COSC 120 Lab 2 Report
Charles Reigle

Lab 2.1

Source Code

Exercise 1:

```cpp
// This program will write the name, address and telephone
// number of the programmer.

// Charles Reigle

#include <iostream>
using namespace std;

int main()
{
    cout << "Charles Reigle" << endl;
    cout << "541 Center Street" << endl;
    cout << "Pasadena, MD. 21122" << endl;
    cout << "443-904-2272" << endl;

    return 0;
}
```

Exercise 2:

```cpp
// This program will write the name, address and telephone
// number of the programmer.

// Charles Reigle

#include <iostream>
using namespace std;

int main()
{
    cout << "Charles Reigle" << endl;
    cout << "541 Center Street" << endl;
    cout << "Pasadena, MD. 21122";
    cout << "\n \n \n" << endl;
    cout << "443-904-2272" << endl;

    return 0;
}
```

Exercise 3:

```cpp
// This program will write the name, address and telephone
// number of the programmer.

// Charles Reigle

#include <iostream>

using namespace std;

int main()
{
    cout << "*************" << endl;
    cout << "   Programmer: Charles Reigle" << endl;
    cout << "               541 Center Street" << endl;
    cout << "               Pasadena, MD. 21122" << endl;
    cout << "\n" << endl;
    cout << "    Telephone: 443-904-2272" << endl;
    cout << "*************" << endl;


    return 0;
}
```

Output

Exercise 1:

```
Charles Reigle
541 Center Street
Pasadena, MD. 21122
443-904-2272
```

Exercise 2:

```
Charles Reigle
541 Center Street
Pasadena, MD. 21122



443-904-2272
```

Exercise 3:

```
************
   Programmer: Charles Reigle
               541 Center Street
               Pasadena, MD. 21122


    Telephone: 443-904-2272
************
```

Lab 2.2

Source Code

Exercise 2:

```cpp
// This program will output the circumference and area
// of the circle with a given radius.

// Charles Reigle

#include <iostream>
using namespace std;

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

int main()
{
    float area;                          // definition of area of circle
    float circumference;                 // definition of circumference
    circumference = 2 * PI * RADIUS;     // computes circumference
    area = PI * (RADIUS * RADIUS);                          // computes area

    cout << "The circumference of the circle is " << circumference << endl;
    cout << "The area of the circle is " << area << endl;

    return 0;
}
```

Output

Exercise 2:

```
The circumference of the circle is 33.912
The area of the circle is 91.5624
```

Answers:

When changing the datatype of circumference from a float to an int, it prints out only the whole number of the circumference (being 33), and doesn't store any data for the decimal values.

Lab 2.3

Source Code

```
1  // A program that determines the area and perimeter of a rectangle with a given width and length
2
3  // Charles Reigle
4
5  #include <iostream>
6
7  using namespace std;
8
9  const int LENGTH = 8;
10 const int WIDTH = 3;
11
12 int main()
13 {
14     int area = 0;
15     int perim = 0;
16     area = LENGTH * WIDTH;
17     perim = (2*LENGTH) + (2*WIDTH);
18
19     cout << "The area of the rectangle is " << area << endl;
20     cout << "The perimeter of the rectangle is " << perim << endl;
21     return 0;
22 }
23
```

Output

```
The area of the rectangle is 24
The perimeter of the rectangle is 22
```

Lab 2.4

Source Code

Exercise 2:

```cpp
// This program demonstrates the use of characters and strings

// Charles Reigle

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

// Definition of constants
const string FAVORITESODA = "Dr. Dolittle"; // use double quotes for strings
const char BESTRATING = 'A';                // use single quotes for characters

int main()
{
    char rating;            // 2nd highest product rating
    string favoriteSnack;   // most preferred snack
    int numberOfPeople;     // the number of people in the survey
    int topChoiceTotal;     // the number of people who prefer the top choice

    // Fill in the code to do the following:
    favoriteSnack = "crackers";
    rating = 'B';
    numberOfPeople = 250;
    topChoiceTotal = 148;

    // Fill in the blanks of the following:
    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

Exercise 2:

```
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
```

Answers

Exercise 3:

It is not possible to change the choice of FAVORITESODA with code inside the main module because the value is a constant, meaning it can't be modified

Exercise 4:

It is possible to change the choice of favoriteSnack with code inside the main module because it is not assigned as a constant.