RandomNumberGame #1

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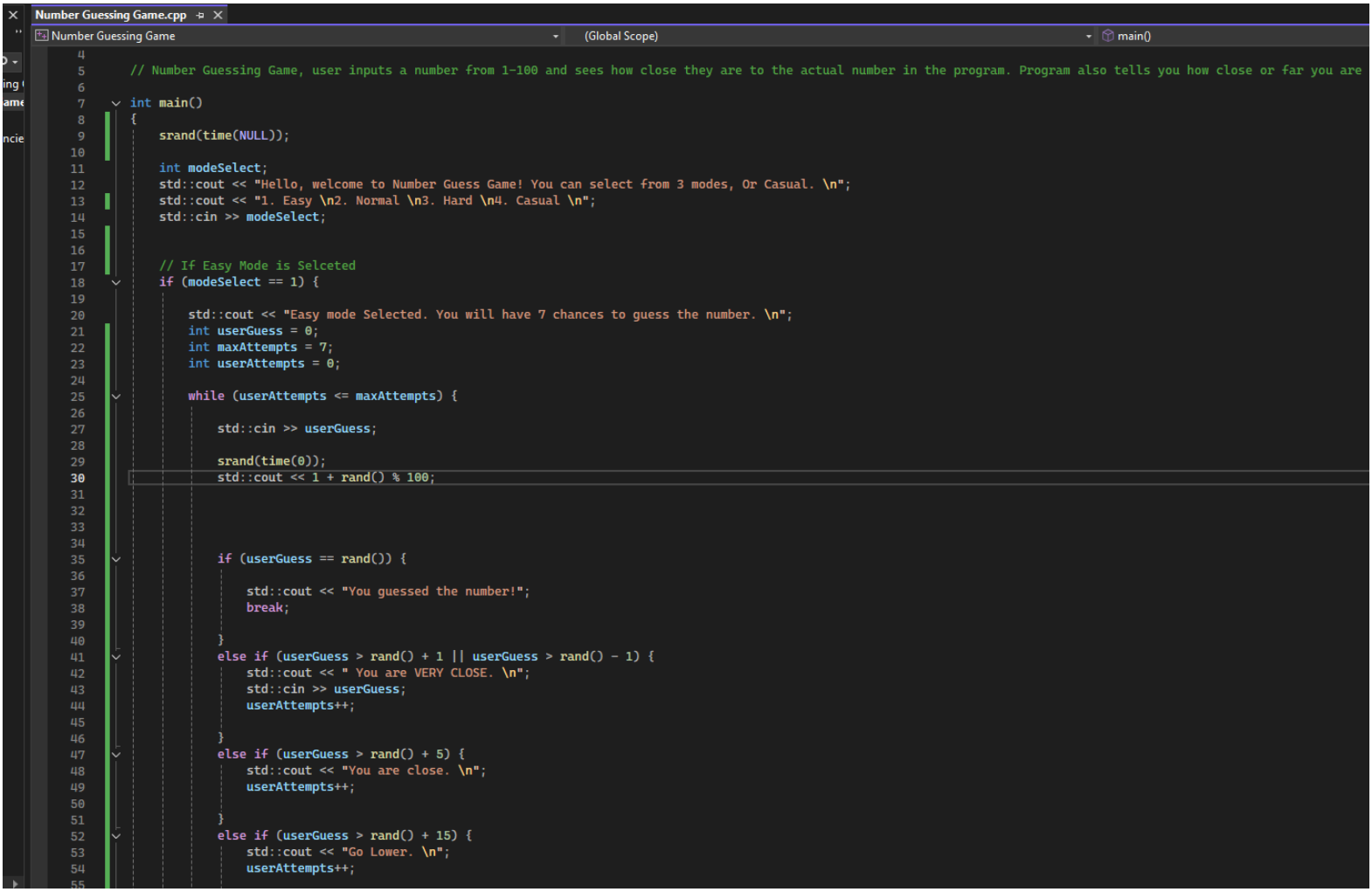
The Goal of this program is to create a game where:

