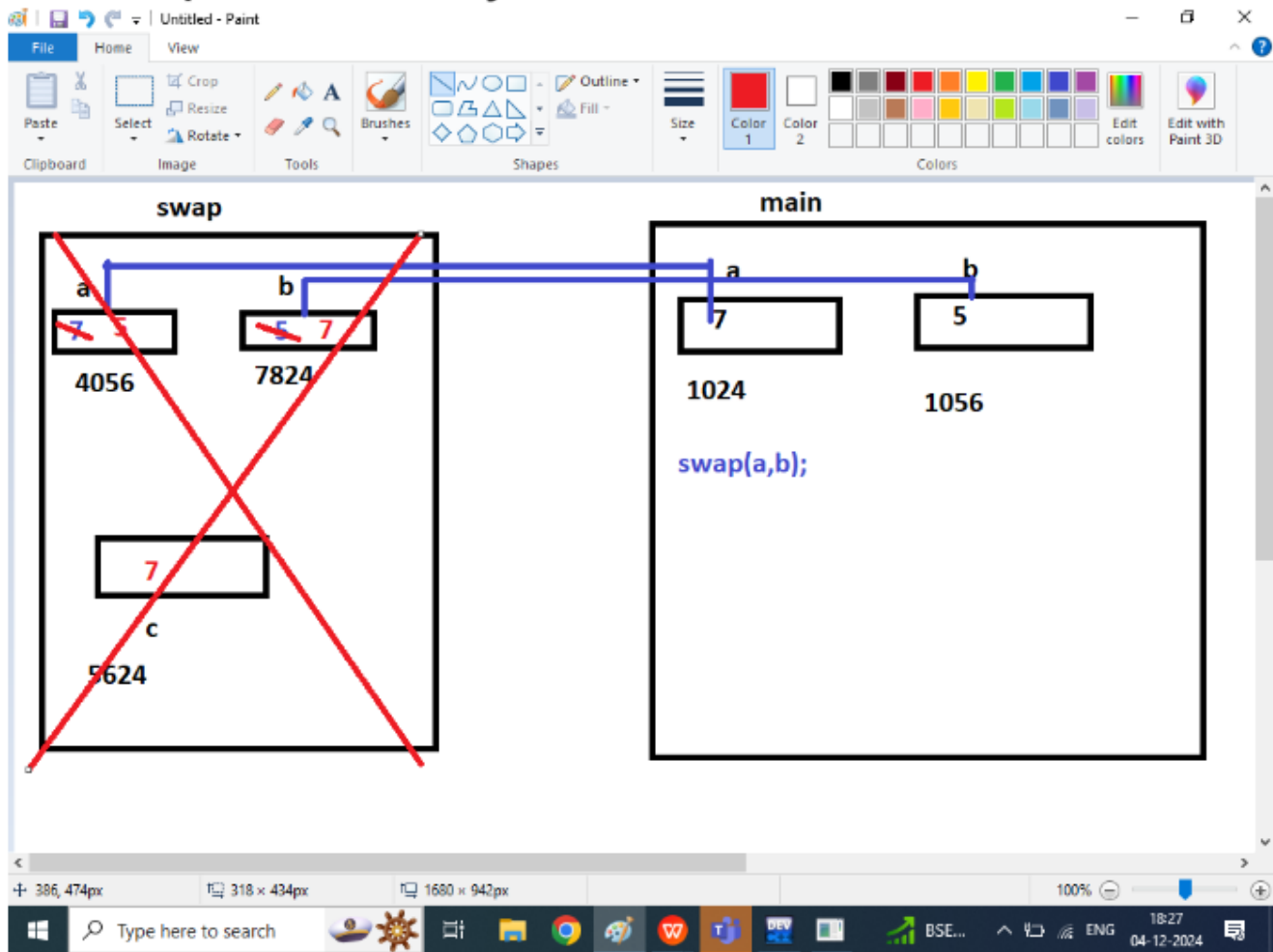


```
//call by value
#include<iostream>
using namespace std;

void swap(int,int);
void swap(int a,int b){
int c=a;
a=b;
b=c;
cout<<"\n swapping inside swap function : A= "<<a<<"  B= "<<b;
}

int main(){
int a,b;
a=7;
b=5;
```
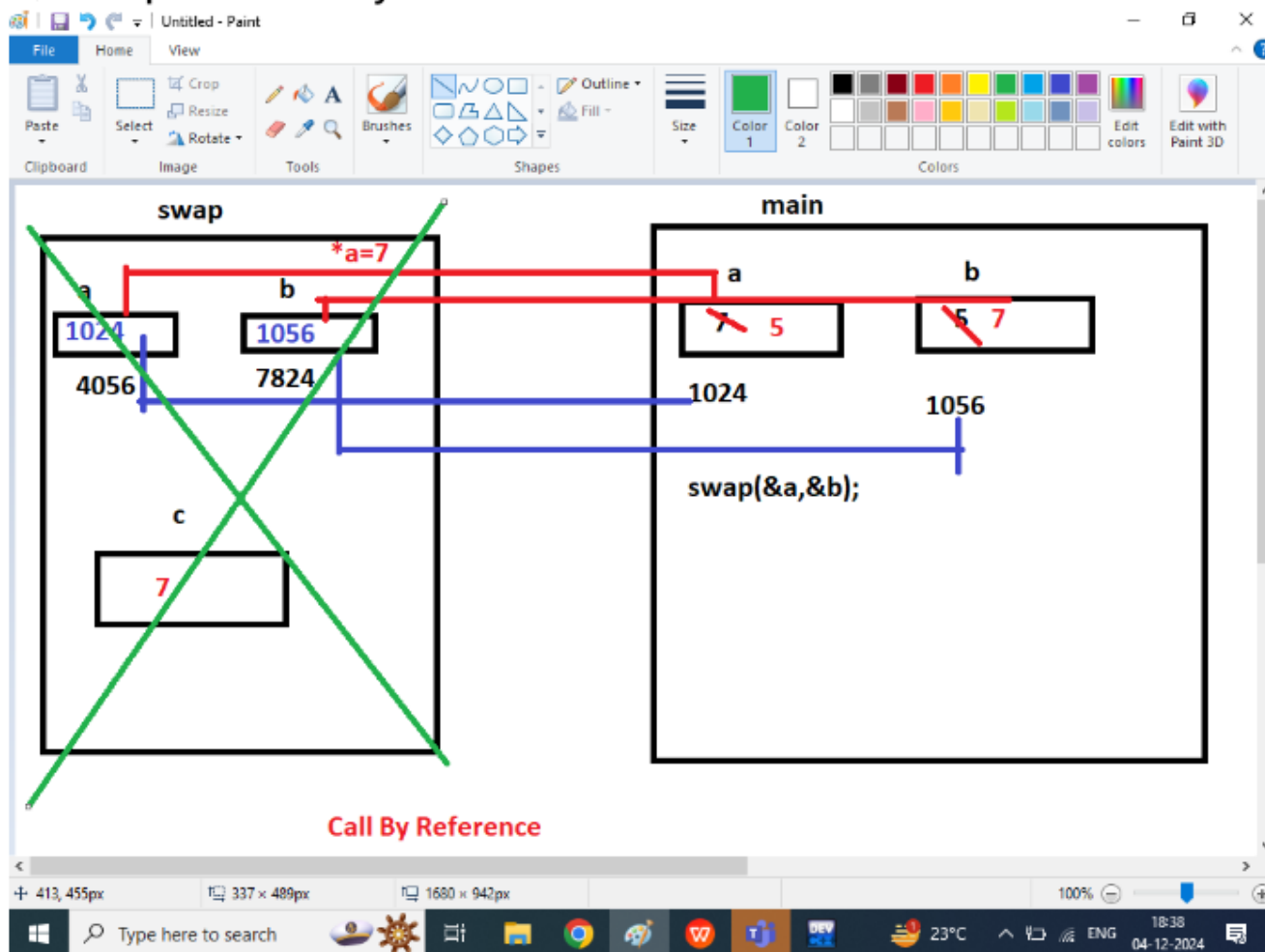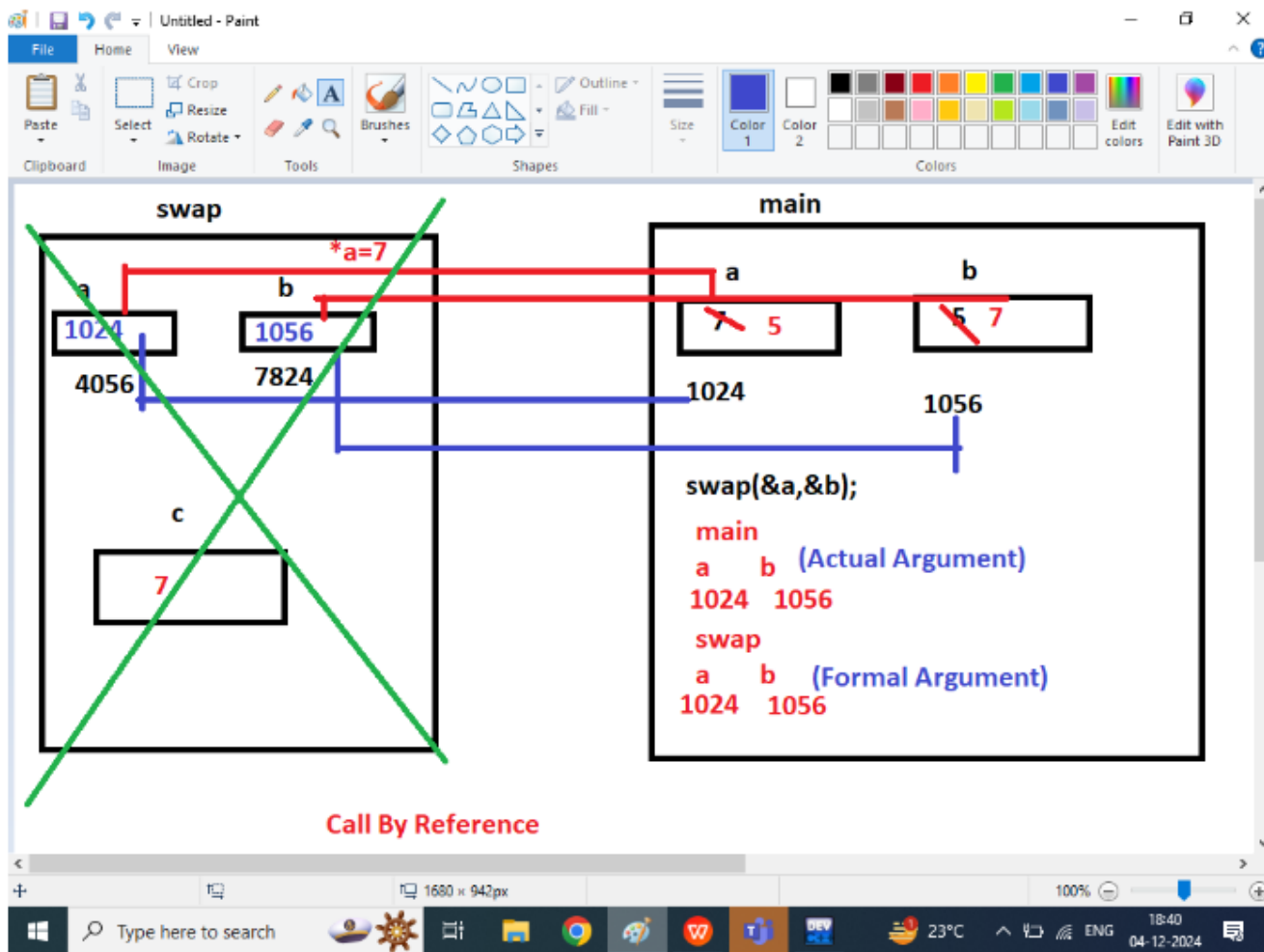
cout<<"\n swapping before inside main function : A= "<<a<<" B= "<<b;
swap(a,b);//call by value
cout<<"\n swapping after inside main function : A= "<<a<<" B= "<<b;

return 0;
}

Q2. Explain Call By Reference in C++?

Call By Reference

In Case of call by reference both actual and formal parameters pointing to the same memory address, Therefore any changes made by formal Parameter will get reflect to acutal parameters

