Test Cases for Questions 1 & 2

Part 1 - Multiple elements case

---

1. Insert at front and remove from front

Input

```
f 1
f 2
f 3
f 4
f 5
i
i
i
i
i
e
```

Output

```
5
4
3
2
1
```

---

2. Insert at front and remove from tail

Input

```
f 1
f 2
f 3
f 4
f 5
l
l
l
l
l
e
```

Output

```
1
2
3
4
5
```

---

3. Insert at back and remove from front

Input

```
t 1
t 2
```

t 3
t 4
t 5
i
i
i
i
i
e

Output

1
2
3
4
5

---

4. Insert at back and remove from back

Input

t 1
t 2
t 3
t 4
t 5
l
l
l
l
l
e

Output

5
4
3
2
1

---

5. Insert an element after a specific element

Input

t 1
t 2
t 3
t 4
t 5
a 6 3
i
i
i
i
i

i
e
Output
1
2
3
6
4
5

---

6. Insert an element after the last element
Input
t 1
t 2
t 3
t 4
t 5
a 6 5
i
i
i
i
i
i
e
Output
1
2
3
4
5
6

---

7. Insert an element before a specific element
Input
t 1
t 2
t 3
t 4
t 5
b 6 3
i
i
i
i
i
i
e
Output

1
2
6
3
4
5

---

8. Insert an element before the first element

Input

t 1
t 2
t 3
t 4
t 5
b 6 1
i
i
i
i
i
i
e

Output

6
1
2
3
4
5

---

9. Delete a specific element

Input

t 1
t 2
t 3
t 4
t 5
d 4
i
i
i
i
e

Output

4
1
2
3
5

---

10. Delete a non-existent element from the list

Input

```
t 1
t 2
t 3
t 4
t 5
d 11
i
i
i
i
i
e
```

Output

```
-1
1
2
3
4
5
```

---

11. Search an element

Input

```
t 1
t 2
t 3
t 4
t 5
s 3
e
```

Output

```
1
```

---

12. Search an element which is not present in the list

Input

```
t 1
t 2
t 3
t 4
t 5
s 9
e
```

Output

```
-1
```

Part 2 - Empty list operations

---

13. Delete from front in empty list

Input

```
t 1
i
i
e
```

Output

```
1
-1
```

---

14. Delete from tail in empty list

Input

```
l
e
```

Output

```
-1
```

---

15. Delete a specific element from empty list

Input

```
d 6
e
```

Output

```
-1
```

---

16. Searching in empty list

Input

```
s 3
e
```

Output

```
-1
```

Part 3 - Single element list operations

---

17. Delete from front

Input

```
t 4
i
e
```

Output

```
4
```

---

18. Delete from tail

Input
t 4
l
e

Output
4

---

19. Delete a specific element
Input
t 4
d 4
e
Output
4

---

20. Insert element after
Input
t 4
a 1 4
i
i
e
Output
4
1

---

21. Insert element before
Input
t 4
b 1 4
i
i
e
Output
1
4

Test Cases for Question 3

Part 1 - Multiple elements case

---

1. Insert at front and remove from front
Input
f 1 23 3
f 2 11 2

f 3 34 5
f 4 9 1
f 5 66 12
i
i
i
i
i
e

Output

5
4
3
2
1

---

2. Insert at front and remove from tail

Input

f 1 23 3
f 2 11 2
f 3 34 5
f 4 9 1
f 5 66 12
l
l
l
l
l
e

Output

1
2
3
4
5

---

3. Insert at back and remove from front

Input

t 1 23 3
t 2 11 2
t 3 34 5
t 4 9 1
t 5 66 12
i
i
i
i
i
e

Output

1
2
3
4
5

---

4. Insert at back and remove from back

Input

```
t 1 23 3
t 2 11 2
t 3 34 5
t 4 9 1
t 5 66 12
l
l
l
l
l
e
```

Output

5
4
3
2
1

---

5. Insert an element after a specific element

Input

```
t 1 23 3
t 2 11 2
t 3 34 5
t 4 9 1
t 5 66 12
a 6 16 7 3
i
i
i
i
i
i
e
```

Output

1
2
3
6
4
5

---

6. Insert an element after the last element

Input

```
t 1 23 3
t 2 11 2
t 3 34 5
t 4 9 1
t 5 66 12
a 6 16 7 5
i
i
i
i
i
i
e
```

Output

```
1
2
3
4
5
6
```

---

7. Insert an element before a specific element

Input

```
t 1 23 3
t 2 11 2
t 3 34 5
t 4 9 1
t 5 66 12
b 6 16 7 3
i
i
i
i
i
i
e
```

Output

```
1
2
6
3
4
5
```

---

8. Insert an element before the first element

Input

```
t 1 23 3
t 2 11 2
t 3 34 5
t 4 9 1
t 5 66 12
b 6 16 7 1
i
i
i
i
i
i
e
```

Output

```
6
1
2
3
4
5
```

---

9. Delete a specific element

Input

```
t 1 23 3
t 2 11 2
t 3 34 5
t 4 9 1
t 5 66 12
d 4
i
i
i
i
e
```

Output

```
4
1
2
3
5
```

---

10. Delete a non-existent process_id from the list

Input

```
t 1 23 3
t 2 11 2
t 3 34 5
t 4 9 1
t 5 66 12
```

d 11
i
i
i
i
i
e
Output
-1
1
2
3
4
5

---

11. Search an element
Input
t 1 23 3
t 2 11 2
t 3 34 5
t 4 9 1
t 5 66 12
s 3
e
Output
1

---

12. Search an element which is not present in the list
Input
t 1 23 3
t 2 11 2
t 3 34 5
t 4 9 1
t 5 66 12
s 9
e
Output
-1

Part 2 - Empty list operations

---

13. Delete from front in empty list
Input
t 1 23 3
i
i
e
Output

1
-1

---

14. Delete from tail in empty list
Input
l
e
Output
-1

---

15. Delete a specific element from empty list
Input
d 6
e
Output
-1

---

16. Searching in empty list
Input
s 3
e
Output
-1

Part 3 - Single element list operations

---

17. Delete from front
Input
t 4 67 11
i
e
Output
4

---

18. Delete from tail
Input
t 4 67 11
l
e
Output
4

---

19. Delete a specific element
Input
t 4 67 11

d 4
e
Output
4

---

20. Insert element after
Input
t 4 67 11
a 1 33 9 4
i
i
e
Output
4
1

---

21. Insert element before
Input
t 4 67 11
b 1 33 9 4
i
i
e
Output
1
4
