



A. Equal Subsequences

time limit per test: 1 second
memory limit per test: 256 megabytes

We call a bitstring* perfect if it has the same number of **101** and **010** subsequences†. Construct a perfect bitstring of length n where the number of **1** characters it contains is exactly k .

It can be proven that the construction is always possible. If there are multiple solutions, output any of them.

* A bitstring is a string consisting only of the characters **0** and **1**.

† A sequence a is a subsequence of a string b if a can be obtained from b by the deletion of several (possibly zero or all) characters.

Input

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \leq t \leq 500$). The description of the test cases follows.

The first line of each test case contains two integers n and k ($1 \leq n \leq 100$, $0 \leq k \leq n$) — the size of the bitstring and the number of **1** characters in the bitstring.

Output

For each test case, output the constructed bitstring. If there are multiple solutions, output any of them.

Example

input	Copy
5	
4 2	
5 3	
5 5	
6 2	
1 1	
output	Copy
1010	
10110	
11111	
100010	
1	

Note

In the first test case, the number of **101** and **010** subsequences is the same, both being **1**, and the sequence contains exactly two **1** characters.

In the second test case, the number of **101** and **010** subsequences is the same, both being **2**, and the sequence contains exactly three **1** characters.

In the third test case, the number of **101** and **010** subsequences is the same, both being **0**, and the sequence contains exactly five **1** characters.

Codeforces Round 1030 (Div. 2)

Contest is running

01:56:06

Contestant



→ Submit?

Language: GNU G++23 14.2 (64 bit, ms) ▼

Choose file: No file chosen

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

→ Last submissions

Submission	Time	Verdict
324051091	Jun/12/2025 17:38	Pretests passed

→ Score table

	Score
Problem A	494
Problem B	988
Problem C	988
Problem D1	1235
Problem D2	988
Problem E	2470
Problem F	3458
Successful hack	100
Unsuccessful hack	-50
Unsuccessful submission	-50
Resubmission	-50

* If you solve problem on 00:03 from the first attempt

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