Course CSC 541 Advanced Data Structure Fall Semester 2012
Homework Project 3

Given Oct. 26, 2012, **Due: Nov. 14, 23:55, 2012**

Implement a structure that maintains a linear order, based on chapter 6.5 of the book.
The structure must support the following operations

- **o_t * create_order()** creates an empty linear ordered set
- **void insert_before(o_t *ord, key_t a, key_t b)** inserts the key a immediately before key b in the ordered set.
- **void insert_after(o_t *ord, key_t a, key_t b)** inserts the key a immediately after key b in the ordered set.
- **void insert_top(o_t *ord, key_t a)** inserts the key a as largest element in the ordered set
- **void insert_bottom(o_t *ord, key_t a)** inserts the key a as smallest element in the ordered set
- **void delete_o(o_t *ord, key_t a)** deletes the key a from the ordered set
- **int is_before(o_t *ord, key_t a, key_t b)** returns 1 if key a occurs before key b in the ordered set, 0 else.

Here **key_t** is a number type that allows comparisons.

Submission instructions:
You need to submit a single .c file through Moodle and rename it as Your_Unity_ID.c.
"**linearordertest.c**" contains all test cases and is available for download through Moodle. Grading will be done using the code in linearordertest.c, so you should integrate that into your main function to ensure you have tested your code thoroughly.

Note:
Sharing your code with others will be treated as academic dishonesty and be dealt with very severely.
Late submissions will not be accepted.