**Câu 1:**

**a)**

**Hãy cho biết chương trình trên in gì ra màn hình?**

B text

A default

**Giải thích trình tự gọi hàm trong hàm main( )**

- Initial an obj1 of class B with 1 param is “text”

=> The program calls A’s constructor method with 1 param and afther that, the program calls B’s constructor method with 1 param.

- Initial a pointer to obj2 of class A

=> the program calls A’s default constructor method

- Copying obj1 of class B to obj of class A

=> the program calls B’s copy constructor

- Then foo function is called and print out the output of each obj created.

**b) Hãy cho biết chương trình trên gặp vấn đề gì về bộ nhớ?**

- A’s default constructor method is using strdup() which returns a pointer to a null-terminated byte string, which is a duplicate of the string pointed to by m\_s. And after the program called that default constructor as mentioned above, it doesn’t free that returned pointer which easy leading to a memory leak.

- Fix:

Create a A’s destructor method:

~A() {

if(m\_s) {

free(m\_s);

m\_s = nullptr;

}

}

And delete obj2 after the program finished.

**c) Hãy trang bị operator>> cho lớp A để nhập chuỗi từ bàn phím cho thuộc tính m\_s.**

friend istream &operator>>(istream &in, A &a) {

a.m\_s = new char[1024];

in.get(a.m\_s, 1024);

return in;

}