# Problem 5 – Another Useless Bits Game

Like all previous bits game this one is also totally useless, but we don’t have a nice idea for exam problem. **You will be given an integer numbers, each one on a new line in the console, until you receive command “end”.**

**For each number take the count of the bits with value 1.**

If the **count is even** – **take the first “count” bits and invert them.** For example if you have the number 56142 – 00000001101101101001110. **Ten bits equals 1.** So you take the **first ten 10 bits and invert them** – 00000001101100010110001.

If the **count is odd** – you must **shift the number to left.** For example – 0000101010101 have **5 bits (odd)**. Result should be 0001010101010.

**After** you manipulate the number **sum all new numbers and print the result**.

**Sum the count of bits with value ‘1’ from all new numbers and print them too.**

**Input**

The input should be read from the console. It will consist **numbers each on new line until you receive command “end”.**

**Output**

The output should be exactly two lines.

* First line – **sum of all new numbers.**
* Second line – **sum of all bits with value ‘1’ from all new numbers.**

**Constraints**

* The input number will be a valid integers in the range [0 … 4294967295].
* Program ends when receive string command – “end”.
* Allowed working time for your program: 0.25 seconds.
* Allowed memory: 16MB.

**Examples**

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 321654  852962  end | 2028365  19 | 321654 -> 1001110100001110110  Count of bits is 10(even) so invert first ten bits.  322441 -> 1001110101110001001  New count is 10.  852962 – 011010000001111100010 – 9  Count of bits is 9(odd) so shift number left.  1705924 – 110100000011111000100 – 9  Sum of numbers -> 322441 + 1705924 = 2028365  Sum of bits -> 10 + 9 = 19 |