Practical -: Create Linked List

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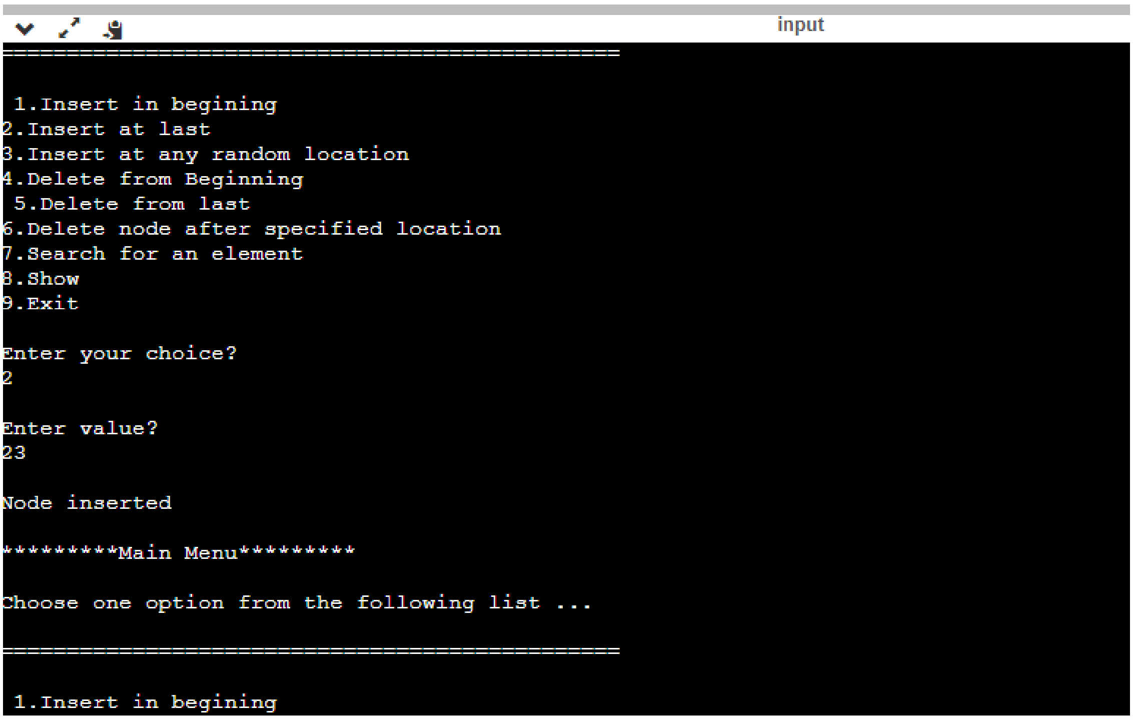
Code -:

```
#include<stdio.h>
#include<stdlib.h>
struct node
{
   int data;
   struct node *next;
};
struct node *head;

void beginsert ();
void lastinsert ();
void randominsert();
void display();

void main ()
{
   int choice =0;
   while(choice != 9)
   {
      printf("\n\n*********Main Menu*********\n");
      printf("\nChoose one option from the following list ...\n");
      printf("\n=========================================================\n");
      printf("\n 1.Insert in begining\n2.Insert at last\n3.Insert at any random
location\n4.Show\n5.Exit\n");
      printf("\nEnter your choice?\n");
      scanf("\n%d",&choice);
      switch(choice)
      {
         case 1:
         beginsert();
         break;
         case 2:
         lastinsert();
         break;
```

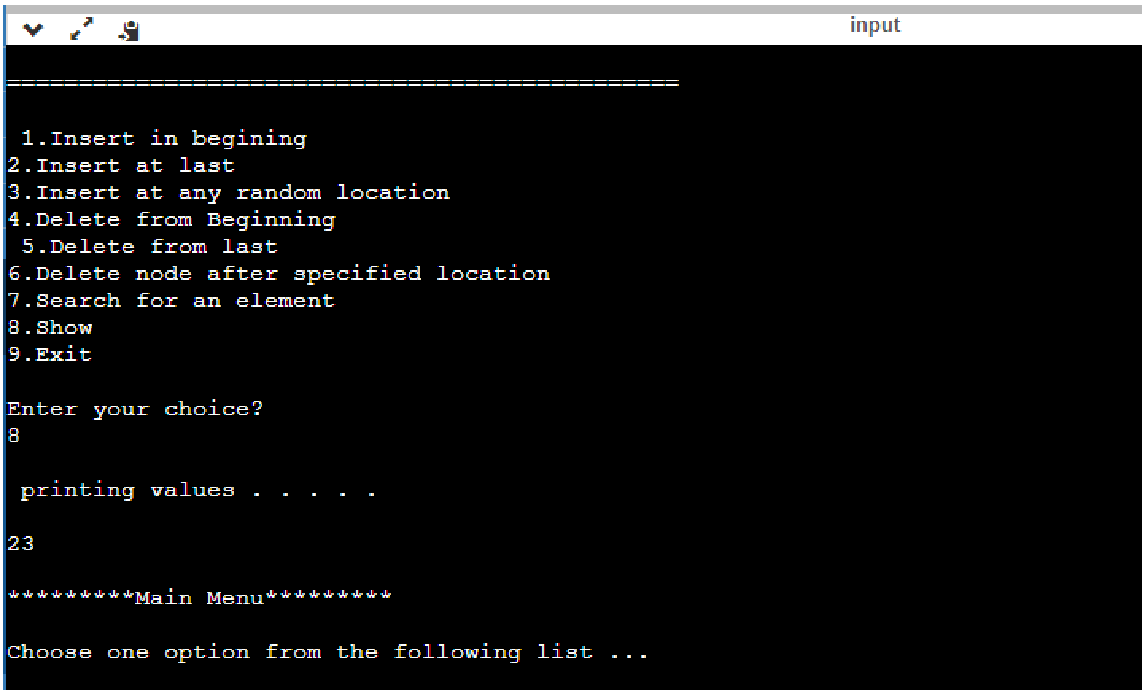
```
            case 3:
            randominsert();
            break;
            case 4:
            display();
            break;
            case 5:
            exit(0);
            break;
            default:
            printf("Please enter valid choice..");
        }
    }
}
void beginsert()
{
    struct node *ptr;
    int item;
    ptr = (struct node *) malloc(sizeof(struct node *));
    if(ptr == NULL)
    {
        printf("\nOVERFLOW");
    }
    else
    {
        printf("\nEnter value\n");
        scanf("%d",&item);
        ptr->data = item;
        ptr->next = head;
        head = ptr;
        printf("\nNode inserted");
    }

}
void lastinsert()
{
    struct node *ptr,*temp;
