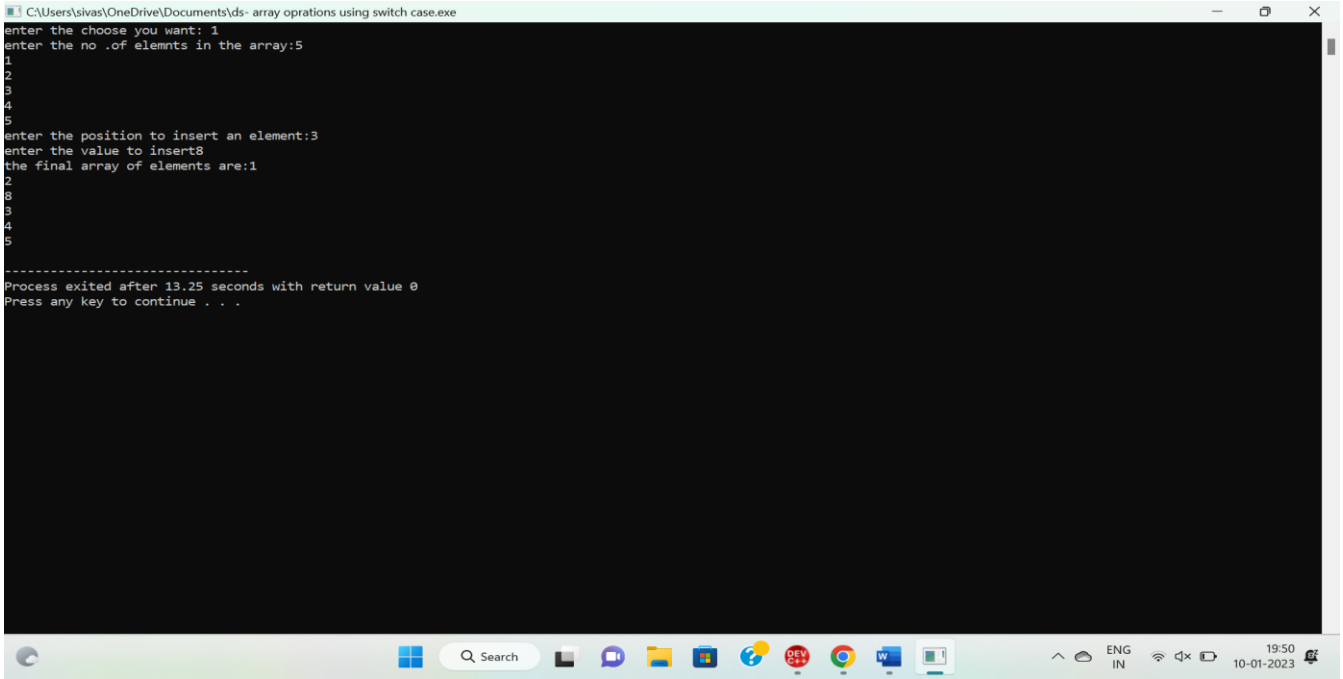
Array operations-insertion,deletion,searching:

```
#include<stdio.h>
int main()
{
        int a[50],i,n,p,val,num=0;
        printf("enter the choose you want: ");
        scanf("%d",&num);
        switch(num)
        {
        case 1:
        printf("enter the no .of elemnts in the array:");
        scanf("%d",&n);
        for(i=0;i<n;i++)
        {
                scanf("%d",&a[i]);
        }
        printf("enter the position to insert an element:");
        scanf("%d",&p);
        printf("enter the value to insert");
        scanf("%d",&val);
        for(i=i-1;i>=p-1;i--)
                a[i+1]=a[i];
                a[p-1]= val;
        printf("the final array of elements are:");
        for(i=0;i<=n;i++)
                printf("%d\n",a[i]);
        break;
        case 2:
  int arr[50];
  int pos, i, num;
```

```
    printf (" \n Enter the number of elements in an array: \n ");
    scanf (" %d", &num);

    printf (" \n Enter %d elements in array: \n ", num);
    for (i = 0; i < num; i++ )
    {
       scanf (" %d", &arr[i]);
    }
    printf( " Define the position of the array element where you want to delete: \n ");
    scanf (" %d", &pos);
    if (pos >= num+1)
    {
       printf (" \n Deletion is not possible in the array.");
    }
    else
    {
       for (i = pos - 1; i < num -1; i++)
       {
          arr[i] = arr[i+1];
       }
       printf (" \n The resultant array is: \n");
       for (i = 0; i< num - 1; i++)
       {
          printf (" %d \n", arr[i]);
       }
    }
    break;
    case 3:
    #define MAX_SIZE 100
  {
    int arr[MAX_SIZE];
```

```
int size, i, toSearch, found;
printf("Enter size of array: ");
scanf("%d", &size);
printf("Enter elements in array: ");
for(i=0; i<size; i++)
{
   scanf("%d", &arr[i]);
}

printf("\nEnter element to search: ");
scanf("%d", &toSearch);
found = 0;

for(i=0; i<size; i++)
{
   if(arr[i] == toSearch)
   {
      found = 1;
      break;
   }
}
if(found==1)
{
   printf("\n%d is found at position %d",toSearch,i+1);
}
else
{
   printf("\n%d is not found in the array",toSearch);
}

return 0;
```

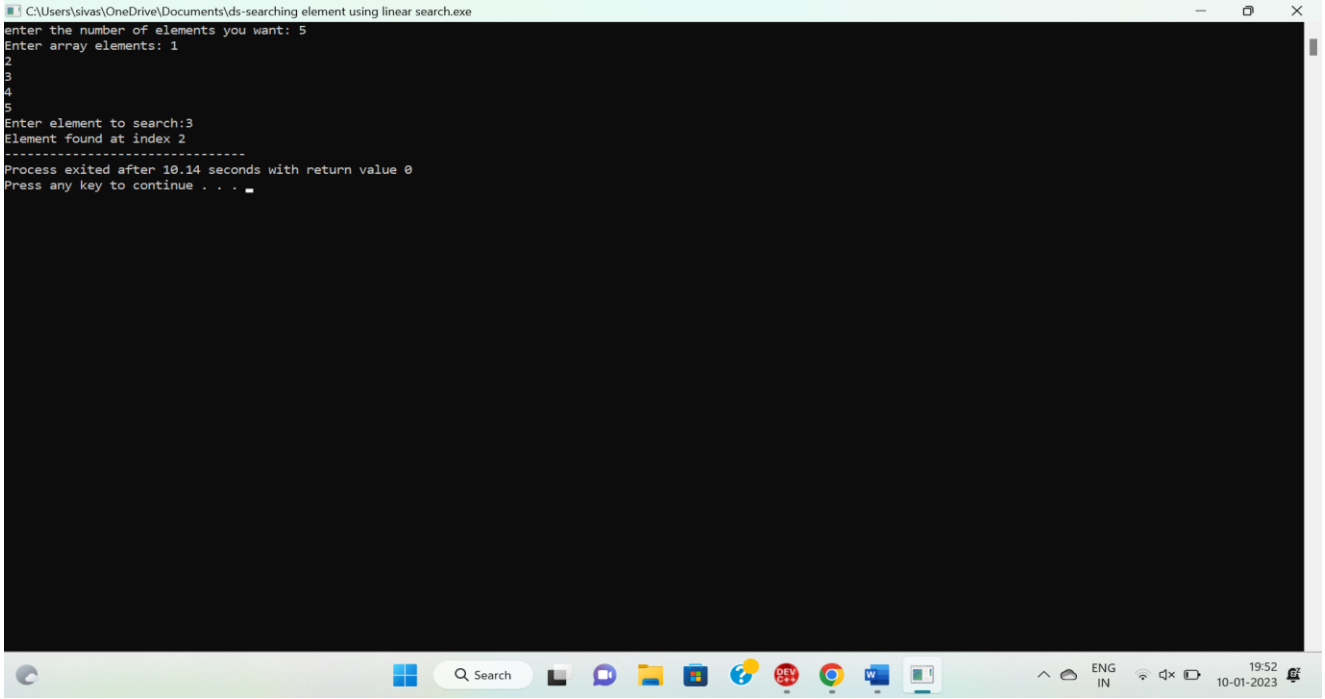
```
}
break;
default:
        printf("you entered invalid option");
        break;
}
return 0;
}
```



