Challenge #3 [Mindtree] - Scarlet Witch's solution

It's not really a daily challenge if you don't crack a password! And you really have a password on your hand this time.

You see, while you got the solution to the prisoner dilemma, Shaktimaan didn't suggest your name for the internship. He wasn't wearing his glasses, and instead drafted you to the forensic team.



It seems one of the prisoners have an ancient lock with them. It is your first day in the forensics team and you want to make a great impression - you decide to unlock this ancient lock.

The lock's password is directly related with the time of the day and a secret series, denoted by the following

an = 2an-1 - 1

* The hour in current time tells us the value of a0
* And the minute tells us the number of terms (numbering starts from 0)

Let's say we have the time as 23:05, then :

* a0 = 23
* a1 = 2\*23 - 1 = 45
* a2 = 89
* a3 = 177
* a4 = 353
* a5 = 705

Then, we sum up these numbers, we get: 23 + 45 + 89 + 177 + 353 + 705 = 1392

In terms of password, this corresponds to BDJC. (Because 0 corresponds to A, 1 corresponds to B, 2 to C and so on...)

Given the time, please print the password for this lock.

**Input format**

* The first line contains T, the number of test cases
* Each line after that contains the current time
* Note a0 > 0

**Output format**

* For each input, print the password

**Example Input**

|  |  |
| --- | --- |
|  | 3 |
|  | 23:05 |
|  | 10:03 |
|  | 01:10 |

**Example Output**

|  |  |
| --- | --- |
|  | BDJC |
|  | BDJ |
|  | BB |

**Explanation**

1. The sum of the first one becomes: 1392 -> BDJC
2. The sum of second one becomes: 139 -> BDJ
3. The sum of third one becomes: 11 -> BB

Note: Users running code in Java should keep the class name as Main