The way I understood the meaning of this homework:

In this homework we can clearly see the difference between our universe and the multiverse. In our world we can use loops and built-in functions and it gives a really comfortable worktime while writing codes. Without using all these conditionals, loops, etc. the code suddenly becomes way too longer, more difficult to write and read. We literally wrote all the calculations one by one and it makes a 2 - 3 rowed for loop to nearly 50 rowed manual calculations. This reminds me of older languages like assembly or even being have to write the code in machine language. So this assignment shows us the value of the current languages and methods that we use.

What I thought when I was solving the first problem:

I needed to check the first digit is 0 or not. So basicly I add 10 to the first digit and divided it to 11. So I found a hold which equals to zero if the very left bit equals to 0 and 1 or its value is something else. hold variables determine whether or not the message is clean. Messages begin with zero if they are clear. Since hold equals 0, there is nothing to modify. If the message is not clear and begins with a number other than zero, the hold value is 1. Then I use the %2 operator to add vary to the last bit. Since base 2 is the format of our message, there are just ones and zeros. Thus, if our previous value was 0, it will now be 1, and if it was 1, it will now be 0. In order to transform this int variable to a character that corresponds to the ASCII table, base is employed to convert the message into 10 base format.

What I thought when I was solving the second problem:

I used pretty much the same logic but used String variables, for loop and so on. By using if-else I didn't need to make calculations for finding the first digit's value. So it was easier and more practical.