1) Look at the following code and draw memory representation at stages 1, 2, and 3.

```
char *a, *b, t = 'f', z='o'; // stage 1
a = new char;
*a = t;
b = &z; // stage 2
*b = 'g';
a = b;
*a = 'h'; // stage 3
delete a;
```

A follow-up question: do we have a memory leak?

2) Consider the following block of code:
```
char c = 'T', d = 'S';
char *p1 = &c;
char *p2 = &d;
char *p3;
```
Assume further that the address of c is 6940, and the address of d is 9772.
What will be printed when the following statements are executed sequentially?

p3 = &d;
cout << "*p3 = " << *p3 << endl;   // (1)

p3 = p1;
cout << "*p3 = " << *p3   // (2)
   << ", p3 = " << p3 << endl;   // (3)

*p1 = *p2;
cout << "*p1 = " << *p1   // (4)
   << ", p1 = " << p1 << endl;   // (5)