Activity No. 5.2	
Structures	
Course Code: CPE 007	**Program:** Computer Engineering
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6. Output

1.

The program creates a “Card” with the value of the card’s face and suit then prints out these values

- First it creates a structure called “Card” with two values/variables called “face” and “suit”. The main program creates a structure variable for “Card a” and a structure pointer which is “Card* aPtr” that can point to any card in the program, then makes the value for “Card a” which is “a.face = Ace” and “a.suit = Spades” making Card a present the Ace of Spades in a deck of cards. The last part of the code demonstrates how the program prints out the Ace of Spades in 3 different ways by using the dot operator, arrow operator, and dereference.

2.

This program shows how a structure can be used to store and organize related information about books. First it creates two book records “Book1” and “Book2” then prints out their details. It’s main function demonstrates how to use a structure to keep information and be easily accessed

- The main program starts off by creating a structure called “Book” and proceeds to create its details/variables which are strings “title”, “author", “subject”, and “int book_id”. Then it initializes two variables, “Book1” and “Book2”, each of these variables can store book information. The program proceeds to input the information or details of each book then prints them out

3.

This program is almost the same as No. 2, but the difference is it uses a function statement instead of printing out everything one by one using “cout” statements.

7. Supplementary Activity

1.

CODE:

```cpp
#include <iostream>
using namespace std;


struct Rectangle {
    double length;
    double width;
};


void computeRectangle(Rectangle r) {
    double area = r.length * r.width;
    double perimeter = 2 * (r.length + r.width);

    cout << "Length: " << r.length << endl;
    cout << "Width : " << r.width << endl;
    cout << "Area  : " << area << endl;
    cout << "Perimeter: " << perimeter << endl;
}

int main() {
    Rectangle rect;


    cout << "Enter the length of the rectangle: ";
    cin >> rect.length;
    cout << "Enter the width of the rectangle: ";
    cin >> rect.width;


    computeRectangle(rect);

    return 0;
}
```

OUTPUT:

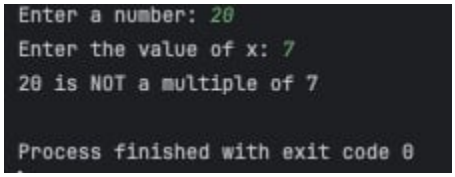
```
Enter the length of the rectangle: 20
Enter the width of the rectangle: 12
Length: 20
Width : 12
Area  : 240
Perimeter: 64

Process finished with exit code 0
```

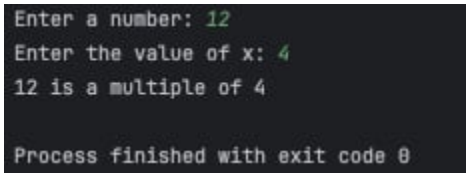
- First I made a structure called “Rectangle” and stored its values which are “lenght” and “width”.
Line 11-18 is for the computation of the area and parameter of the rectangle using the formula then prints it out.
Line 25-31 Creates a rectangle variable and asks the user to input a number for the length and width of the rectangle.
“computeRectangle(rect)” is the function which prints out the results.

2.
CODE:

```cpp
#include <iostream>
using namespace std;


bool multiple(int num, int x) {
    if (num % x == 0) {
        return true;
    } else {
        return false;
    }
}

int main() {
    int num, x;


    cout << "Enter a number: ";
    cin >> num;
    cout << "Enter the value of x: ";
    cin >> x;

    if (multiple(num, x)) {
        cout << num << " is a multiple of " << x << endl;
    } else {
        cout << num << " is NOT a multiple of " << x << endl;
    }

    return 0;
}
```

OUTPUT:





On line 5-11 I created a bool statement to check if the inputted number is a multiple of x.
Line 13-20 Is where the main function starts, it asks the user to input a number and the value of x.
Line 22-26 are IF…ELSE statements used to check if the inputted number matches the inputted value of x. If it does it prints out " Is a multiple of x", if not then it prints out " is NOT a multiple of x".

8. Conclusion

In this activity I learned how to use functions to compute values like area and perimeter, and also how to check if a number or integer is a multiple of a certain value/integer. For the first program I used a structure to compute a rectangle's area and parameter, for the second one, I used a function to find out if a certain value is a multiple of another value. Both procedures taught me how to combine user input and functions. This helped me practice in a way on how to make use of functions and structures for these kinds of situations. After doing this activity, I think I got better in understanding how each program works and how to use certain functions. I just need more practice on doing these kinds of programs faster and with less errors.