The meaning of the question: the minimum dominance set problem, or power station, the power station in a city, the city and the immediate neighboring city will have electricity. Ask the number of minimum placement power stations that have electricity in all cities.

Solution: First, DFS+ pruning 2. DFS+ state compression + pruning

One:

First of all, I think of DFS. Whether the city is a two-state power plant or not a power station. If you search so deep, you can get the minimum number of power stations, but the data size of 35 is not allowed to be pruned. In conjunction with the above DFS pruning, there are currently three thoughts:

1. After placing the power station, its effect is 0. After the power station is placed, the city with electricity still has electricity, and the city without electricity still has no electricity. That is to say, after the power station is placed, the state changes from no electricity. It is 0 for cities with electricity. (Note that a city with electricity can be re-powered, that is, it is powered by a number of different adjacent power stations. The city where the power station is placed can also be powered, as long as the city itself does not have a power station.) No longer search deep.

2. Record the number of successful placements of power stations covering the entire city (but not necessarily optimal), and in the future search process, if the current number of power stations placed is greater than the record The success saved in the city covers the number of power stations in the city, and the search situation is directly cut off (because the search is only impossible to be the optimal solution than the record).

3. When searching for a certain point in depth, there is a point where there is no electricity before, and the other points after this point, that is, the points that we want to search later are not directly adjacent to the previous point of no electricity, then This means that until the end of the search, this unpowered point will never be powered. (The power station can no longer be discharged in this city, because the search process has reached the point behind it; nor can it be powered by the subsequent point power station because It is not directly connected to the adjacency at all. Obviously, it cannot meet the conditions of covering the entire city with electricity, and cuts off this situation.

Code