    int item;
    ptr = (struct node*)malloc(sizeof(struct node));
    if(ptr == NULL)
    {
        printf("\nOVERFLOW");
    }
    else
    {
        printf("\nEnter value?\n");
        scanf("%d",&item);
        ptr->data = item;
        if(head == NULL)
        {
            ptr -> next = NULL;
            head = ptr;
            printf("\nNode inserted");
        }
        else
        {
            temp = head;
            while (temp -> next != NULL)
            {
                temp = temp -> next;
            }
            temp->next = ptr;
            ptr->next = NULL;
            printf("\nNode inserted");

        }
    }
}
void randominsert()
{
    int i,loc,item;
    struct node *ptr, *temp;
    ptr = (struct node *) malloc (sizeof(struct node));
    if(ptr == NULL)
    {
        printf("\nOVERFLOW");
    }
    else
    {
        printf("\nEnter element value");
        scanf("%d",&item);
        ptr->data = item;
```

```
      printf("\nEnter the location after which you want to insert ");
      scanf("\n%d",&loc);
      temp=head;
      for(i=0;i<loc;i++)
      {
         temp = temp->next;
         if(temp == NULL)
         {
            printf("\ncan't insert\n");
            return;
         }

      }
      ptr ->next = temp ->next;
      temp ->next = ptr;
      printf("\nNode inserted");
   }
}

void display()
{
   struct node *ptr;
   ptr = head;
   if(ptr == NULL)
   {
      printf("Nothing to print");
   }
   else
   {
      printf("\n printing values . . . . .\n");
      while (ptr!=NULL)
      {
         printf("\n%d",ptr->data);
         ptr = ptr -> next;
      }
   }
}
```