Searching a number using linear search:

```
#include<stdio.h>
int main()
{
        int a[20],i,x,n;
        printf("enter the number of elements you want: ");
        scanf("%d",&n);
        printf("Enter array elements: ");
        for(i=0;i<n;++i)
                scanf("%d",&a[i]);
        printf("Enter element to search:");
```

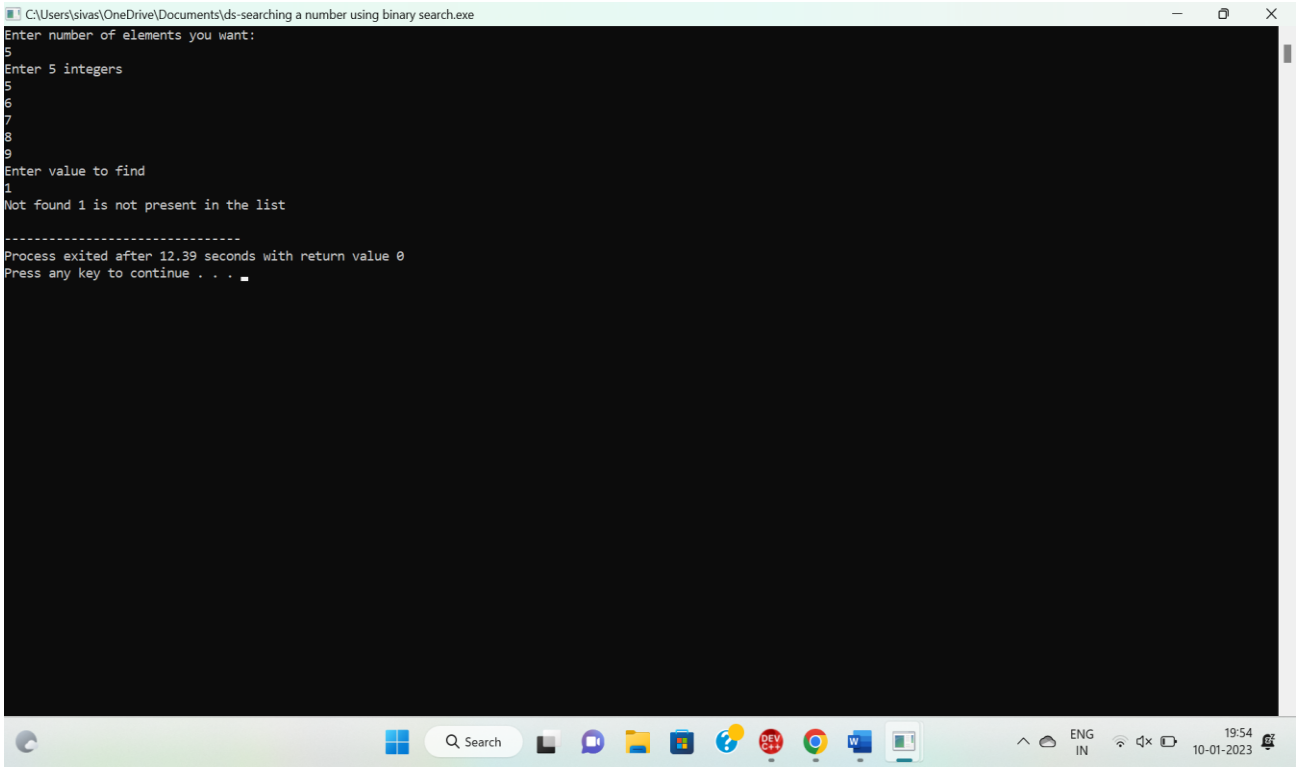
```
        scanf("%d",&x);
        for(i=0;i<n;++i)
                if(a[i]==x)
                        break;
        if(i<n)
                printf("Element found at index %d",i);
        else
                printf("Element not found");
        return 0;
}
```



Searching number using binary search:

```
#include<stdio.h>
int main()
{
int c,first,last,middle,n,search,array[100];
```

```
printf("Enter number of elements you want: \n");
scanf("%d",&n);
printf("Enter %d integers\n",n);
for (c=0 ;c<n;c++)
scanf("%d",&array[c]);
printf("Enter value to find\n");
scanf("%d",&search);
first = 0;
last = n-1;
middle = (first+last)/2;
while(first<=last)
{
   if (array[middle]<search)
      first = middle + 1;
   else if (array[middle] == search )
   {
      printf("%d found at location %d.\n", search, middle+1);
      break;
   }
   else
      last = middle-1;
      middle = (first+last)/2;
   }
   if ( first>last )
      printf("Not found %d is not present in the list\n", search);
   return 0;
}
```

