Equivalence Classes:

- E1: n < 1
- E2: 1 <= n <= 10
- E3: n > 10

E1, E2 and E3 equivalence classes are derived from the requirements. In case given input belongs to E1, the program is expected to return null. In case the input belongs to E2, the program is expected to return the corresponding binary representation. In case the input belongs to E3, the program is expected to display an error message indicating that the max bits input is 10 and return null.

BVA (Boundary Value Analysis):

---------*-----X----*----------*----X----*---------

Test cases:
T = {

t1(n=0),

t2(n=1),

t3(n=2),

t4(n=9),

t5(n=10),

t6(n=11)

}

Inputs/Expected outputs (I wrote “gray code rep.” instead of the actual binary representation because it is too large):

For n = 0, the expected output is null

For n = 1, the expected output is the gray code rep.

For n = 2, the expected output is the gray code rep.

For n = 9, the expected output is the gray code rep.

For n = 10, the expected output is the gray code rep.

For n = 11, the expected output is null