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3
4 class FlexyIRS {
5 public:
6     virtual double visitPerson (Person *p)=0;
7     virtual double visitCompany(Company *c)=0;
8     virtual double visitRegion (Region *r)=0;
9 };
10 class Taxpayer {
11 public:
12     virtual double accept(FlexyIRS *irs) =0;
13 };
14 class Person : public Taxpayer {
15 public:
16     double accept(FlexyIRS *irs) {
17         return irs->visitPerson(this);
18     }
19 };
20 class Company : public Taxpayer {
21 private:
22     std::list< std::shared_ptr<Person> > _employees;
23 public:
24     double accept(FlexyIRS *irs) {
25         return irs->visitCompany(this);
26     }
27 };
28 class Region : public Taxpayer {
29 private:
30     std::list< std::shared_ptr<Company> > _companies;
31 public:
32     double accept(FlexyIRS *irs) {
33         return irs->visitRegion(this);
34     }
35 };
36 class FastTrack : public FlexyIRS {
37 public:
38     double visitPerson(Person *p) {
39         return 1;
40     }
41     double visitCompany(Company *c) {
42         double tax = 0;
43         for (int i = 0; i < c->getSize(); i++) {
44             std::shared_ptr<Person> p = c->getPerson(i);
45             tax += p->accept(this);
46         }
47         if (c->getSize() < 4)
48             tax *= 0.6;
49         return tax;
50     }
51
52     double visitRegion(Region * r) {
53         double tax = 0;
54         bool hasDiscount = false;
55         for (int i = 0; i < r->getSize(); i++) {
56             std::shared_ptr<Company> c = r->getCompany(i);
57             tax += c->accept(this);
58             if (c->getSize() < 10)
59                 hasDiscount = true;
60         }
61         if (hasDiscount)
62             tax *= 0.8;
63         return tax;
64     }
65 };

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