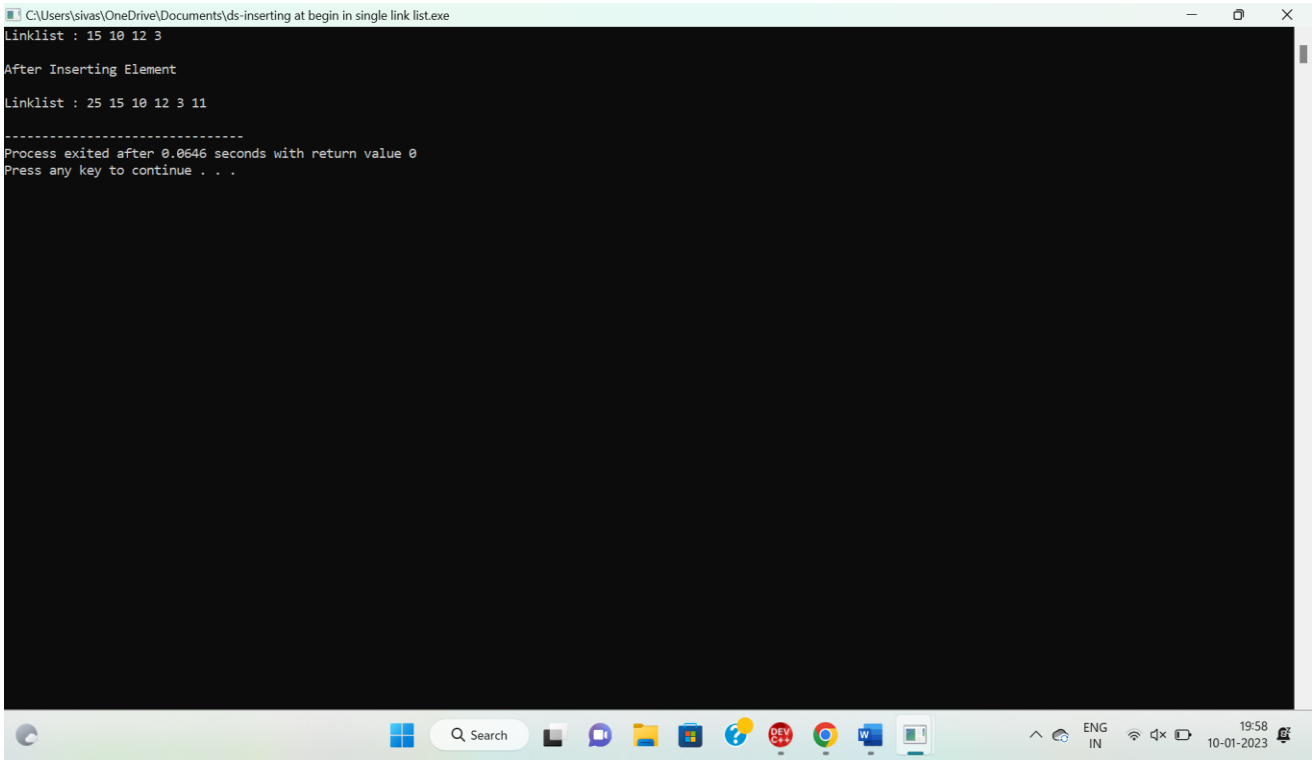


Inserting element at begin in single link list:

```
#include<stdio.h>

#include<stdlib.h>

struct Node

{

   int data;

   struct Node *next;

};

void insertStart(struct Node** head, int data){

   struct Node* newNode = (struct Node*) malloc(sizeof(struct Node));

   newNode->data = data;

   newNode->next = *head;

   *head = newNode;

}

void insertLast(struct Node** head, int data){

   struct Node* newNode = (struct Node*) malloc(sizeof(struct Node));

   newNode->data = data;
```

```
    newNode->next = NULL;
    if(*head==NULL)
            {
        *head = newNode;
        return;
    }
    struct Node* temp = *head;
    while(temp->next!=NULL)
        temp = temp->next;
    temp->next = newNode;
}
void display(struct Node* node)
{
    while(node!=NULL){
        printf("%d ",node->data);
        node = node->next;
    }
    printf("\n");
}
int main()
{
    struct Node* head = NULL;
    struct Node* node2 = NULL;
    struct Node* node3 = NULL;
    struct Node* node4 = NULL;
    head =  (struct Node*)malloc(sizeof(struct Node));
    node2 = (struct Node*)malloc(sizeof(struct Node));
    node3 = (struct Node*)malloc(sizeof(struct Node));
    node4 = (struct Node*)malloc(sizeof(struct Node));
    head->data = 15;
    head->next = node2;
```

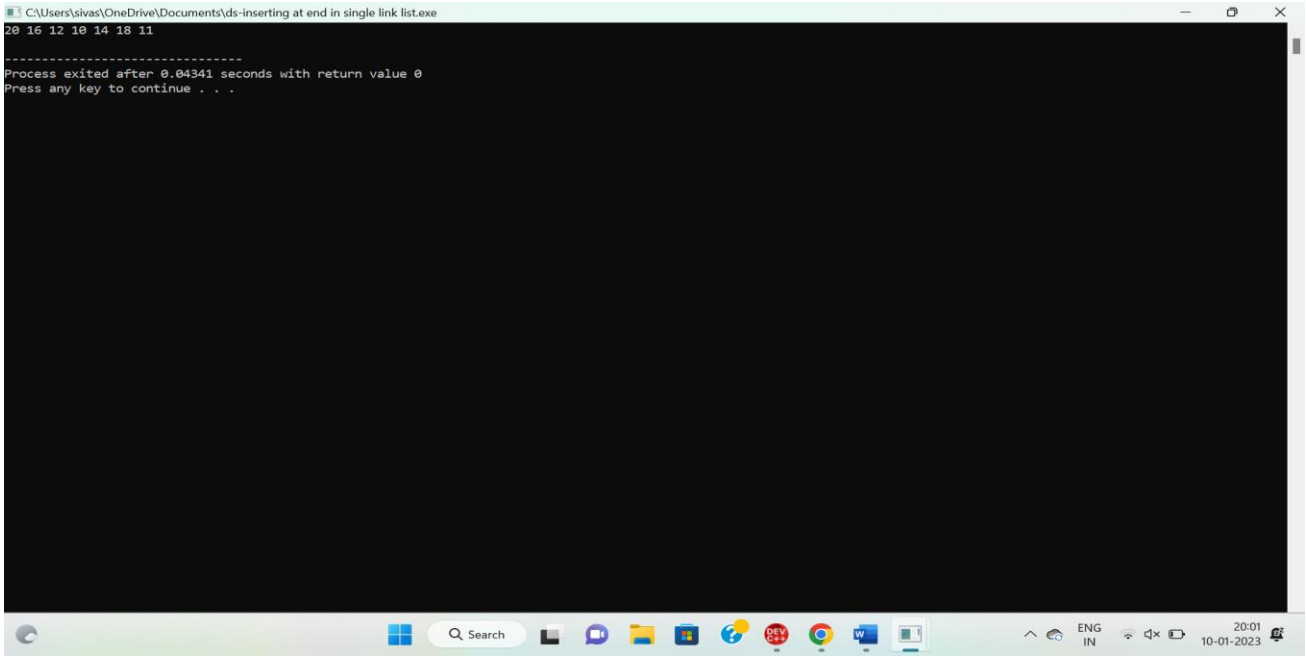
```
    node2->data = 10;
    node2->next = node3;
    node3->data = 12;
    node3->next = node4;
    node4->data = 3;
    node4->next = NULL;
    printf("Linklist : ");
    display(head);
    insertStart(&head,25);
    insertLast(&head,11);
    printf("\nAfter Inserting Element\n");
    printf("\nLinklist : ");
    display(head);
    return 0;
}
```



Inserting a element at end in single link list:

```
#include<stdio.h>
#include<stdlib.h>
struct Node{
   int data;
   struct Node *next;
};
void insertStart(struct Node** head, int data){

   struct Node* newNode = (struct Node*) malloc(sizeof(struct Node));

   newNode->data = data;
   newNode->next = *head;
   *head = newNode;
}
void insertLast(struct Node** head, int data){
   struct Node* newNode = (struct Node*) malloc(sizeof(struct Node));
   newNode->data = data;
   newNode->next = NULL;
   if(*head==NULL){
      *head = newNode;
      return;
   }
   struct Node* temp = *head;

   while(temp->next!=NULL)
      temp = temp->next;

   temp->next = newNode;
}
```

```
void display(struct Node* node){
    while(node!=NULL){
        printf("%d ",node->data);
        node = node->next;
    }
    printf("\n");
}
int main()
{
    struct Node* head = NULL;
    insertStart(&head,12);
    insertStart(&head,16);
    insertStart(&head,20);
    insertLast(&head,10);
    insertLast(&head,14);
    insertLast(&head,18);
    insertLast(&head,11);
    display(head);
    return 0;
}
```

