Activity No. 4.2	
Assignment 4.3: Pointers	
Course Code: CPE007	**Program:** Computer Engineering
Course Title: Programming Logic and Design	**Date Performed: 9 – 21 – 25**
Section: CPE11S1	**Date Submitted: 9 – 23 – 25**
Name(s): Paula Esguerra	**Instructor: Engr. Jimlord Quejado**

6. Output

1. **What is a pointer in C++?**
   - Pointer stores memory address of a variable. It uses asterisk (*) and its variable name.

2. **How does a pointer differ from a regular variable?**
   - A regular variable directly use a variable and stores only the value, instead of the pointer differ holds the memory address, indirectly use asterisk (*), and access or manipulate other variables.

3. **What operator is used to get the address of a variable?**
   - It uses (&) symbol to find a variable's memory address.

4. **What operator is used to access the value stored at a pointer's address?**
   - The dereference operator (*) (indirection operator) used to access the value stores at the memory address.

5. **Why are pointers important in C++? Give two uses.**
   - It offers Dynamic Memory Allocation, where allowing programs to create arrays whose sized are not fixed, also implements Data Structures, here elements are dynamically linked together their memory addresses.

7. Supplementary Activity

Identify the Output
For each code snippet, predict the output without compiling:

1.

```
int x = 42;
int *ptr = &x;
cout << *ptr;
```

output: *42*

2.

```
int a = 5, b = 10;
int *p = &a;
p = &b;
cout << *p;
```

output: *10*

3.

```
int arr[3] = {10, 20, 30};
int *p = arr;
cout << *p;
```

output: *10*

4.

```
int arr[4] = {2, 4, 6, 8};
int *p = arr;
p++;
cout << *p;
```

output: *4*

5.

```
int arr[3] = {5, 15, 25};
int *p = arr;
cout << *(p + 2);
```

output: *25*

Error Spotting
Identify and fix the error(if any) in the codes below.

1.

```
int arr[3] = {1, 2, 3};
int *p = &arr;
```

output: *The error "&arr", these are the possible way to code it:*

```
int *p = arr;
int *p  = &arr[0];
int (*p)[3] = &arr;
```

it depends what I want to be the output is.

2.

```
int arr[5];
int *p;
```

p = arr[2];

output: *The error "arr[2]", the code needs &arr[2] to perform, to have its output to be address of the third element of p.*

3.

```
int arr[4] = {10, 20, 30, 40};
cout << *arr[2];
```

output: *The error is you have to remove "* " because it is an dereference operator, it is not need in this code.*

8. Conclusion

I assessed and learned how to see the error, though I won't say I didn't have any trouble with it, I did, because I still don't understand the whole concept, but I am learning, I still have my questions but because of the questions above, I understand a bit, it did helped a lot. I will continue to learn the basics and undoubtedly also how to spot the error without using any platforms.

9. Assessment Rubric