C++ Time Travel with the Doctor

Time required: 60 minutes

Please read the directions carefully before beginning the assignment.

- Comment your code as shown in the tutorials and other code examples.
- Follow all directions carefully and accurately.
- Think of the directions as minimum requirements.

Pseudocode

1. Write pseudocode or TOGO for the exercise

Here's What I Want You to Do

Create a C++ console program that takes user input and launches the TARDIS onto a time travel adventure.

Here's Why I Want You to Do It

Demonstrate understanding of:

Decisions, Calculations, Variables, Constants, Input from user

C++ and Random Numbers

This example shows how to generate random integers in C++.

```
/*
 * Name: random_number.cpp
 * Written by:
 * Written on:
 * Purpose: Generate a series of random numbers
 */
// time function
#include <ctime>
// rand srand functions
#include <cstdlib>

int main()
{
    // the rand() function generates the same sequence
    // each time the program runs
    // srand() initializes the random number generator with different values
    // time(0) is the time since January 1st, 1970 at 00:00:00 AM
    srand(time(0));
    int random_number;

    for (int count = 1; count <= 10; ++count)
    {
        // Generate a random number between 1 and 10 inclusive
        // rand() % 10 generates a random number between 0 and 9
        // + 1 brings it to 1 through 10 inclusive
        random_number = (rand() % 10) + 1;

        std::cout << random_nNumber << std::endl;
    }
    return 0;
}
```

Minimum Requirements

The Doctor is on the move again with his TARDIS (Time and Relative Dimension in Space). He has taken you on as his new companion.

The user is prompted to enter a year to time travel to. The program then checks if the target year is before, after, or the same as the current year (2023). Based on the comparison, it displays a corresponding message indicating the time travel direction.

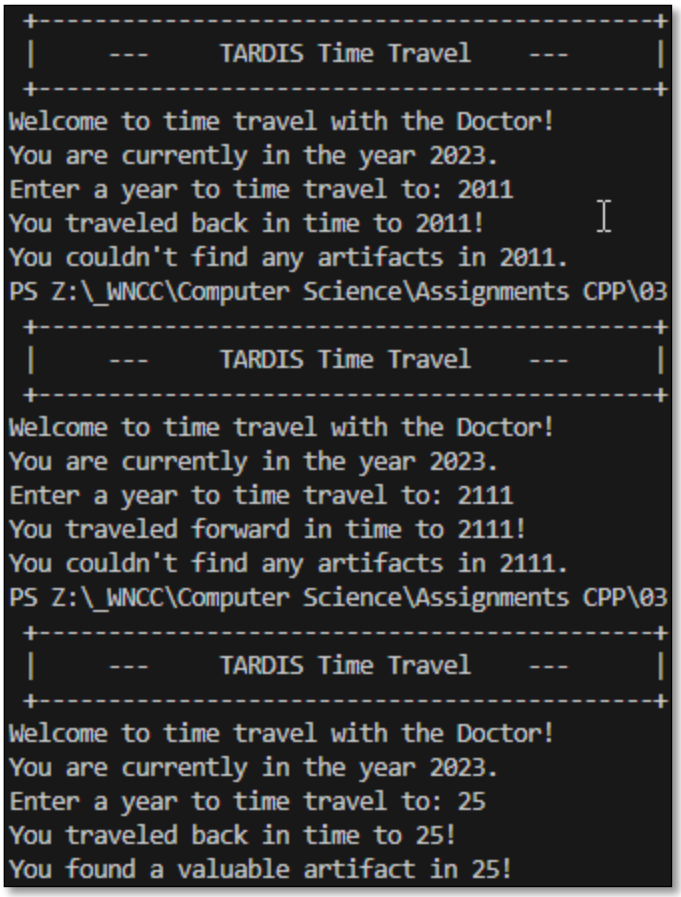
The program also generates a random number between 0 and 9. Depending on the value of the random number, it decides the result of the time travel mission.

- Exactly 1: You are stuck until you are rescued.
- Less than 5, a successful artifact find.
- Otherwise, it indicates no artifacts were found.

As with any assignment, you have a license to be creative. If your program demonstrates understanding, you can travel any way you want.

NOTE: This program does not actually perform time travel. (Just in case, you should leave a note on your computer desk explaining where you went.)

Example run



Assignment Submission

1. Attach the pseudocode.

2. Attach the program files.
3. Attach screenshots showing the successful operation of the program.
4. Submit in Blackboard.