```cpp
//停车场收费管理系统  version1
#include <iostream>
using namespace std;

class SmallCar;
class BigCar;

class Car {
    protected:
                int seats;
                double weight;
                double price = 0;
                static int location;
    public:
                Car(int seats1,double weight1):seats(seats1),weight(weight1) {
                    if(seats >= 10&&weight >= 4.5&&location > 0) {
                        cout<<"This car is a big car."<<endl;
                    //    cout<< BigCar::BigCar(seats,weight)<<endl;
                    }
                    else {
                        cout<<"This car is a small car."<<endl;
                    //    cout<<SmallCar::SmallCar(seats,weight)<<endl;
                    }
                }
                virtual void price_rules(double begin,double end) = 0;
                virtual double card(int time) = 0;
};

static int location = 1200;

class BigCar:public Car {
    private:

    public:
                BigCar(int seats,double weight):Car(seats,weight) {
                    cout<<"Class BigCar is constructing."<<endl;
                }
                virtual double card(int time) {
                    if(time == 1) {//办理年卡
                        cout<<"This car needs to build a year card."<<endl;
                        price += 2000;
                        return price;
                    }
                    else if(time == 2) {//办理月卡
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                cout<<"This car needs to build a month card."<<endl;
                price += 200;
                return price;
            }
        }
    }
    //只考虑1天之内的情况
    virtual double price_rule(double begin,double end) {
        location--;
        if(location > 0) {
        if(begin >= 8&&end <= 20) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) < 12) price += 6*12;
            else if((end - begin) > 12) price += 40;
            else price += (end - begin) * 12;
            return price;
        }
        else if(begin >= 8&&end > 20) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) <= 12) price += 6*12;//全部按照白天的6小时
计费

            else if((end - begin) > 12) {
                price += 40;
            }
            else price += (20 - begin) * 12 + (end - 20) * 1.5;
            return price;
        }
        else if(begin >= 8&&end <= 8) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) <= 12) price += 6*12;//全部按照白天的6小时
计费

            else if((end - begin) > 12) price += 40;
            else price += (20 - begin) * 12 + (4 + end) * 1.5;
            return price;
        }
        else if(begin < 8&&end < 8&&begin < end) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if((end - begin) > 6) price += 6*12;//全部按照白天的6小时计费
            else price += (end - begin) * 1.5;
            return price;
        }
        else if(begin < 8&&8 < end < 20) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) < 12) {
                price += 6*12;
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        }
        else if((end - begin) > 12) {
            price += 40;
        }
        else price += (8 - begin) * 1.5 + (end - 8) * 12;
        return price;
    }
}
else if (begin < 8&&20 < end < 24) {
    if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
    else if(6 < (end - begin) < 12) {
        price += 6*12;
    }
    else if((end - price) > 12) {
        price += 40;
    }
    else price += (8 - begin) * 1.5 + (end - 20) * 1.5 + 12 * 12;
}
else if (begin < 8&&24 < end < 8) {
    if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
    else if(6 < (end - begin) < 12) {
        price += 6*12;
    }
    else if((end - price) > 12) {
        price += 40;
    }
    else price += (8 - begin) * 1.5 + 4 * 1.5 + 12 * 12 + end * 1.5;
}
else if (20 < begin < 24&&20 < end < 24) {
    if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
    else if(6 < (end - begin) < 12) {
        price += 6*12;
    }
    else if((end - price) > 12) {
        price += 40;
    }
    else price += (end - begin) * 1.5;
}
else if (20 < begin < 24&&end < 8) {
    if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
    else if(6 < (end - begin) < 12) {
        price += 6*12;
    }
    else if((end - price) > 12) {
        price += 40;
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            }
            else price += (24 - begin) * 1.5 + end * 1.5;
        }
        else if (20 < begin < 24&&8 < end < 20) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) < 12) {
                price += 6*12;
            }
            else if((end - price) > 12) {
                price += 40;
            }
            else price += (24 - begin) * 1.5 + 8 * 1.5 + (end - 8) * 12;
        }
    }
}
};

class SmallCar:public Car {
    private:


    public:
            SmallCar(int seats,double weight):Car(seats,weight) {
                cout<<"class SmallCar is constructing."<<endl;