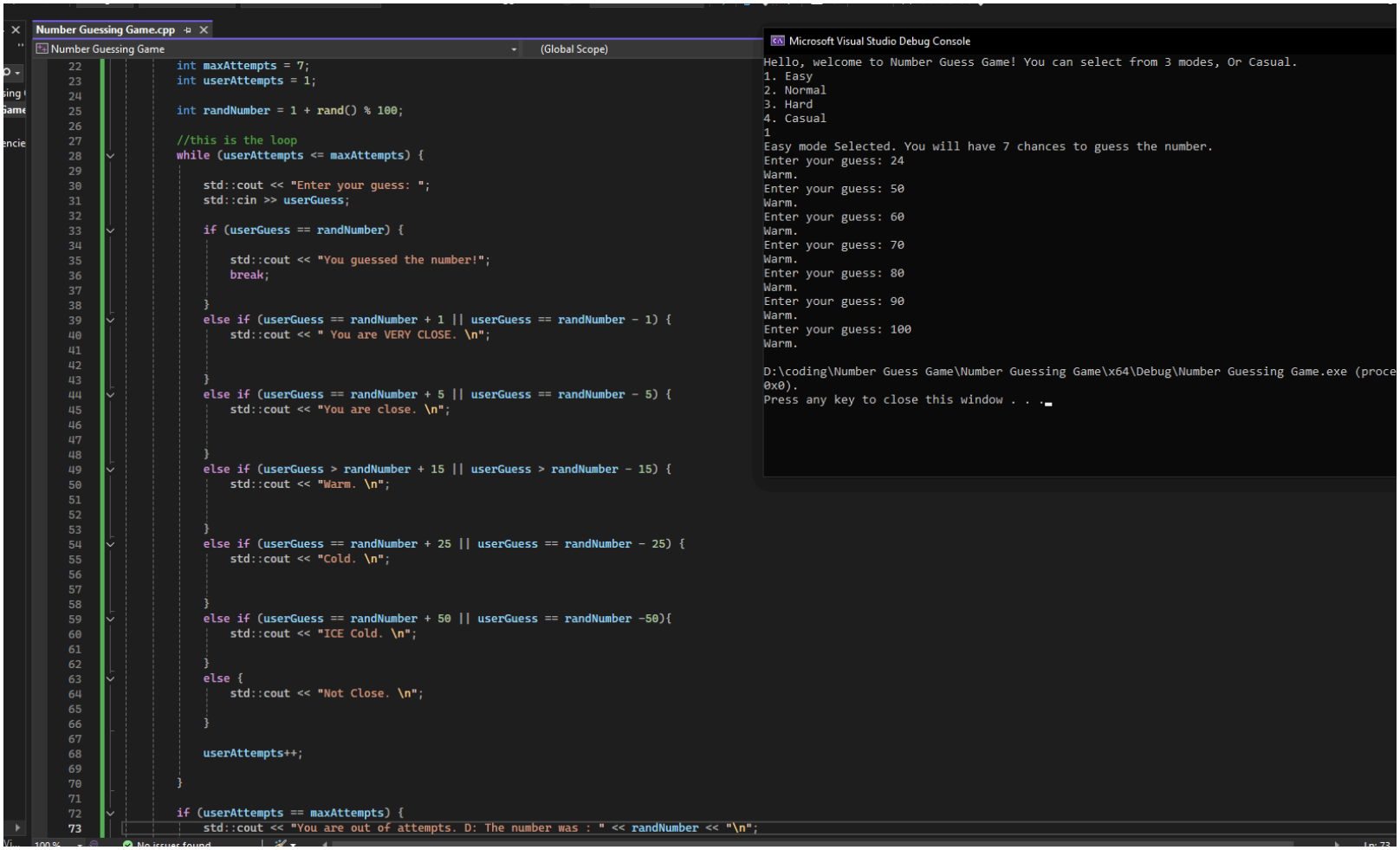
- The user guesses what the random number is based on the difficulty
- The difficulties are Easy, Normal, Hard, and Casual
- Once the users guesses the number the program will stop
- If the user doesn't it will show the number and restart the program again from the beginning.