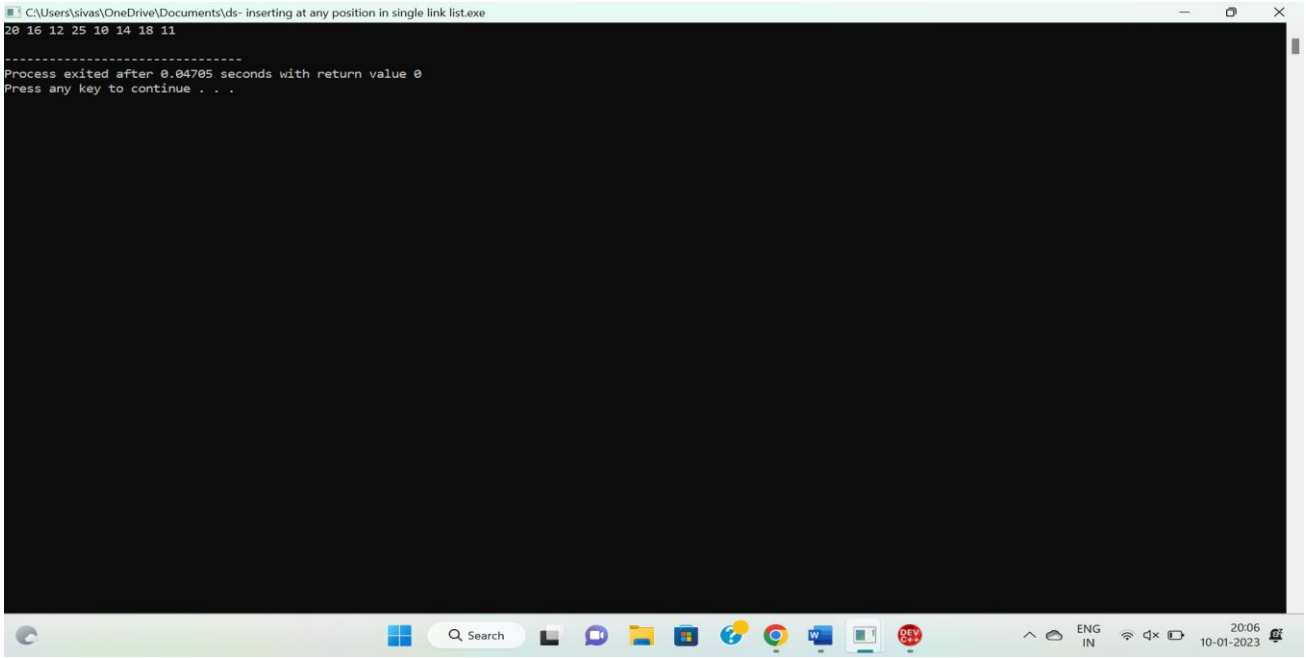


Inserting element at any position in single link list:

```
#include<stdio.h>
#include<stdlib.h>
struct Node{
   int data;
   struct Node *next;
};
int calcSize(struct Node* node){
   int size=0;

   while(node!=NULL){
      node = node->next;
      size++;
   }
   return size;
}
void insertPosition(int pos, int data, struct Node** head)
{
   int size = calcSize(*head);
   if(pos < 1 || size < pos)
   {
      printf("Can't insert, %d is not a valid position\n",pos);
   }
   else
   {
      struct Node* temp = *head;
      struct Node* newNode = (struct Node*)
      malloc(sizeof(struct Node));
      newNode->data = data;
      newNode->next = NULL;
```

```
        while(--pos)
        {
            temp=temp->next;
        }
        newNode->next= temp->next;
        temp->next = newNode;
    }
}
void insertStart(struct Node** head, int data){

    struct Node* newNode = (struct Node*) malloc(sizeof(struct Node));
    newNode->data = data;
    newNode->next = *head;
    *head = newNode;
}
void insertLast(struct Node** head, int data){

    struct Node* newNode = (struct Node*) malloc(sizeof(struct Node));
    newNode->data = data;
    newNode->next = NULL;
    if(*head==NULL){
        *head = newNode;
        return;
    }
    struct Node* temp = *head;
    while(temp->next!=NULL)
        temp = temp->next;
    temp->next = newNode;
}
void display(struct Node* node){
```

```
    while(node!=NULL){
        printf("%d ",node->data);
        node = node->next;
    }
    printf("\n");
}
int main()
{
    struct Node* head = NULL;
    insertStart(&head,12);
    insertStart(&head,16);
    insertStart(&head,20);
    insertLast(&head,10);
    insertLast(&head,14);
    insertLast(&head,18);
    insertLast(&head,11);
    insertPosition(3,25,&head);
    display(head);
    return 0;
}
```



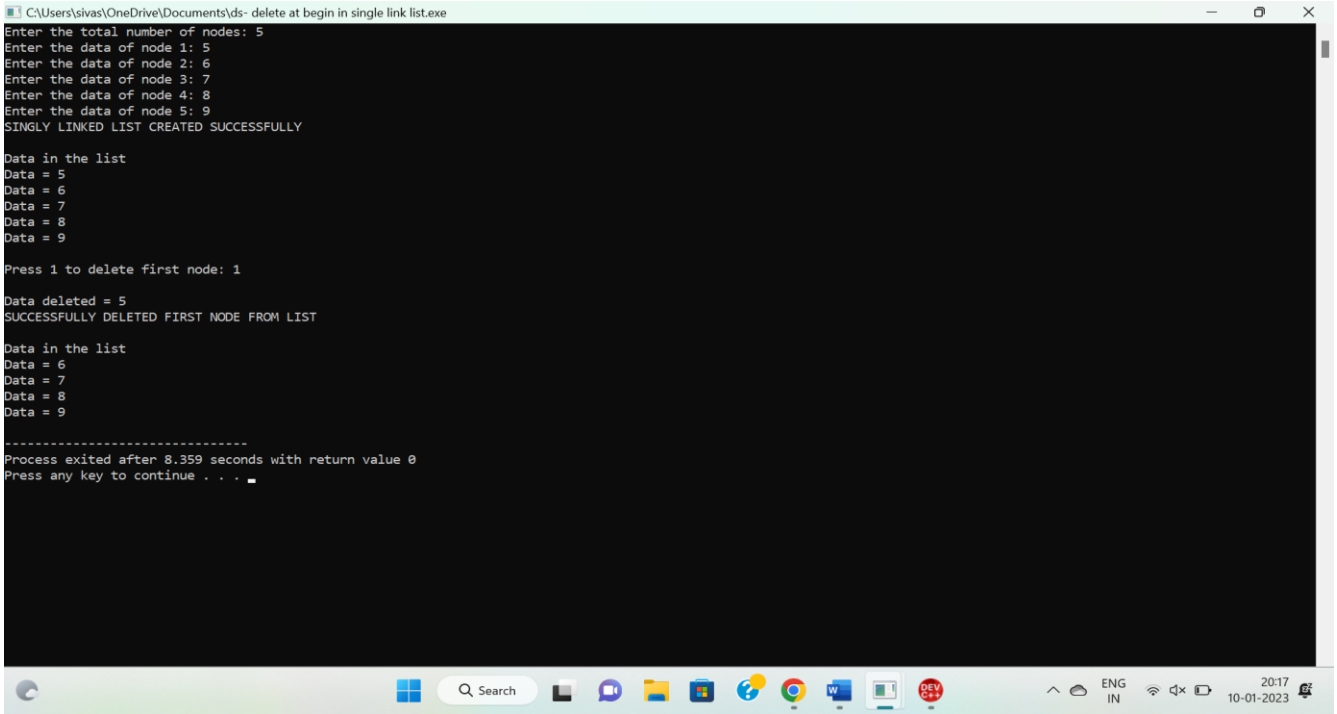
Delete at begin in single link list:

```
#include <stdio.h>
#include <stdlib.h>
struct node {
   int data;
   struct node *next;
}*head;
void createList(int n);
void deleteFirstNode();
void displayList();
int main()
{
   int n, choice;
   printf("Enter the total number of nodes: ");
   scanf("%d", &n);
   createList(n);
   printf("\nData in the list \n");
   displayList();
   printf("\nPress 1 to delete first node: ");
   scanf("%d", &choice);
   if(choice == 1)
      deleteFirstNode();
   printf("\nData in the list \n");
   displayList();
   return 0;
}
void createList(int n)
{
   struct node *newNode, *temp;
   int data, i;
```

```
head = (struct node *)malloc(sizeof(struct node));
if(head == NULL)
{
   printf("Unable to allocate memory.");
}
else
{
   printf("Enter the data of node 1: ");
   scanf("%d", &data);
   head->data = data;
   head->next = NULL;
   temp = head;
   for(i=2; i<=n; i++)
   {
      newNode = (struct node *)malloc(sizeof(struct node));
      if(newNode == NULL)
      {
         printf("Unable to allocate memory.");
         break;
      }
      else
      {
         printf("Enter the data of node %d: ", i);
         scanf("%d", &data);
         newNode->data = data;
         newNode->next = NULL;
         temp->next = newNode;
         temp = temp->next;
      }
   }
   printf("SINGLY LINKED LIST CREATED SUCCESSFULLY\n");
```

```
    }
}
void deleteFirstNode()
{
    struct node *toDelete;
    if(head == NULL)
    {
        printf("List is already empty.");
    }
    else
    {
        toDelete = head;
        head = head->next;
        printf("\nData deleted = %d\n", toDelete->data);
        free(toDelete);
        printf("SUCCESSFULLY DELETED FIRST NODE FROM LIST\n");
    }
}
void displayList()
{
    struct node *temp;
    if(head == NULL)
    {
        printf("List is empty.");
    }
    else
    {
        temp = head;
        while(temp != NULL)
        {
            printf("Data = %d\n", temp->data);
```

```
        temp = temp->next;
      }
   }
}
```



