Homework 6

Computer Programming (II)
Spring Semester, 2024

Please modify the following program so that (1) each time the user types 1, the program outputs "Eating...", (2) each time the user types 2, the program outputs "Writing...", and (3) when the user types 3, the destructors of Dessert and Pen get called:

```cpp
#include <iostream>
#include <cassert>
using namespace std;

class Dessert
{
private:
    int weight;
public:
    Dessert() : weight( 100 ) {}
    ~Dessert() { cout << "Dessert destructor\n"; }
    int getWeight() const { return weight; }
    void eat()
    {
        cout << "Eating...\n";
        weight = ( weight >= 20 ? weight - 20 : 0);
    }
};

class Pen
{
public:
    ~Pen() { cout << "Pen destructor\n"; }
    void write() { cout << "Writing...\n"; }
};

int main()
{
```

```cpp
MySmartPointer< Dessert > myMealPtr( new Dessert );
MySmartPointer< Pen > myPenPtr( new Pen );
char choice;

while ( cin >> choice )
{
    switch ( choice )
    {
        case '1':
            ( *myMealPtr ).eat();
            assert( myMealPtr->getWeight() != 100 );
            break;
        case '2':
            myPenPtr->write();
            break;
        default:
            return 0;
    }
}
}
```

Additional requirement:

Please leave intact the main function, Dessert class and Pen class. The MySmartPointer class template shall not have a copy constructor. Furthermore, assertions shall not fail.