

## Chapter5 Example

We implement an experimental list animation metaphor to prove that our approach works. It is suitable for list animation but for general purpose list procedures. This example program includes basic operation of linked-list data structure such as insertion, deletion, reversion as shown in Figure 5-1.

<pre>1 public void remove(int item) { 2     if (head != null) { 3         ListNode current = head; 4         ListNode pre = null; 5         while (current != null ) { 6             if (current.data == item) { 7                 if (pre == null) 8                     head = head.next; 9                 else 10                    pre.next = current.next; 11                    size = size - 1; 12                    break; 13                } else { 14                    pre = current; 15                    current = current.next; 16                } 17            } 18        } else { 19            throw new NoSuchElementException(); 20        } 21    }</pre>	<pre>1 public void reverse() { 2     ListNode current = head; 3     head = null; 4     while (current != null) { 5         ListNode save = current; 6         current = current.next; 7         save.next = head; 8         head = save; 9     } 10 }</pre>
	<pre>1 public void additem (int item) { 2     head = new ListNode(item, head); 3     ++size; 4 }</pre>

Figure 5-1 : functions of example program : remove, reverse, additem

After our system starts, we set the animated section to produce one file of execution history. The Figure 5-2 shows the execution process.

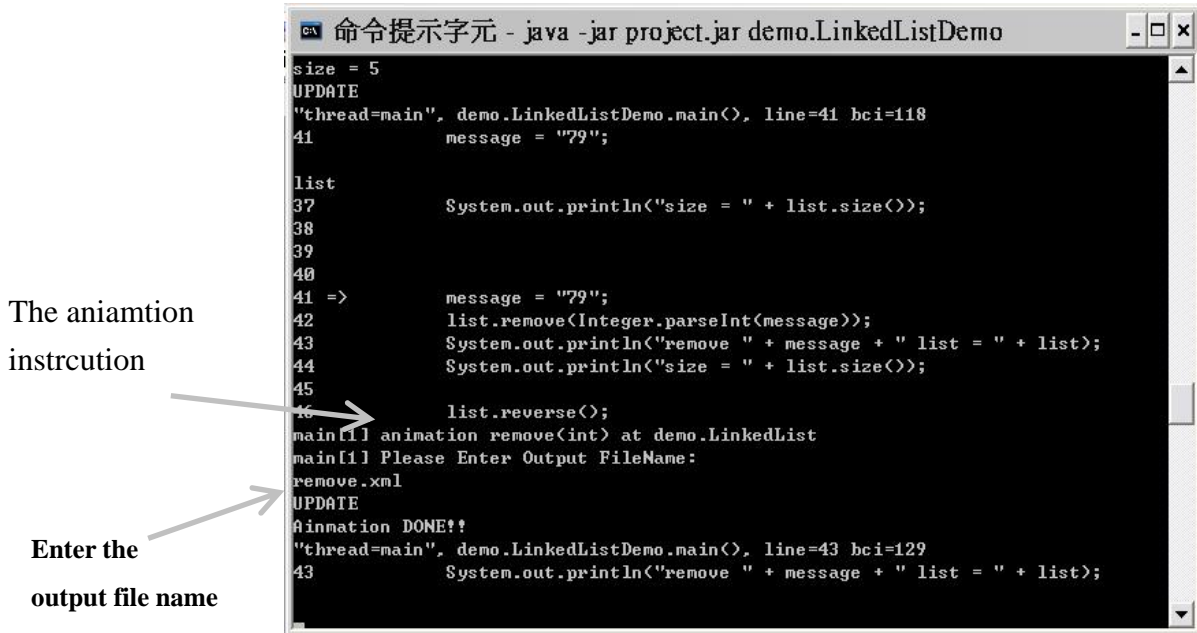
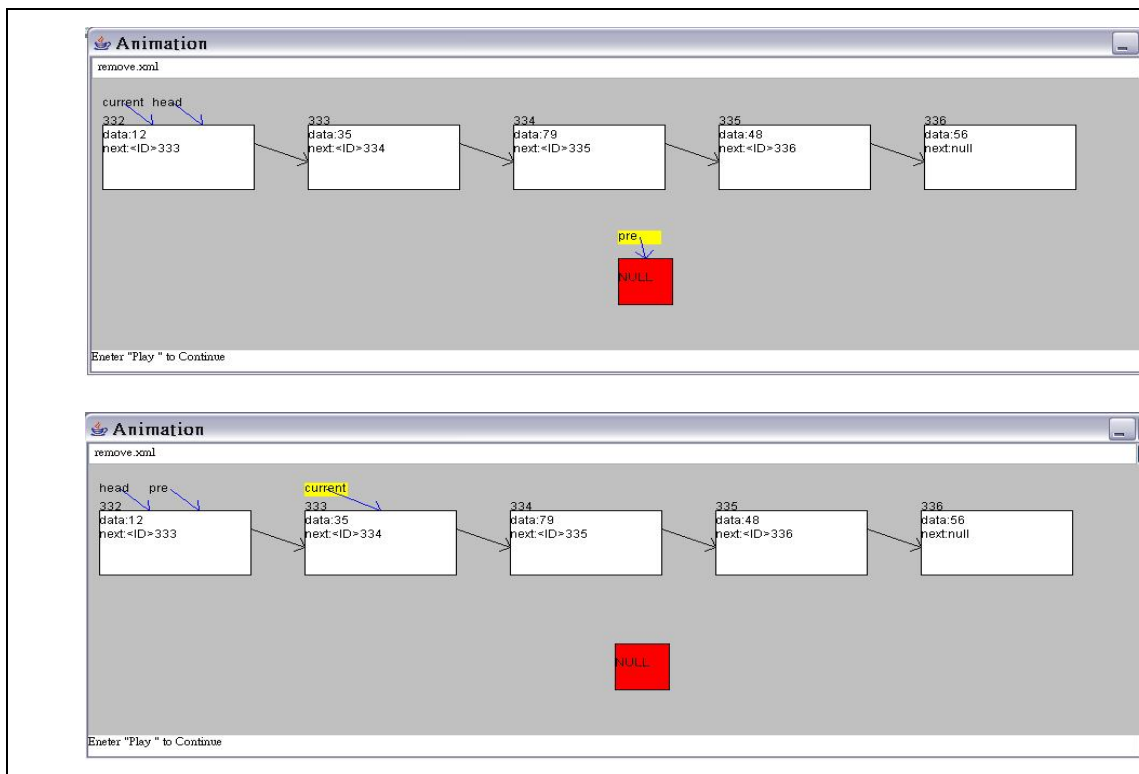


