After how many terms in the sequence 1, 10, 11, 100, 101 … will the number 100001 appear?

Answer:

Terms in the sequence 1, 10, 11, 100, 101 are numbers 1, 2,3, 4, 5 in the binary numeral system 100001 in this system is 33 (100001=2^5*1+2^4*0+2^3*0+2^2*0+2^1*0+2^0*1=32+1=33). So 32 terms will be before 33th