Submission

ID	DATE	PROBLEM	STATUS	CPU	LANG
	TEST CASES				
8199455	02:49:27	Narrow Art Gallery	✔ **Accepted**	0.03 s	C++
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FILENAME	FILESIZE	SHA-1 SUM	
narrowartgallery.cpp	2319 bytes	f1c9ba5cda6375365aca04b09a051a37934ee307	download

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narrowartgallery.cpp

```
1  //https://open.kattis.com/problems/narrowartgallery
2  #include <bits/stdc++.h>
3  long long inf = (long long)1 << 60;
4  struct condicion {
5      long long necesaria;
6      long long lugar;
7      bool prevl;
8      bool prevr;
9  };
10
11 bool operator<(const condicion& s1, const condicion& s2) {
12     return std::tie(s1.necesaria, s1.lugar, s1.prevl, s1.prevr) <
13            std::tie(s2.necesaria, s2.lugar, s2.prevl, s2.prevr);
14 }
15
16 bool operator==(const condicion& s1, const condicion& s2) {
17     return std::tie(s1.necesaria, s1.lugar, s1.prevl, s1.prevr) ==
18            std::tie(s2.necesaria, s2.lugar, s2.prevl, s2.prevr);
19 }
20
21 std::map<condicion, long long> memo;
22
23 long long solve(std::vector<std::pair<long long,long long>>& v, int n, condicion s) {
24     if(memo.count(s) > 0) {
25         return memo[s];
26     }
27
28     long long necesaria = s.necesaria;
29     long long lugar = s.lugar;
30     bool prevl = s.prevl;
31     bool prevr = s.prevr;
32
33     if(lugar >= n) {
34         if(necesaria <= 0) {
35             return 0;
36         }
37         else {
38             return -inf;
39         }
40     }
41
```

Help

```
    long long lval = v[lugar].first;
    long long rval = v[lugar].second;

    long long ans = -inf;

    if(necesaria <= 0) {
        condicion next = {necesaria, lugar+1, true, true};
        ans = lval + rval + solve(v, n, next);
        memo[s] = ans;
        return ans;
    }

    if(prevl) {
        condicion next = {necesaria-1, lugar+1, true, false};
        ans = fmax(ans, lval + solve(v, n, next));
    }

    if(prevr) {
        condicion next = {necesaria-1, lugar+1, false, true};
        ans = fmax(ans, rval + solve(v, n, next));
    }

    condicion next = {necesaria, lugar+1, true, true};
    ans = fmax(ans, lval + rval + solve(v, n, next));

    memo[s] = ans;
    return ans;
}

void hacer_caso(int n, int m) {
  std::vector<std::pair<long long,long long>> v(n);
  for(auto& i : v) {
    std::cin >> i.first >> i.second;
  }

  memo.clear();
  condicion s = {m, 0, true, true};
  long long ans = solve(v, n, s);
  std::cout << ans << std::endl;
}

int main() {
  std::ios_base::sync_with_stdio(false);
  std::cin.tie(NULL);
  int n, m;
  while(std::cin >> n && std::cin >> m) {
    if(n == 0 && m == 0) {
      break;
    }
    hacer_caso(n, m);
  }
}
```