Name: Ram chandu

Single linked list:

**package** list;

**public** **class** SingleLinkList {

**private** ListNode head;

**private** **static** **class** ListNode{

**private** **int** data;

**private** ListNode next;

**public** **void** ListNode(**int** data) {

**this**.data = data;

**this**.next = **null**;

}

}

}

Insert in single linked list:

Code::

**package** list;

**public** **class** SingleLinkList {

**private** ListNode head;

**private** **static** **class** ListNode{

**private** **int** data;

**private** ListNode next;

**public** ListNode(**int** data) {

**this**.data = data;

**this**.next = **null**;

}

}

**public** **void** display() {

ListNode current = head;

**while**(current != **null**) {

System.***out***.print(current.data + "-->");

current = current.next;

}

System.***out***.println("null");

}

**public** **static** **void** main(String args[]) {

SingleLinkList obj = **new** SingleLinkList();

obj.head = **new** ListNode(20);

ListNode second = **new** ListNode(1);

ListNode third = **new** ListNode(5);

ListNode forth = **new** ListNode(6);

//connecting node

obj.head.next = second;

second.next = third;

third.next = forth;

obj.display();

}

}

Out put is:: 20-->1-->5-->6-->null

INSERT DATA IN SINGLE LINKED LIST:

**package** list;

**public** **class** SingleLinkList {

**private** ListNode head;

**private** **static** **class** ListNode{

**private** **int** data;

**private** ListNode next;

**public** ListNode(**int** data) {

**this**.data = data;

**this**.next = **null**;

}

}

**public** **void** display() {

ListNode current = head;

**while**(current != **null**) {

System.***out***.print(current.data + "-->");

current = current.next;

}

System.***out***.println("null");

}

**public** **int** length() {

**if** (head == **null**) {

**return** 0;

}

**int** count = 0;

ListNode current = head;

**while**(current !=**null**) {

count++;

current = current.next;

}

**return** count;

}

**public** **void** insertFirst(**int** values) {

ListNode obj = **new** ListNode(values);

obj.next = head;

head = obj;

}

**public** **static** **void** main(String args[]) {

SingleLinkList obj = **new** SingleLinkList();

obj.insertFirst(7);

obj.insertFirst(5);;

obj.insertFirst(4);

obj.display();

}

}

Out put is:: 4-->5-->7-->null

Insert elements in last node::

**package** list;

**public** **class** SingleLinkList {

**private** ListNode head;

**private** **static** **class** ListNode{

**private** **int** data;

**private** ListNode next;

**public** ListNode(**int** data) {

**this**.data = data;

**this**.next = **null**;

}

}

**public** **void** display() {

ListNode current = head;

**while**(current != **null**) {

System.***out***.print(current.data + "-->");

current = current.next;

}

System.***out***.println("null");

}

**public** **int** length() {

**if** (head == **null**) {

**return** 0;

}

**int** count = 0;

ListNode current = head;

**while**(current !=**null**) {

count++;

current = current.next;

}

**return** count;

}

**public** **void** insertFirst(**int** values) {

ListNode obj = **new** ListNode(values);

obj.next = head;

head = obj;

}

**public** **void** insertLast(**int** value) {

ListNode obj = **new** ListNode(value);

**if**(head== **null**) {

head = obj;

**return**;

}

ListNode current =head;

**while**(**null** != current.next) {

current = current.next;

}

current.next = obj;

}

**public** **static** **void** main(String args[]) {

SingleLinkList obj = **new** SingleLinkList();

obj.insertLast(7);

obj.insertLast(5);;

obj.insertLast(4);

obj.display();

}

}

Out put is::

7-->5-->4-->null

Bubble sort:

1 Problem= -5,30,0,11,-2.

**package** shorting;

**public** **class** Boubel\_short {

**public** **static** **void** printArray(**int** arr[]) {

**for**(**int** i = 0 ;i<arr.length;i++) {

System.***out***.print(arr[i]+ " ");

}

}

**public** **static** **void** main(String args[]) {

**int** arr[] = {-5,30,0,11,-2};

**for**(**int** i = 0; i<arr.length -1; i++) {

**for**(**int** j = 0; j<arr.length-i-1;j++) {

**if**(arr[j]>arr[j+1]) {

**int** temp = arr[j];

arr[j] = arr[j+1];

arr[j+1]= temp;

}

}

}

*printArray*(arr);

}

}

Out put is::

-5 -2 0 11 30

2 problem= -11,0,20,11,-5

**package** shorting;

**public** **class** Boubel\_short {

**public** **static** **void** printArray(**int** arr[]) {

**for**(**int** i = 0 ;i<arr.length;i++) {

System.***out***.print(arr[i]+ " ");

}

}

**public** **static** **void** main(String args[]) {

**int** arr[] = {-11,0,20,11,-5};

**for**(**int** i = 0; i<arr.length -1; i++) {

**for**(**int** j = 0; j<arr.length-i-1;j++) {

**if**(arr[j]>arr[j+1]) {

**int** temp = arr[j];

arr[j] = arr[j+1];

arr[j+1]= temp;

}

}

}

*printArray*(arr);

}

}

Out put is:: -11 -5 0 11 20