# **Reading the Abacus Part 1 – Russian Schoty**

The Russian schoty is type of abacus (counting tool) that is used by sliding threaded beads along horizontal wires. An example schoty would have 7 wires, each holding 10 beads. Each bead, when moved to the left, would count as 1 unit. Starting from the bottom wire and moving up, the units increase by a factor of 10. If we use "O" for a bead and "-" to show the wire, we can represent the schoty as follows:

---OOOOOOOOOO millions

---OOOOOOOOOO hundred-thousands

---OOOOOOOOOO ten-thousands

---OOOOOOOOOO thousands

---OOOOOOOOOO hundreds

---OOOOOOOOOO tens

---OOOOOOOOOO ones

To read the number, we count the beads on the left-hand side of each wire. In the example below, the number is 501264:

---OOOOOOOOOO 0

OOOOO---OOOOO 5

---OOOOOOOOOO 0

O---OOOOOOOOO 1

OO---OOOOOOOO 2

OOOOOO---OOOO 6

OOOO---OOOOOO 4

**Task:** Given an array of strings representing each wire in the schoty, return the number being displayed.

**Examples:**

Schoty({

"---OOOOOOOOOO",

"---OOOOOOOOOO",

"---OOOOOOOOOO",

"OOO---OOOOOOO",

"O---OOOOOOOOO",

"OOOOOOOOO---O",

"OO---OOOOOOOO"

}) ➞ 3192

Schoty({

"OO---OOOOOOOO",

"O---OOOOOOOOO",

"OOOOO---OOOOO",

"---OOOOOOOOOO",

"---OOOOOOOOOO",

"---OOOOOOOOOO",

"---OOOOOOOOOO"

}) ➞ 2150000

**Note:** This challenge ignores the traditional 4-bead wires used for quarter-ruble and quarter-kopek calculations.

# **Reading the Abacus Part 2 – Japanese Soroban**

The Japanese soroban is type of abacus (counting tool) that is used by sliding threaded beads up and down wires. The soroban is divided into an upper deck (where each bead is worth 5 units) and a lower deck (where beads are worth 1 unit). Working from the right and moving to the left, units increase by a factor of 10. If we use "O" for a bead and "|" to show the wire, we can represent the soroban as follows:

OOOOOOO

||||||| Upper deck

------- Dividing line

||||||| Lower deck

OOOOOOO

OOOOOOO

OOOOOOO

OOOOOOO

To read the number, we count the value of the number of beads that have been moved towards the dividing line. The values for the upper and lower deck are added together. In the example below, the number is 30651:

OOOO||O

||||OO|

-------

||O|O|O

OOOO|O|

OOOOOOO

OO|OOOO

OOOOOOO

0000550 Upper deck

0030101 Lower deck

30651 Total

**Task:** Given a list of strings representing the soroban, return the number being displayed.

**Examples:**

Soroban(new string[] {

"OOOO||O",

"||||OO|",

"-------",

"|||O|OO",

"OOOOOOO",

"OOO|OOO",

"OOOOO|O",

"OOOOOO|"

}) ➞ 2584

Soroban(new string[] {

"||OO||O",

"OO||OO|",

"-------",

"OO|OO||",

"OOO|OOO",

"OOOO|OO",

"|OOOOOO",

"O|OOOOO"

}) ➞ 8901750