**Program 1: Implementing a swap function to swap two values(using Pointers)**

#include <iostream>

void swap(int \*a, int \*b) {

int temp = \*a;

\*a = \*b;

\*b = temp;

}

int main() {

int num1 = 5, num2 = 10;

std::cout << "Before swapping: num1 = " << num1 << ", num2 = " << num2 << std::endl;

swap(&num1, &num2);

std::cout << "After swapping: num1 = " << num1 << ", num2 = " << num2 << std::endl;

return 0;

}

**Output Snip:**

**Program 2: Overloading the swap function for various types(int,double,char) using pointers**

#include <iostream>

void swap(int \*a, int \*b) {

int temp = \*a;

\*a = \*b;

\*b = temp;

}

void swap(double \*a, double \*b) {

double temp = \*a;

\*a = \*b;

\*b = temp;

}

void swap(char \*a, char \*b) {

char temp = \*a;

\*a = \*b;

\*b = temp;

}

int main() {

int num1 = 5, num2 = 10;

double dbl1 = 3.14, dbl2 = 2.71;

char char1 = ‘A’, char2 = ‘B’;

std::cout << "Before swapping: num1 = " << num1 << ", num2 = " << num2 << std::endl;

swap(&num1, &num2);

std::cout << "After swapping: num1 = " << num1 << ", num2 = " << num2 << std::endl;

std::cout << "Before swapping: dbl1 = " << dbl1 << ", dbl2 = " << dbl2 << std::endl;

swap(&dbl1, &dbl2);

std::cout << "After swapping: dbl1 = " << dbl1 << ", dbl2 = " << dbl2 << std::endl;

std::cout << "Before swapping: char1 = " << char1 << ", char2 = " << dbl2 << std::endl;

swap(&char1, &char2);

std::cout << "After swapping: char1 = " << dbl1 << ", char2 = " << dbl2 << std::endl;

return 0;

}

**Output Snip:**

**Program 3: Implementing a swap function using references:**

#include <iostream>

void swap(int &a, int &b) {

int temp = a;

a = b;

b = temp;

}

int main() {

int num1 = 5, num2 = 10;

std::cout << "Before swapping: num1 = " << num1 << ", num2 = " << num2 << std::endl;

swap(num1, num2);

std::cout << "After swapping: num1 = " << num1 << ", num2 = " << num2 << std::endl;

return 0;

}

**Output Snip:**