HOMEWORK – ADVANCED PROGRAMMING

Topic: Pointer (Part 1)

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Pratice 2.2

Given the following code

```
void swap1(int x, int y)
{
        int temp = x;
        x = y;
        temp = y;
}
```

```
void swap2(int &x, int &y)
{
        int temp = x;
        x = y;
        temp = y;
}
```

```
void swap1(int *x, int *y)
{
        int temp = *x;
        *x = *y;
        temp = *y;
}
```

Name of function	swap1	swap2	swap3
Type of pass	Pass by value	Pass by reference (C++ only)	Pass by value (Use a pointer)
Syntax calling	Two interger variable Ex: swap(a, b) With a and b are two interger variable	Two interger variable Ex: swap(a, b) With a and b are two interger variable	Use two interger address or two interger pointer Ex: swap(&a, &b) With a and b are two interger variable Ex: swap(pa, pb) With pa and pb are two pointer interger variables.
Languages	C/C++	Only C++	C/C++
Usage	Unchanged, this function creates copies of two parameters and change value of their copies.	Changed because this function passes the original parameters in main function so values of a and b will be changed after executed function.	Changed. The function creates two copies of two pointers and changes values of two pointers holding.

			Although the address of pointers remain unchanged, the values which they're holding changed.
Conclusion	This function makes me confused what did it do in the program while it does not do anything.	This function uses to swap the values of two interger variables. Notice that this syntax can only be used in C++.	Using a pointer is an only way to swap the value of two variables in C programming languages because C has 1 type of passing the argument to function is pass by value. This syntax can be used in C++ language.