

```

1  #include <iostream>
2  using namespace std;
3
4  class Name {
5  public:
6      Name() {}
7      ~Name() {
8          cout << "~Destructor called on " << this << endl;
9      }
10 private:
11     string name{ "CS" };
12 };
13
14 shared_ptr<Name> func() {
15     unique_ptr<Name> obj{ make_unique<Name>() };
16
17     // #1 Insert Code
18     return shared_ptr<Name>{move(obj)};
19 }
20
21 int main() {
22
23     // #2 Insert Code
24     weak_ptr<Name> wPtr1{ func() };
25     if (!wPtr1.expired())
26     {
27         cout << "obj is at: " << wPtr1.lock() << endl;
28     }
29     else {
30         cout << "obj destroyed" << endl;
31     }
32
33     // -OR-
34     // #2 Insert Code
35     cout << endl << endl;
36
37     shared_ptr<Name> sPtr2{ func() };
38     weak_ptr<Name> wPtr2{ sPtr2 };
39     if (!wPtr2.expired())
40     {
41         cout << "obj is at: " << wPtr2.lock() << endl;
42     }
43     else {
44         cout << "obj destroyed" << endl;
45     }
46
47
48     // -OR-
49     // #2 Insert Code
50     cout << endl << endl;
51
52     shared_ptr<Name> sPtr3{ func() };
53
54     if (!sPtr3.use_count() == 0)
55     {
56         cout << "obj is at: " << sPtr3.get() << endl;
57     }
58     else {
59         cout << "obj destroyed" << endl;
60     }
61
62     // -OR-
63     // Multiple correct answers accepted
64     cout << endl << endl;
65

```

```
66         cout << "END OF PROGRAM" << endl;
67
68         return 0;
69     }
70     /*
71     ~Destructor called on 00D12508
72     obj destroyed
73
74
75     obj is at: 00D12AF0
76
77
78     obj is at: 00D12508
79
80
81     END OF PROGRAM
82     ~Destructor called on 00D12508
83     ~Destructor called on 00D12AF0
84     */
```