Difference between Call by Value and Call Be Reference

Call by Value	Call Be Reference
While calling a function, we pass values of variables to it. Such functions are known as “Call By Values”.	While calling a function, instead of passing the values of variables, we pass address of variables (location of variables) to the function known as “Call By References.
In this method, the value of each variable in calling function is copied into corresponding dummy variables of the called function.	In this method, the address of actual variables in the calling function are copied into the dummy variables of the called function.
With this method, the changes made to the dummy variables in the called function have no effect on the values of actual variables in the calling function.	With this method, using addresses we would have an access to the actual variables and hence we would be able to manipulate them.

// C program to illustrate
// call by value
#include <stdio.h>
// Function Prototype
void swapx(int x, int y);
// Main function
int main()
{
int a = 10, b = 20;
 	
// Pass by Values
swapx(a, b);
 	
printf("a=%d b=%d\n", a, b);
 	
return 0;
}
	// C program to illustrate
	// Call by Reference
	#include <stdio.h>
	// Function Prototype
	void swapx(int*, int*);
	// Main function
	int main()
	{
	int a = 10, b = 20;
	// Pass reference
	swapx(&a, &b);
	
	printf("a=%d b=%d\n", a, b);
	
	return 0;
	}

// Swap functions that swaps
// two values
void swapx(int x, int y)
{
int t;
t = x;
x = y;
y = t;
printf("x=%d y=%d\n", x, y);
}
Output:
x=20 y=10
a=10 b=20
	// Function to swap two variables
	// by references
	void swapx(int* x, int* y)
	{
	int t;
	t = *x;
	*x = *y;
	*y = t;
	printf("x=%d y=%d\n", *x, *y);
	}
	Output:
	x=20 y=10
	a=20 b=10

Thus actual values of a and b remain unchanged even after exchanging the values of x and y.	Thus actual values of a and b get changed after exchanging values of x and y.
In call by values we cannot alter the values of actual variables through function calls.	In call by reference we can alter the values of variables through function calls.
Values of variables are passes by Simple technique.	Pointer variables are necessary to define to store the address values of variables.