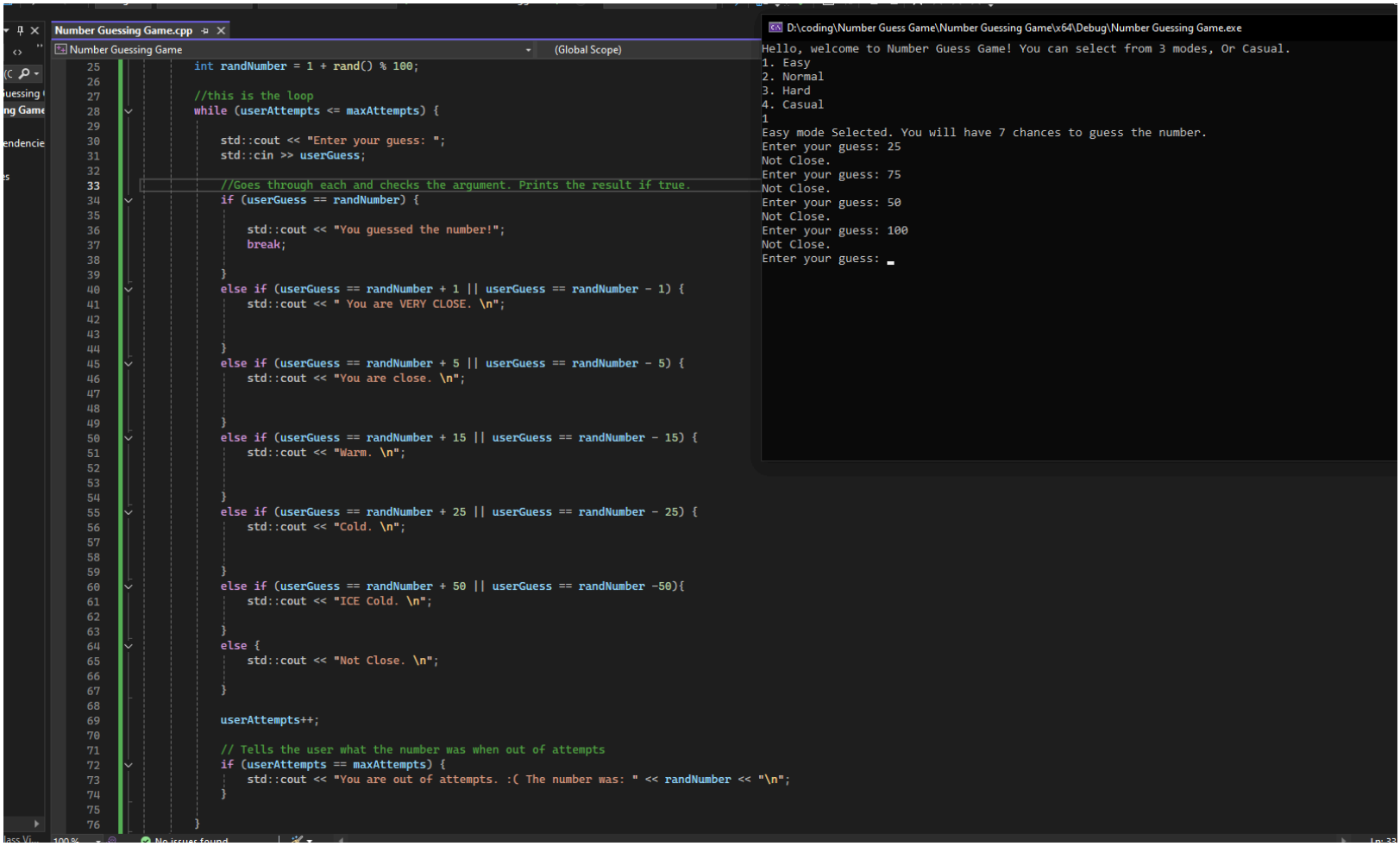

```cpp
// Number Guessing Game, user inputs a number from 1-100 and sees how close they are to the actual number in the program. Program also tells you how close or far you are

int main()
{
    srand(time(NULL));

    int modeSelect;
    std::cout << "Hello, welcome to Number Guess Game! You can select from 3 modes, Or Casual. \n";
    std::cout << "1. Easy \n2. Normal \n3. Hard \n4. Casual \n";
    std::cin >> modeSelect;


    // If Easy Mode is Selceted
    if (modeSelect == 1) {

        std::cout << "Easy mode Selected. You will have 7 chances to guess the number. \n";
        int userGuess = 0;
        int maxAttempts = 7;
        int userAttempts = 0;

        while (userAttempts <= maxAttempts) {

            std::cin >> userGuess;

            srand(time(0));
            std::cout << 1 + rand() % 100;




            if (userGuess == rand()) {

                std::cout << "You guessed the number!";
                break;

            }
            else if (userGuess > rand() + 1 || userGuess > rand() - 1) {
                std::cout << " You are VERY CLOSE. \n";
                std::cin >> userGuess;
                userAttempts++;

            }
            else if (userGuess > rand() + 5) {
                std::cout << "You are close. \n";
                userAttempts++;

            }
            else if (userGuess > rand() + 15) {
                std::cout << "Go Lower. \n";
                userAttempts++;
```

The First issue I was running into was, I kept getting random numbers each time I ran the program. This is only showing the first part/easy mode but I was trying to understand why it was showing me the number and being random each time. It was because I set up for the number to be random each time the user inputted something in the loop. I should have set the random number as an int data type and put that into the **if** argument instead of the **rand()**.

** the **srand(time(NULL));** at the top of the program sets a seed (*Look up what this means later*) for generating random numbers (**srand**) and **time(NULL))** makes it so the seed changes each second, which will make the random number different each second **



Then once I made some changes and fixed the while loop so it can actually read each attempt, and keep the random number the same, I kept getting weird instances where the program would print this each time. I looked it up and it was because the **userGuess** on line 49 had a greater than operator.



Then I kept getting **Not Close**, and figured out that in the argument it was only checking to catch if it was EXACTLY from that correct number. So it would go through each and check if the input was +1/-1 exactly from the random number or +50/-50 from the random number. I have to make it check in a range somehow.

I ended up asking ChatGPT (kinda ashamed of doing so but the question was kinda unique) and I ended up using abs. In the program abs is the absolute value of a number I believe and we are doing **(the users Input)** - **(what the random number is)** to have a distance number. Then using the distance number in the if argument to check to see if it is in range and giving back the user the message of hot or cold.

Range
1 -> Very Hot
2 - 4 -> Hot
5 - 14 -> Warm
15 - 24 -> Cold
25-49 -> Ice Cold
50+ Not Close

The last issue was figuring out how to restart the program if the user didn't guess the number correctly and after looking up and reading, I saw that you can just, instead of doing **return 0;** to end the program you can do **return main();** and it will start back there.