Kapıcılar Kralı

There are N floor and M escalators(Escalators move only way).If someone starts to traverse(Not change this) from any floor, there is no way he/she comes back to where he/she started.If there are no escalators to a floor, that floor is called magical.If there are no escalators from a floor, that floor is called haunted.Some floors are both magical and haunted.

There are 2 housekeepers of this mansion, Tarık and Okan.They gave a number to each magical and haunted floors 1 to k separately.k escalators from magical floors to haunted floors considered as one group .These k escalators are grouped so that none of the escalators intersect at any floor.In that case there is exactly one route from one haunted floor to one magical floor.Two group are considered different if and only if there exist at least an escalator one group contains and other does not.Assume there is a route from haunted floor i, to magical floor $f(i)$.For every pair (i, j) in a group, if $i < j$ and $f(i) > f(j)$ is true, this is considered as dangerous situation.If number of dangerous situations in a graph is odd,Tarık owes 1 gayme to Okan.If not Okan owes 1 gayme to Tarık.

Tarık and Okan have lots of free time and both of them love to gamble.So they have chosen all possible groups exactly once.Print how many gayme Okan has at the end modulo $10^9 + 7$.