Delete at end in single link list:

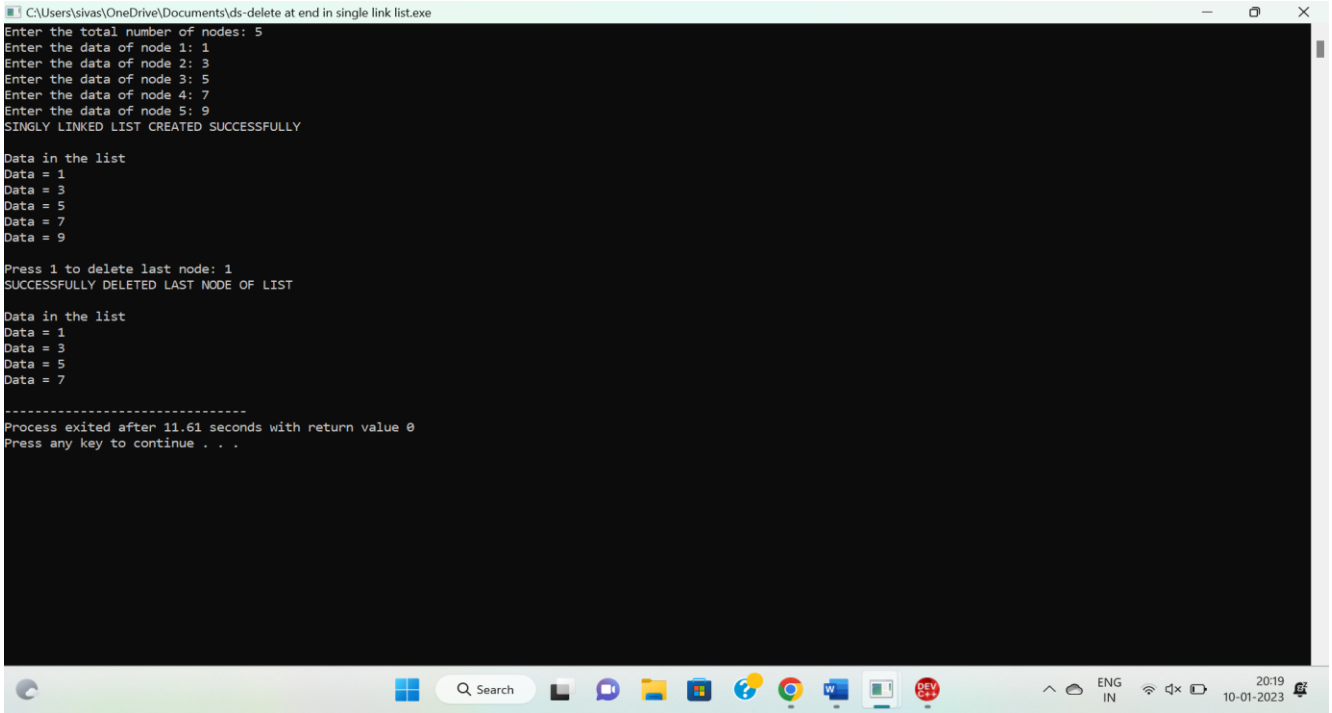
```
#include <stdio.h>
#include <stdlib.h>
struct node {
   int data;
   struct node *next;
}*head;
void createList(int n);
void deleteLastNode();
void displayList();
int main()
{
   int n, choice;
   printf("Enter the total number of nodes: ");
```

```
    scanf("%d", &n);
    createList(n);
    printf("\nData in the list \n");
    displayList();
    printf("\nPress 1 to delete last node: ");
    scanf("%d", &choice);
    if(choice == 1)
        deleteLastNode();
    printf("\nData in the list \n");
    displayList();
    return 0;
}
void createList(int n)
{
    struct node *newNode, *temp;
    int data, i;
    head = (struct node *)malloc(sizeof(struct node));
    if(head == NULL)
    {
        printf("Unable to allocate memory.");
    }
    else
    {
        printf("Enter the data of node 1: ");
        scanf("%d", &data);
        head->data = data;
        head->next = NULL;
        temp = head;
        for(i=2; i<=n; i++)
        {
            newNode = (struct node *)malloc(sizeof(struct node));
```

```
        if(newNode == NULL)
        {
            printf("Unable to allocate memory.");
            break;
        }
        else
        {
            printf("Enter the data of node %d: ", i);
            scanf("%d", &data);

            newNode->data = data;
            newNode->next = NULL;

            temp->next = newNode;
            temp = temp->next;
        }
    }

    printf("SINGLY LINKED LIST CREATED SUCCESSFULLY\n");
  }
}
void deleteLastNode()
{
  struct node *toDelete, *secondLastNode;

  if(head == NULL)
  {
    printf("List is already empty.");
  }
  else
  {
```

```
        toDelete = head;
        secondLastNode = head;
        while(toDelete->next != NULL)
        {
            secondLastNode = toDelete;
            toDelete = toDelete->next;
        }
        if(toDelete == head)
        {
            head = NULL;
        }
        else
        {
            secondLastNode->next = NULL;
        }
        free(toDelete);
        printf("SUCCESSFULLY DELETED LAST NODE OF LIST\n");
    }
}
void displayList()
{
    struct node *temp;
    if(head == NULL)
    {
        printf("List is empty.");
    }
    else
    {
        temp = head;
        while(temp != NULL)
        {
```

```
        printf("Data = %d\n", temp->data);
        temp = temp->next;
      }
    }
}
```



Delete at any position in single link list:

