作业 1: DoubleLinkedList

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作业 1: 阅读课本第 91 页的 3.5, 完成模板类: DoubleLinkedList<DT>, 实现课本中 list 的全部功能; 并设置外部函数 find。

1 设计思路

根据书的代码建立双链表

1. 创建相应的头文件
2. 设计所需要的类（包括内部的大小，指针，头节点，尾节点，···）
3. 运算符重载
4. 确定所需的函数并将其设计出来，(insert, pop, printList，pushback，···)
5. 写出所需要的成员
6. 测试所需的函数
7. 写出所要求的外部函数
8. 根据要求写出主函数
9. debuging 测试
10. 得到结果

2 测试说明

输出的内容

```
student@student-VirtualBox:~/homework/pr1/DoublelinkedList$ g++ -o main main.cppstudent@student-VirtualBox:~/homework/pr1/DoublelinkedList$ ./
ain
1       2       3       4       5
Found 3at position: 3
1       2       4       5
Not Found 3 in the List
```

检查内存泄漏

```
student@student-VirtualBox:~/homework/pr1/DoublelinkedList$ valgrind ./main
==5929== Memcheck, a memory error detector
==5929== Copyright (C) 2002-2015, and GNU GPL'd, by Julian Seward et al.
==5929== Using Valgrind-3.11.0 and LibVEX; rerun with -h for copyright info
==5929== Command: ./main
==5929==
1       2       3       4       5
Found 3at position: 3
1       2       4       5
Not Found 3 in the List
==5929==
==5929== HEAP SUMMARY:
==5929==     in use at exit: 72,704 bytes in 1 blocks
==5929==   total heap usage: 9 allocs, 8 frees, 73,896 bytes allocated
==5929==
==5929== LEAK SUMMARY:
==5929==    definitely lost: 0 bytes in 0 blocks
==5929==    indirectly lost: 0 bytes in 0 blocks
==5929==      possibly lost: 0 bytes in 0 blocks
==5929==    still reachable: 72,704 bytes in 1 blocks
==5929==         suppressed: 0 bytes in 0 blocks
==5929== Rerun with --leak-check=full to see details of leaked memory
==5929==
==5929== For counts of detected and suppressed errors, rerun with: -v
==5929== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
```

no leak are possible 所以无内存泄漏