CS342/CS343   
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Homework 1, Azwad Shameem, 2/5/2022, CS342/CS343

Graphical user interface, text, application

Description automatically generated The objective of this assignment is to show the overflow phenomenon through programming. In this assignment we will show overflow error by adding 214748367 + 1 to show that the overflow error will cause the result to be negative even though we are adding two positive numbers.

A picture containing text

Description automatically generated

The left image presents the code which adds +2147483647 and +1 and then prints out the result in decimal and binary form. In addition, the binary function in printf() is used to convert decimal to binary by bit shifting the decimal integer into binary form. The right image is the resulting output after compiling the above code, which gives us the decimal and binary results. Clearly, this shows the overflow phenomenon because we get a negative number after adding two positive numbers. The overflow error occurred here because the highest positive unsigned integer in 32 bits is +2147483647. Since the highest positive 32-bit unsigned integer is 2147483647, adding any number after that will give us a negative number which is shown in the results. Thus, the objective of the assignment is completed because through programming the overflow error has been shown.