

swap.cpp

```

1  /**
2   * a program illustrating how to use reference parameters to swap
3   * @author Jon Beck
4   * @version 14 January 2021
5   */
6
7  #include <iostream>
8  using namespace std;
9
10 /**
11  * swap two values the modern C++ way
12  * @param x the first of the two values to swap
13  * @param y the second of the two values to swap
14  */
15 void swap(unsigned& x, unsigned& y);
16
17 /**
18  * swap two values the old-fashioned, deprecated, C way.
19  * Do not do this in C++
20  * @param x the first of the two values to swap
21  * @param y the second of the two values to swap
22  */
23 void swap_deprecated(unsigned* x, unsigned* y);
24
25 int main()
26 {
27     unsigned a = 10;
28     unsigned b = 20;
29
30     cout << "before: " << a << ' ' << b << endl;
31
32     swap(a, b);
33
34     cout << "after: " << a << ' ' << b << endl;
35
36     swap_deprecated(&a, &b);
37     cout << "after second swap: " << a << ' ' << b << endl;
38     return 0;
39 }
40
41 // this is the correct C++ way
42 void swap(unsigned& x, unsigned& y)
43 {
44     unsigned temp = x;
45     x = y;
46     y = temp;
47 }
48
49 // this is the old-fashioned C way -- don't do this in C++
50 void swap_deprecated(unsigned* x, unsigned* y)
51 {
52     unsigned temp = *x;
53     *x = *y;
54     *y = temp;
55 }

```