Estructuras Secuenciales (Contestaciones)

1.
```cpp
#include <iostream>
using namespace std;
int main(){
    double grade1, grade2, grade3, grade4, allGrades, finalGrade;
    cout << "Enter the first grade. ";
    cin >> grade1;
    cout << "Enter the second grade. ";
    cin >> grade2;
    cout << "Enter the third grade. ";
    cin >> grade3;
    cout << "Enter the fourth grade. ";
    cin >> grade4;
    allGrades = grade1 + grade2 + grade3 + grade4;
    finalGrade = allGrades/4;
    cout << "The current average grade is " << finalGrade;
    return 0;
}
```

```
PS C:\Users\user> cd 'c:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output'
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output> & .\'finalGrade.exe'
Enter the first grade. 84
Enter the second grade. 90
Enter the third grade. 78
Enter the fourth grade. 92
The current average grade is 86
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output>
```

2.

```cpp
#include <iostream>
using namespace std;
int main(){
    double speed, hours, distance;
    cout << "Enter the average speed of travel (in km/h). ";
    cin >> speed;
    cout << "How much did the trip take? (In hours) ";
    cin >> hours;
    distance = speed * hours;
    cout << "Given the speed of " << speed << "km/h for " << hours << " hours, you have traveled " << distance << " kilometers.";
    return 0;
}
```

```
PS C:\Users\user> cd 'c:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output'
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output> & .\'travel.exe'
Enter the average speed of travel (in km/h). 74
How much did the trip take? (In hours) 3
Given the speed of 74km/h for 3 hours, you have traveled 222 kilometers.
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output>
```

3.

```cpp
#include <iostream>
using namespace std;
int main(){
    int birthYear, age;
    const int currentYear = 2024;
    cout << "Enter the year of birth. ";
    cin >> birthYear;
    age = currentYear - birthYear;
    // This is an IF/ELSE failsafe. Nothing to see here.
    if(age < 0){
        cout << "ERROR: Invalid result! (Negative age is impossible.)";
    }
    else{
        cout << "Your current (approximate) age is " << age;
    }
    return 0;
}
```

```
PS C:\Users\user> cd 'c:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output'
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output> & .\'whatIsYourAge.exe'
Enter the year of birth. 2042
ERROR: Invalid result! (Negative age is impossible.)
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output> & .\'whatIsYourAge.exe'
Enter the year of birth. 2005
Your current (approximate) age is 19
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output>
```

4.

```cpp
#include <iostream>
#include <cmath>
using namespace std;
int main(){
    int side;
    double area;
    cout << "Enter the length of one side of the square. ";
    cin >> side;
    area = pow(side,2); //Same as "area = side * side;"
    cout << "The area of a square with a side length of " << side << " is " << area;
    return 0;
}
```

```
PS C:\Users\user> cd 'c:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output'
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output> & .\'squareArea.exe'
Enter the length of one side of the square. 6
The area of a square with a side length of 6 is 36
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output>
```

5.

```cpp
#include <iostream>
using namespace std;
int main(){
    int base, height, area;
    cout << "Enter the rectangle's base lenght. ";
    cin >> base;
    cout << "Enter the rectangle's height. ";
    cin >> height;
    area = base * height;
    cout << "The total area of this rectangle is " << area;
    return 0;
}
```

```
PS C:\Users\user> cd 'c:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output'
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output> & .\'rectangleArea.exe'
Enter the rectangle's base lenght. 7
Enter the rectangle's height. 3
The total area of this rectangle is 21
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output>
```

6.

```cpp
#include <iostream>
using namespace std;
// Just testing something...
// Operation Block 1
int op1(int base, int height){
    double perimeter;
    perimeter = (2 * base) + (2 * height);
    return (perimeter);
}
// Operation Block 2
int op2(int base, int height){
    double area;
    area = base * height;
    return (area);
}
int main(){
    int base, height;
    double perimeter, area;
    cout << "Enter the rectangle's base length. ";
    cin >> base;
    cout << "Enter the rectangle's height. ";
    cin >> height;
    perimeter = op1(base, height);
    area = op2(base, height);
    cout << "This rectangle has a perimeter of " << perimeter << " and an area of " << area;
    return 0;
}
```

```
PS C:\Users\user> cd 'c:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output'
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output> & .\'rectangleDimensions.exe'
Enter the rectangle's base length. 7
Enter the rectangle's height. 5
This rectangle has a perimeter of 24 and an area of 35
PS C:\Users\user\Documents\COMP2315-LM\LabsC++\sequenceStructures1\output>
```