

```
1  /* Miguel Antão Pereira Amaral 78865 */
2  /* Aula Quarta feira 15h 30 */
3  #include <iostream>
4  #include <stdlib.h>
5  #include <stdio.h>
6  #include <string>
7  #include <sstream>
8  #include <forward_list>
9  class Cat {
10 private:
11     int _age = 0;
12     std::string _name = "anonimo";
13 public:
14     Cat(): _age(0), _name("anonimo"){ }
15     Cat(int age, std::string name) : _age(age), _name(name){};
16     std::string getName(){ return _name;}
17     void setName(std::string name){ _name = name;}
18     int getAge(){ return _age;}
19     void setAge(int age){ _age = age;}
20     friend std::ostream &operator<<(std::ostream &os, Cat &cat) {
21         os << "(Cat) ";
22         os << "name: " << cat.getName();
23         os << " age: " << cat.getAge();
24         return os;
25     }
26     friend std::istream &operator>>(std::istream &is, Cat &cat) {
27         std::string garbage;
28         std::string name;
29         int age;
30         is >> garbage;
31         is >> garbage;
32         is >> name;
33         is >> garbage >> age;
34         cat.setName(name);
35         cat.setAge(age);
36         return is;
37     }
38 };
39
40 int main(){
41
42     /* Create Cats */
43     std::shared_ptr<Cat> c1 = std::make_shared<Cat>();
44     std::shared_ptr<Cat> c2 = std::make_shared<Cat>(24, "Tareco");
45     std::shared_ptr<Cat> c3 = std::make_shared<Cat>(6, "Pantufa");
46     std::cout << *c1 << std::endl;
47     std::cout << *c2 << std::endl;
48     std::cout << *c3 << std::endl;
49
50     /* Put Cats in stream */
51     std::stringstream stream1;
52     stream1 << *c2;
53     stream1 << *c3;
54
55     /* Create 2 new clean cats*/
56     std::shared_ptr<Cat> c4 = std::make_shared<Cat>();
57     std::shared_ptr<Cat> c5 = std::make_shared<Cat>();
58
59     /*REcover cats from the stream*/
60     stream1 >> *c4;
61     stream1 >> *c5;
62
63     /* Print the cats again */
64     std::cout << "Recovered Cats" << std::endl;
65     std::cout << *c4 << std::endl;
66     std::cout << *c5 << std::endl;
67     return 0;
68 }
69
```