Figure 5-2 : set animated section and produce output file

After producing the execution history file, we execute list animation metaphor to animate the file. The following Figure 5-3 presents the part of animation process.



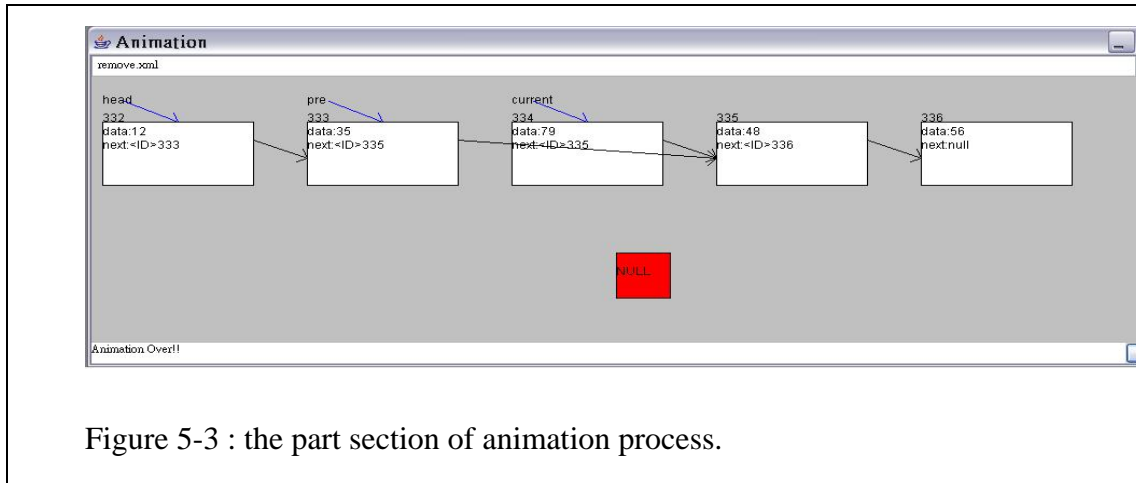


Figure 5-3 : the part section of animation process.

After the animation metaphor is implemented, we try to animate some algorithms with linked-list data structure. We discover that our system indeed support the necessary information to animation metaphor. We think that the approach can work.