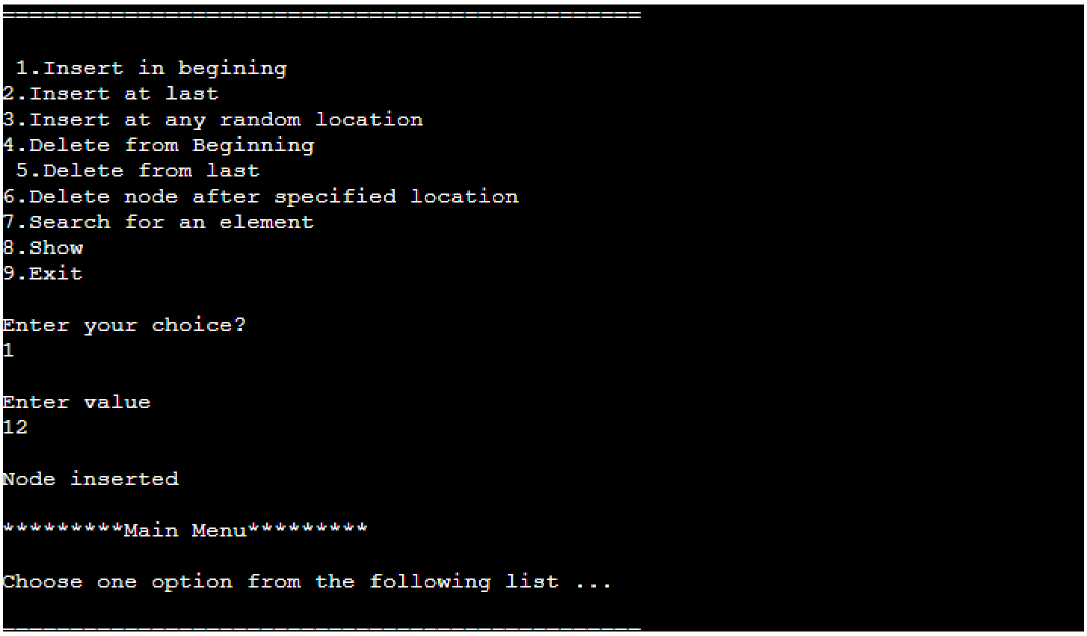
Output -:



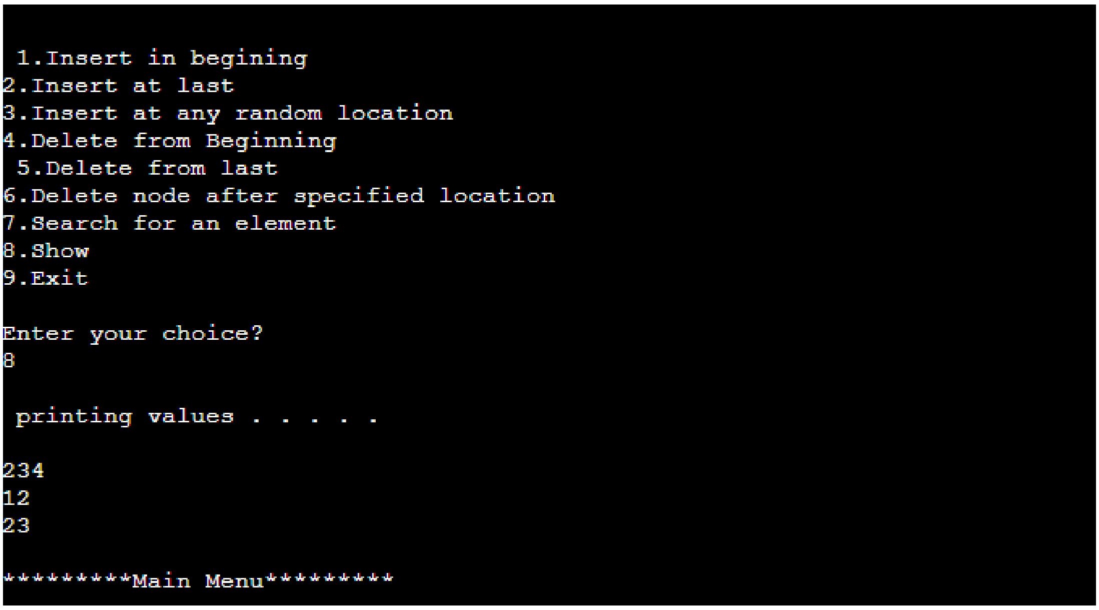
```
===============================================

 1.Insert in begining
2.Insert at last
3.Insert at any random location
4.Delete from Beginning
 5.Delete from last
6.Delete node after specified location
7.Search for an element
8.Show
9.Exit

Enter your choice?
2

Enter value?
23

Node inserted

*********Main Menu*********

Choose one option from the following list ...

===============================================

 1.Insert in begining
```



```
===============================================

 1.Insert in begining
2.Insert at last
3.Insert at any random location
4.Delete from Beginning
 5.Delete from last
6.Delete node after specified location
7.Search for an element
8.Show
9.Exit

Enter your choice?
8

 printing values . . . . .

23

*********Main Menu*********

Choose one option from the following list ...
```



```
===============================================

 1.Insert in begining
2.Insert at last
3.Insert at any random location
4.Delete from Beginning
 5.Delete from last
6.Delete node after specified location
7.Search for an element
8.Show
9.Exit

Enter your choice?
1

Enter value
12

Node inserted

*********Main Menu*********

Choose one option from the following list ...

===============================================
```



```

 1.Insert in begining
2.Insert at last
3.Insert at any random location
4.Delete from Beginning
 5.Delete from last
6.Delete node after specified location
7.Search for an element
8.Show
9.Exit

Enter your choice?
8

 printing values . . . . .

234
12
23

*********Main Menu*********
```