```
//call by reference
#include<iostream>
using namespace std;

void swap(int *,int *);
void swap(int *a,int *b){
int c=*a;
*a=*b;
//*(1024)=*(1056)
```

```cpp
*b=c;
//*(1056)=7
cout<<"\n swapping inside swap function : A= "<<*a<<" B= "<<*b;
}

int main(){
int a,b;
a=7;
b=5;

cout<<"\n swapping before  inside main function : A= "<<a<<" B= "<<b;
swap(&a,&b);//call by value
cout<<"\n swapping after  inside main function : A= "<<a<<" B= "<<b;

return 0;
}


//call by reference
#include<iostream>
using namespace std;

void swap(int *,int *);
void swap(int *a,int *b){
int c=*a;
*a=*b;
//*(1024)=*(1056)
*b=c;
//*(1056)=7
```

```cpp
cout<<"\n swapping inside swap function : A= "<<*a<<" B= "<<*b;
}

int main(){
int a,b;
a=7;
b=5;

cout<<"\n swapping before  inside main function : A= "<<a<<" B= "<<b;
swap(&a,&b);//call by value
cout<<"\n swapping after  inside main function : A= "<<a<<" B= "<<b;

return 0;
}


//call by reference
#include<iostream>
using namespace std;

class Demo{
public:
int x;
int y;
int z;
void getData(int *a,int *b){
x=*a;
y=*b;
}
```

```cpp
int * sum(){
z=x+y;
return &z;
}
};
int main(){
int a,b;
a=7;
b=5;
Demo d;
d.getData(&a,&b);
cout<<"Addition : "<<*d.sum();
return 0;
}

//call by reference
#include<iostream>
using namespace std;

class Demo{
public:
int x;
int y;
int z;
void getData(int *a,int *b){
x=*a;
y=*b;
}

int sum(){
z=x+y;
```

```cpp
    return z;
    }
};
int main(){
int a,b;
a=7;
b=5;
Demo d;
Demo *d1=&d;
d1->getData(&a,&b);
int x=d1->sum();
cout<<"Addition : "<<x;
return 0;
}
```