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Dr. Wang

COSC 120-751

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Lab 2.1

Source Code:

```cpp
#include <iostream>

using namespace std;

int main()
{
    string firstname;
    string lastname;
    string streetnumber;
    string streetname;
    string streettype;
    string city;
    string state;
    string zipcode;
    string phonenumber;

        cout << "Enter your first and last names: " << endl;
        cin >> firstname >> lastname;

        cout << "Enter your street address: " << endl;
        cin >> streetnumber >> streetname >> streettype;
```

```cpp
    cout << "Enter your city, state and zip code: " << endl;

  cin >> city >> state >> zipcode;


        cout << "Enter your telephone number: " << endl;

        cin >> phonenumber;


        cout << "Programmer: " << firstname << " " << lastname << endl;

        cout << "          " << streetnumber << " " << streetname << " " << streettype << endl;

        cout << "          " << city << " " << state << " " << zipcode << endl << endl << endl;

        cout << "Telephone:  " << phonenumber << endl;

        return 0;
}
```

Output:

Programmer: Nick Krisulevicz

    6136 Westbury Drive

    Salisbury MD 21801

Telephone: 443-880-3062

Question Answer:

This program used the fundamental operation cin and cout to prompt the user to input name, address, city, state, zip and phone number. The program then assigned user input values to variables. Program then used cout to output variables and string literal to display final output.

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Lab 2.2

Source Code:

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

const double PI = 3.14;
const double RADIUS = 5.4;

int main()
{
        double area;
        double circumference;
        circumference = 2 * PI * RADIUS;
        area = PI * RADIUS * RADIUS;


   circumference = 2 * PI * RADIUS;
   cout << "Circumference is: " << circumference << endl;


        area = PI * RADIUS * RADIUS;
        cout << "Area is: " << area;


        return 0;
}
```

Output:

Circumference is: 33.912

Area is: 91.5624

Question Answer:

The constants remain the same and are assigned value one time. The data type for them is double. The data type for the variable circumference and area are also double. When the data type for circumference was changed to int, the output in the console was only an integer for circumference.

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Lab 2.3

Source Code:

```
#include <iostream>

using namespace std;


const double HEIGHT = 8;

const double WIDTH = 3;


int main()
{
    double area = HEIGHT * WIDTH;

    double perimeter = (2 * HEIGHT) + (2 * WIDTH);


    cout << "Area is: " << area << endl;

    cout << "Perimeter is: " << perimeter << endl;
}
```

Output:

Area is: 24

Perimeter is: 22

Question Answer:

Using the same operation initializing constants height and width of a rectangle, the program used these constants to calculate values that were assigned in two variables, area and perimeter. The operation cout was then used to display the output.

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Lab 2.4

Source Code:

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


const string FAVORITESODA = "Dr. Dolittle";
const char BESTRATING = 'A';


int main()
{
        char rating;
        string favoriteSnack;
        int numberOfPeople;
        int topChoiceTotal;

   favoriteSnack = "crackers";
   rating = 'B';
   numberOfPeople = 250;
   topChoiceTotal = 148;

        cout << "The preferred soda is " << FAVORITESODA<< endl;
        cout << "The preferred snack is " << favoriteSnack << endl;
        cout << "Out of " << numberOfPeople << " people "
                << topChoiceTotal << " chose these items!" << endl;
        cout << "Each of these products were given a rating of " << BESTRATING ;
```

```
        cout << " from our expert tasters" << endl;

        cout << "The other products were rated no higher than a " << rating

                << endl;


        return 0;

}
```

Output:

The preferred soda is Dr. Dolittle

The preferred snack is crackers

Out of 250 people 148 chose these items!

Each of these products were given a rating of A from our expert tasters

The other products were rated no higher than a B

Question Answer:

It is not possible to change the value stored in FAVORITESODA during execution in the main function of the program. We can change what is output by initializing a new variable with the name of a different soda though. We can change the value in favoriteSnack because it is a variable and its value can be changed with an assignment operation that stores a string with the name of another snack in it during execution.