/*The college library maintains a queue of books that need to be arranged on shelves. The books arrive

in batches and need to be inserted into a linked list in different ways depending on priority:

1. High-priority books (e.g., reference books) must be inserted at the front of the list.

2. Normal books are inserted at the end of the list.

3. Books requested by specific departments should be inserted at a given position (e.g., after

position 2 for Science, after position 4 for Engineering).

Functional Requirements:

1. Insert at Front – Add a high-priority book to the front of the list.

2. Insert at End – Add a regular book to the end of the list.

3. Insert at Position – Insert a book at a specific position in the list.

4. Display List – Show the current book queue.*/

```
import java.util.*;
class Node
{
   String data;
   Node next;
}
public class july4ht
{
   Node head;
   void insertAtFront(String value)
   {
      Node newNode=new Node();
      newNode.data=value;
      newNode.next=head;
      head=newNode;
   }
   void insertAtEnd(String value)
   {
      Node newNode=new Node();
```

```
    newNode.data=value;
    newNode.next=null;
    if(head==null)
    {
       head=newNode;

    }
    else
    {
       Node temp=head;
       while(temp.next!=null)
       {
          temp=temp.next;



       }
       temp.next=newNode;
    }
}
    void insertAtPosition(String value,int pos)
    {
       Node newNode=new Node();
       newNode.data=value;
       if(pos==0)
       {
          newNode.next=head;
          head=newNode;
          return;
       }
       Node temp=head;
       int index=0;
```

```
    while(temp!=null&&index<pos-1)
    {
        temp=temp.next;
        index++;

    }
    if(temp==null)
    {
        System.out.println("No position exist");
        return;
    }
    newNode.next=temp.next;
    temp.next=newNode;
}
void display()
{
    Node temp=head;
    while(temp!=null)
    {
        System.out.print(temp.data+"->");
        temp=temp.next;
    }

    System.out.println("The latest book is updated");
}
    public static void main(String[]args)
    {
        july4ht bl=new july4ht();
        Scanner sc=new Scanner(System.in);
        int choice;
        do
```

```
{
   System.out.println("\n1.First priority books\n2.LAst priority book\n3.New book\n4.Display\n5.exit");
   System.out.println("Enter the choice");
   choice=sc.nextInt();
   sc.nextLine();
   switch(choice)
{

case 1:
System.out.println("Enter the book to be added in front");
String book_front=sc.nextLine();
bl.insertAtFront(book_front);
break;

case 2:
System.out.println("Enter the number of books to be inserted at last");
int size=sc.nextInt();
sc.nextLine();
for (int i=0;i<size;i++)
{
   String book_end=sc.nextLine();
   bl.insertAtEnd(book_end);
}
break;
case 3:
System.out.println("Enter the new book's name");
String book_p=sc.nextLine();
System.out.println("Enter the new book's position");
int pos=sc.nextInt();
bl.insertAtPosition(book_p,pos);
```

```
        break;
        case 4:
        System.out.println("The book list is");
        bl.display();
        break;
        case 5:
           System.out.println("--------Exiting--------");
           break;
    }
       }while(choice!=5);
    }
}
```