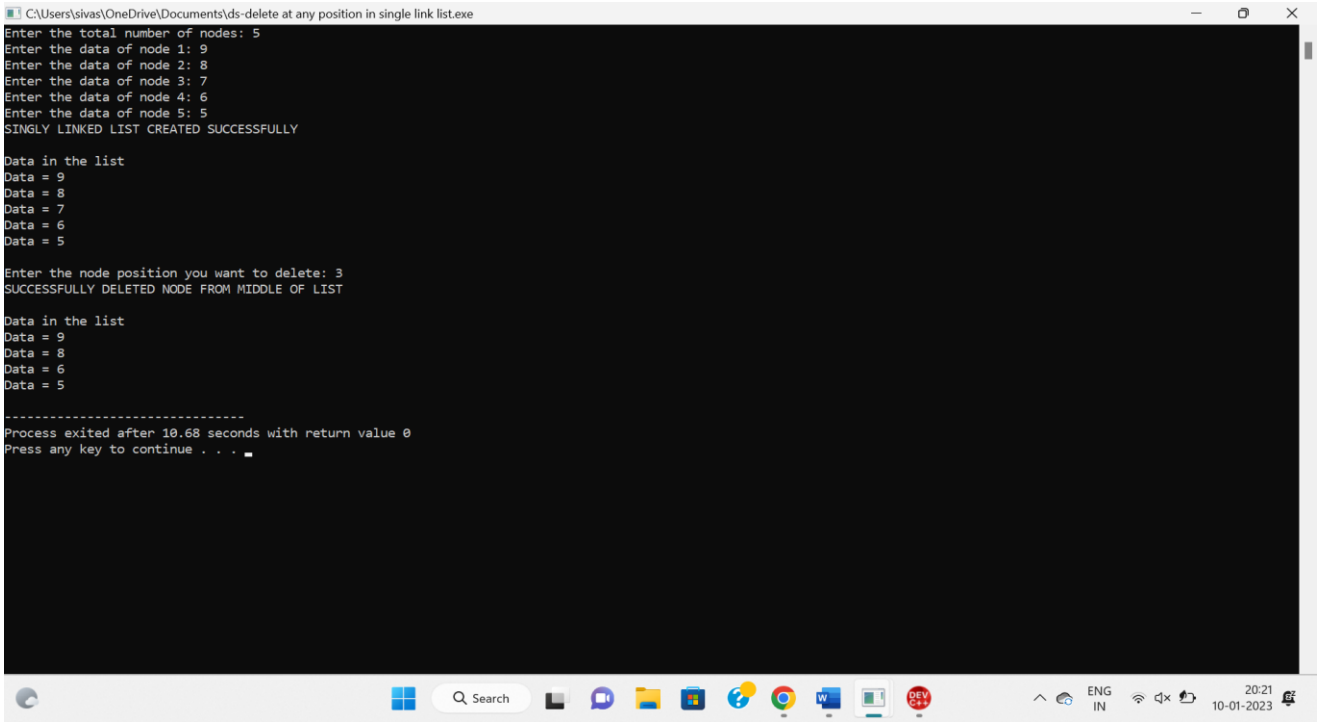
```
#include <stdio.h>
#include <stdlib.h>
struct node {
   int data;
   struct node *next;
} *head;
void createList(int n);
void deleteMiddleNode(int position);
void displayList();
int main()
{
   int n, position;
```

```
    printf("Enter the total number of nodes: ");
    scanf("%d", &n);
    createList(n);
    printf("\nData in the list \n");
    displayList();
    printf("\nEnter the node position you want to delete: ");
    scanf("%d", &position);
    deleteMiddleNode(position);
    printf("\nData in the list \n");
    displayList();
    return 0;
}
void createList(int n)
{
    struct node *newNode, *temp;
    int data, i;
    head = (struct node *)malloc(sizeof(struct node));
    if(head == NULL)
    {
        printf("Unable to allocate memory.");
    }
    else
    {
        printf("Enter the data of node 1: ");
        scanf("%d", &data);
        head->data = data; // Link the data field with data
        head->next = NULL; // Link the address field to NULL
        temp = head;
        for(i=2; i<=n; i++)
        {
            newNode = (struct node *)malloc(sizeof(struct node));
```

```
        if(newNode == NULL)
        {
            printf("Unable to allocate memory.");
            break;
        }
        else
        {
            printf("Enter the data of node %d: ", i);
            scanf("%d", &data);
            newNode->data = data;
            newNode->next = NULL;
            temp->next = newNode;
            temp = temp->next;
        }
    }
    printf("SINGLY LINKED LIST CREATED SUCCESSFULLY\n");
  }
}
void deleteMiddleNode(int position)
{
  int i;
  struct node *toDelete, *prevNode;
  if(head == NULL)
  {
    printf("List is already empty.");
  }
  else
  {
    toDelete = head;
    prevNode = head;
    for(i=2; i<=position; i++)
```

```
        {
            prevNode = toDelete;
            toDelete = toDelete->next;
            if(toDelete == NULL)
                break;
        }
        if(toDelete != NULL)
        {
            if(toDelete == head)
                head = head->next;
            prevNode->next = toDelete->next;
            toDelete->next = NULL;
            free(toDelete);
            printf("SUCCESSFULLY DELETED NODE FROM MIDDLE OF LIST\n");
        }
        else
        {
            printf("Invalid position unable to delete.");
        }
    }
}
void displayList()
{
    struct node *temp;
    if(head == NULL)
    {
        printf("List is empty.");
    }
    else
    {
        temp = head;
```

```
        while(temp != NULL)
        {
            printf("Data = %d\n", temp->data);
            temp = temp->next;
        }
    }
}
```



