1 Exercises

Exercise 1. Consider inserting the following key-value pairs into a sequential search symbol table st, an object of type LinearSearchST.

key: S Е Х Р Τ. E Π T. т Α B T. Е A М value: 1 10 11 12 13 14 15 16 2 6 8 9 17 18

a. What is the state of the linked list first?

b. What is the value returned by st.size()?

c. What is the value returned by st.get("B")?

d. What is the state of the linked list first after the call st.delete("E")?

Exercise 2. Consider inserting the following key-value pairs into a binary search (ordered) symbol table st, an object of type BinarySearchST.

key: Ο L Е Е Х Μ L Е A 1 5 10 11 12 13 14 15 16 17 18 value: 3 6 8 9

a. What is the state of the keys and values arrays?

b. What is the value returned by st.floor("G")?

c. What is the value returned by st.ceiling("G")?

d. What is the value returned by st.rank("G")?

e. What is the value returned by st.select(5)?

f. What is the state of the keys and values arrays after the call st.delete("E")?

2 Solutions to Exercises

Solution 1.

a. (P, 16) -> (X, 13) -> (E, 18) -> (A, 14) -> (T, 7) -> (L, 17) -> (0, 5) -> (B, 9) -> (M, 15) -> (Y, 2) -> (S, 1) -> null b. 11

с. 9

d. (P, 16) -> (X, 13) -> (A, 14) -> (T, 7) -> (L, 17) -> (D, 5) -> (B, 9) -> (M, 15) -> (Y, 2) -> (S, 1) -> null

Solution 2.

a.												
	keys: values:	0 A 14	1 B 9	2 E 18	3 L 17	4 M 15	5 0 5	6 P 16	7 S 1	8 T 7	9 X 13	10 Y 2
b.	E											
c.	L											
d.	3											
e.	0											
f.												
	keys: values:	0 A 14	1 B 9	2 L 17	3 M 15	4 0 5	5 P 16	6 S 1	7 T 7	8 X 13	9 Y 2	