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1 #include "../bits/stdc++.h"
2 // 最大二部マッチング
3 // O(V(V+E))
4 // verified: http://judge.u-aizu.ac.jp/onlinejudge/review.jsp?rid=3381263
5 class BipartiteMatching
6 {
7     int size;
8     std::vector<std::vector<int>> > g;
9     std::vector<int> match;
10    std::vector<bool> used;
11    bool dfs(int v)
12    {
13        used[v] = true;
14        for (const auto &u : g[v])
15        {
16            int w = match[u];
17            if (w < 0 || (!used[w] && dfs(w)))
18            {
19                match[v] = u;
20                match[u] = v;
21                return true;
22            }
23        }
24        return false;
25    }
26
27 public:
28     BipartiteMatching(int v) : size(v), g(v), match(v), used(v) {}
29     void add_edge(int u, int v)
30     {
31         g[u].push_back(v);
32         g[v].push_back(u);
33     }
34     int maximum_matching(void)
35     {
36         int res = 0;
37         fill(begin(match), end(match), -1);
38         for (int v = 0; v < size; ++v)
39         {
40             if (match[v] >= 0)
41                 continue;
42             fill(begin(used), end(used), 0);
43             if (dfs(v))
44                 ++res;
45         }
46         return res;
47     }
48 };
49
```