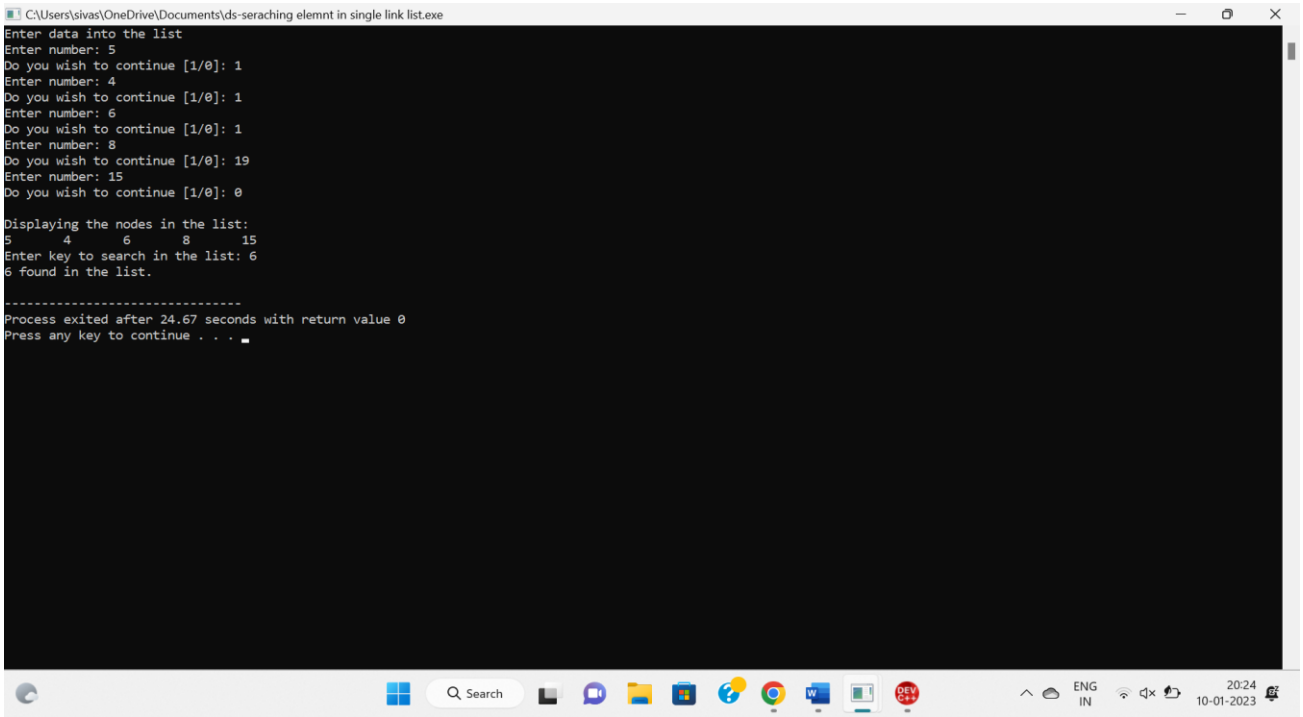
Searching element in single link list:

```
#include <stdio.h>
#include <stdlib.h>
struct node
{
    int num;
    struct node *next;
};
void create(struct node **);
int search(struct node *, int);
void release(struct node **);
```

```
void display(struct node *);
int main()
{
   struct node *p = NULL;
   int key, result;
   printf("Enter data into the list\n");
   create(&p);
   printf("Displaying the nodes in the list:\n");
   display(p);
   printf("Enter key to search in the list: ");
   scanf("%d", &key);
   result = search(p, key);
   if (result)
   {
      printf("%d found in the list.\n", key);
   }
   else
   {
      printf("%d not found in the list.\n", key);
   }
   release(&p);
   return 0;
}
int search(struct node *head, int key)
{
   while (head != NULL)
   {
      if (head->num == key)
      {
         return 1;
      }
```

```
        head = head->next;
    }
    return 0;
}
void create(struct node **head)
{
    int c, ch;
    struct node *temp, *rear;
    do
    {
        printf("Enter number: ");
        scanf("%d", &c);
        temp = (struct node *)malloc(sizeof(struct node));
        temp->num = c;
        temp->next = NULL;
        if (*head == NULL)
        {
            *head = temp;
        }
        else
        {
            rear->next = temp;
        }
        rear = temp;
        printf("Do you wish to continue [1/0]: ");
        scanf("%d", &ch);
    } while (ch != 0);
    printf("\n");
}

void display(struct node *p)
```

```
{
    while (p != NULL)
    {
        printf("%d\t", p->num);
        p = p->next;
    }
    printf("\n");
}
void release(struct node **head)
{
    struct node *temp = *head;
    *head = (*head)->next;
    while ((*head) != NULL)
    {
        free(temp);
        temp = *head;
        (*head) = (*head)->next;
    }
}
```

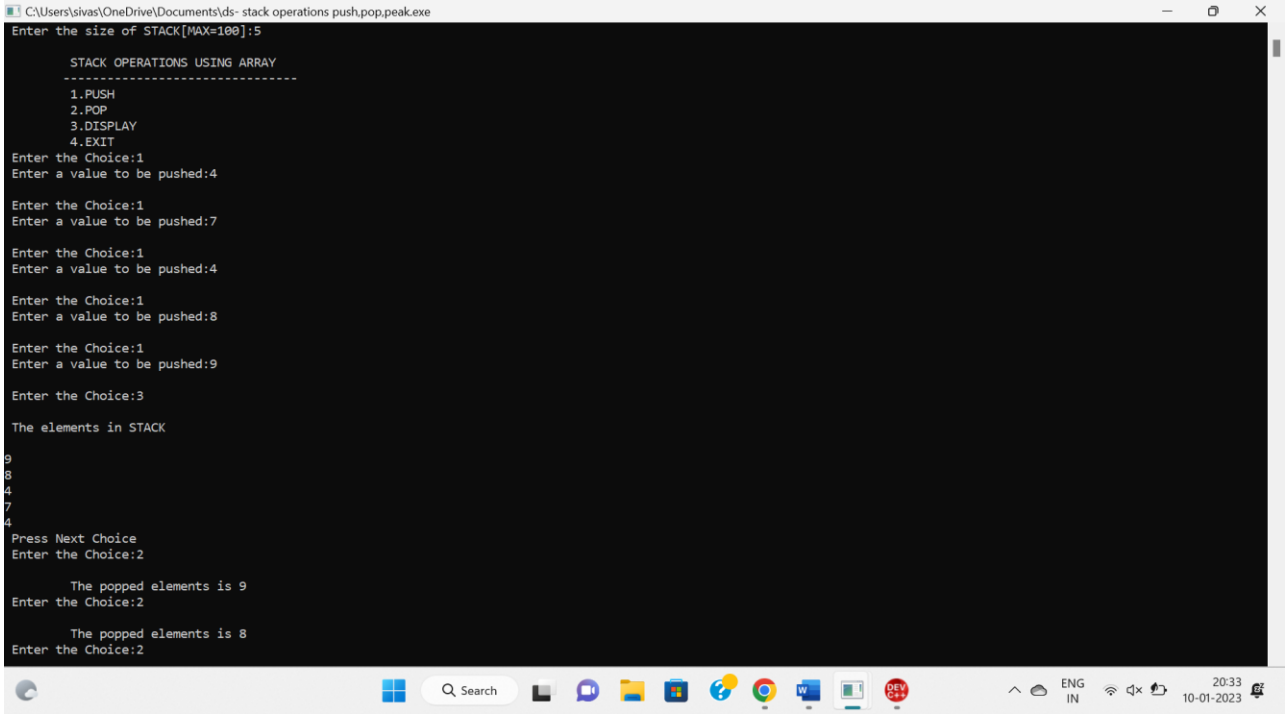


Implement stack operations :

```
#include<stdio.h>
int stack[100],choice,n,top,x,i;
void push(void);
void pop(void);
void display(void);
int main()
{
   top=-1;
   printf("\n Enter the size of STACK[MAX=100]:");
   scanf("%d",&n);
   printf("\n\t STACK OPERATIONS USING ARRAY");
   printf("\n\t--------------------------------");
   printf("\n\t 1.PUSH\n\t 2.POP\n\t 3.DISPLAY\n\t 4.EXIT");
   do
   {
      printf("\n Enter the Choice:");
      scanf("%d",&choice);
      switch(choice)
      {
         case 1:
         {
            push();
            break;
         }
         case 2:
         {
            pop();
            break;
         }
```

```
        case 3:
        {
            display();
            break;
        }
        case 4:
        {
            printf("\n\t EXIT POINT ");
            break;
        }
        default:
        {
            printf ("\n\t Please Enter a Valid Choice(1/2/3/4)");
        }
      }
   }
   while(choice!=4);
   return 0;
}
void push()
{
   if(top>=n-1)
   {
      printf("\n\tSTACK is over flow");


   }
   else
   {
      printf(" Enter a value to be pushed:");
      scanf("%d",&x);
      top++;
```

```
        stack[top]=x;
    }
}
void pop()
{
    if(top<=-1)
    {
        printf("\n\t Stack is under flow");
    }
    else
    {
        printf("\n\t The popped elements is %d",stack[top]);
        top--;
    }
}
void display()
{
    if(top>=0)
    {
        printf("\n The elements in STACK \n");
        for(i=top; i>=0; i--)
            printf("\n%d",stack[i]);
        printf("\n Press Next Choice");
    }
    else
    {
        printf("\n The STACK is empty");
    }
}
```