            }
            virtual double card(int time) {
                if(time == 1) {//办理年卡
                    cout<<"This car needs to build a year card."<<endl;
                    price += 1000;
                }
                else if(time == 2) {//办理月卡
                    cout<<"This car needs to build a month card."<<endl;
                    price += 120;
                }
            }
            virtual double price_rule(double begin,double end) {
                location--;
                if(location > 0) {
                if(begin >= 8&&end <= 20) {
                    if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
                    else if(6 < (end - begin) < 12) price += 6*8;
                    else if((end - begin) > 12) price += 20;
                    else price += (end - begin) * 8;
                    return price;
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        }
        else if(begin >= 8&&end > 20) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) <= 12) price += 6*8;//全部按照白天的 6 小时计
费

            else if((end - begin) > 12) {
                price += 20;
            }
            else price += (20 - begin) * 8 + (end - 20) * 1;
            return price;
        }
        else if(begin >= 8&&end <= 8) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) <= 12) price += 6*8;//全部按照白天的 6 小时计
费

            else if((end - begin) > 12) price += 20;
            else price += (20 - begin) * 8 + (4 + end) * 1;
            return price;
        }
        else if(begin < 8&&end < 8&&begin < end) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if((end - begin) > 6) price += 6*8;//全部按照白天的 6 小时计费
            else price += (end - begin) * 1;
            return price;
        }
        else if(begin < 8&&8 < end < 20) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) < 12) {
                price += 6*8;
            }
            else if((end - begin) > 12) {
                price += 20;
            }
            else price += (8 - begin) * 1 + (end - 8) * 8;
            return price;
        }
        else if (begin < 8&&20 < end < 24) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) < 12) {
                price += 6*8;
            }
            else if((end - price) > 12) {
                price += 20;
            }
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            else price += (8 - begin) * 1 + (end - 20) * 1 + 12 * 8;
        }
        else if (begin < 8&&24 < end < 8) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) < 12) {
                price += 6*8;
            }
            else if((end - price) > 12) {
                price += 20;
            }
            else price += (8 - begin) * 1 + 4 * 1 + 12 * 8 + end * 1;
        }
        else if (20 < begin < 24&&20 < end < 24) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) < 12) {
                price += 6*8;
            }
            else if((end - price) > 12) {
                price += 20;
            }
            else price += (end - begin) * 1;
        }
        else if (20 < begin < 24&&end < 8) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) < 12) {
                price += 6*8;
            }
            else if((end - price) > 12) {
                price += 20;
            }
            else price += (24 - begin) * 1 + end * 1;
        }
        else if (20 < begin < 24&&8 < end < 20) {
            if((end - begin) < 0.25) cout<<"This experience of parking is free."<<endl;
            else if(6 < (end - begin) < 12) {
                price += 6*8;
            }
            else if((end - price) > 12) {
                price += 20;
            }
            else price += (24 - begin) * 1 + 8 * 1 + (end - 8) * 8;
        }
    }
}
```

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};


int main() {
    int seats;
    double weight;
    cin>>seats>>weight;
    Car *ptr;
//    ptr->Car(seats,weight);
    SmallCar obj1(seats,weight);
    BigCar obj2(seats,weight);
    ptr = &obj1;
    ptr = &obj2;
    cout<<"Welcome to the parking system,we are going to provide a wonderful experience to
you."<<endl;
    cout<<"---------------------------------------------------------------------------"<<endl;
    cout<<"please choose whether you are going to open a year card or a month card."<<endl;
    cout<<"if you choose to open a year card,please click 1"<<endl;
    cout<<"if you choose to open a month card,please click 2"<<endl;
    cout<<"if you don't want to open a card please click 3"<<endl;
    int n;
    cin>>n;//选择的数字
//    int time;
//    cin>>time;
    switch(n) {
        case 1:ptr->card(n);
        case 2:ptr->card(n);
        case 3:cout<<"This accountant doesn't need a card,please go on."<<endl;
    }
    double begin;
    double end;
    cin>>begin>>end;
    //ptr = &obj1;
    cout<<obj1.price_rule(begin,end)<<endl;
    return 0;
}
```