n-bit adder subtractor circuit

In this program n is declared as parameter and can be changed in the program. Its basically like a constant declaration. Using looping statement an intermediate output(wire) gets the value of 2’s complement of an input if subtraction needs to be done else it has same value as that of the input.

If carry\_in is 1 that means we are forcing adder to subtract so by taking xor of all bits og one input with carry\_in gives us the desired result to add to 1st operand/input.

Using generate block full adder module is called again and again to get the required answer