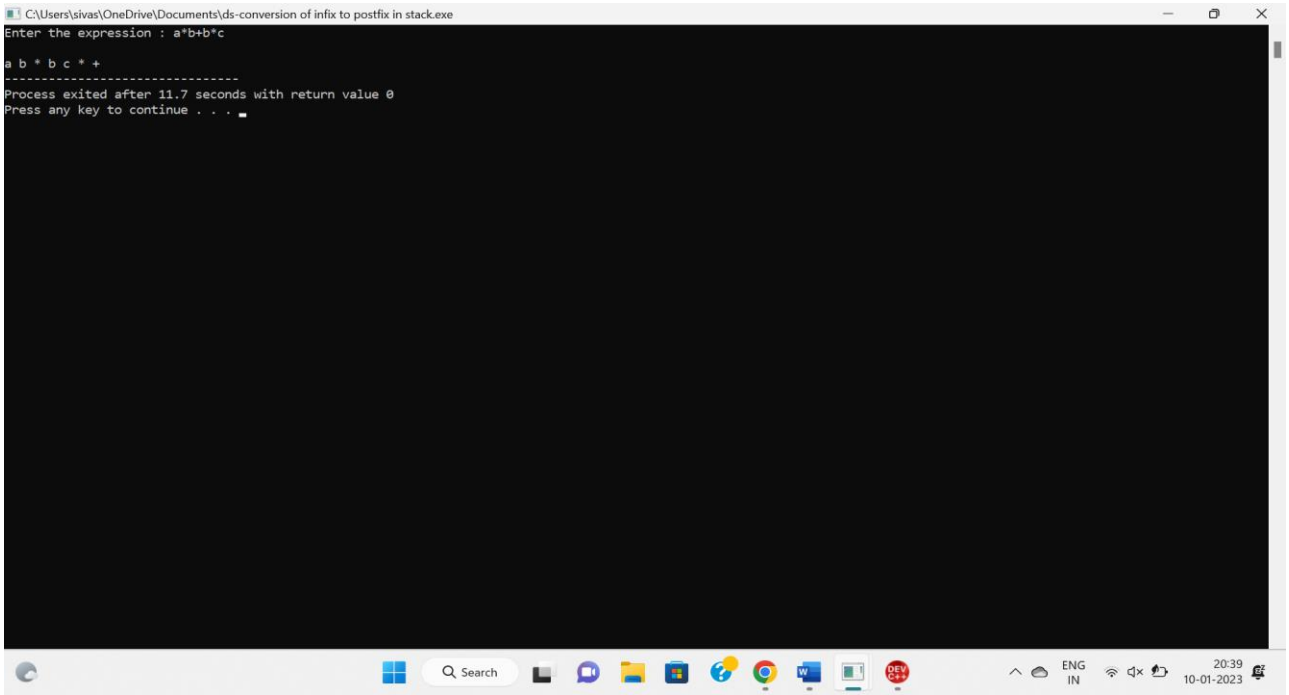


Conversion of infix to postfix expression:

```
#include<stdio.h>

#include<ctype.h>

char stack[100];

int top = -1;

void push(char x)

{

   stack[++top] = x;

}

char pop()

{

   if(top == -1)

      return -1;

   else

      return stack[top--];

}
```

```
int priority(char x)
{
   if(x == '(')
      return 0;
   if(x == '+' || x == '-')
      return 1;
   if(x == '*' || x == '/')
      return 2;
   return 0;
}
int main()
{
   char exp[100];
   char *e, x;
   printf("Enter the expression : ");
   scanf("%s",exp);
   printf("\n");
   e = exp;

   while(*e != '\0')
   {
      if(isalnum(*e))
         printf("%c ",*e);
      else if(*e == '(')
         push(*e);
      else if(*e == ')')
      {
         while((x = pop()) != '(')
            printf("%c ", x);
      }
      else
```

```
      {
         while(priority(stack[top]) >= priority(*e))
            printf("%c ",pop());
         push(*e);
      }
      e++;
   }
   while(top != -1)
   {
      printf("%c ",pop());
   }return 0;
}
```

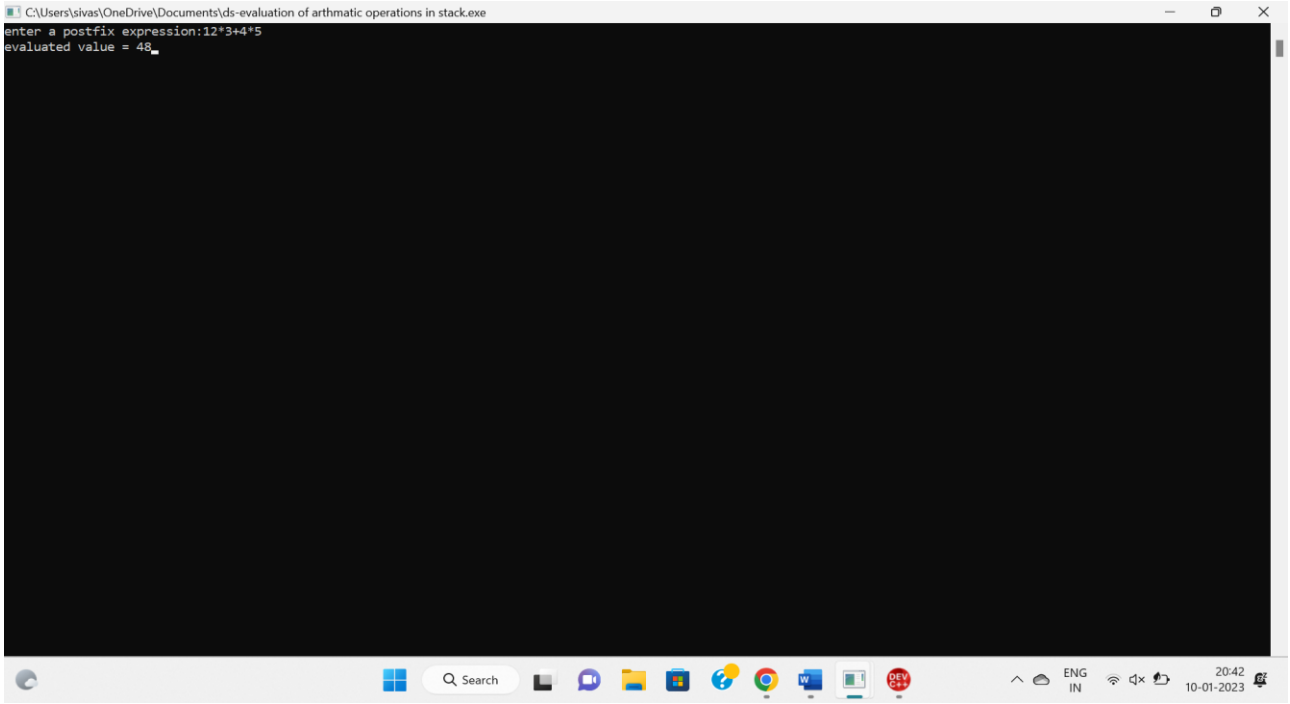


Evaluation of arthimatic operators:

```
#include<stdio.h>
#include<conio.h>
int top = -1, stack [100];
main ( ){
   char a[50], ch;
   int i,op1,op2,res,x;
```

```
  void push (int);
  int pop( );
  int eval (char, int, int);
  printf("enter a postfix expression:");
  gets (a);
  for(i=0; a[i]!='\0'; i++){
    ch = a[i];
    if (ch>='0' && ch<='9')
      push('0');
    else{
      op2 = pop ( );
      op1 = pop ( );
      res = eval (ch, op1, op2);
      push (res);
    }
  }
  x = pop ( );
  printf("evaluated value = %d", x);
  getch ( );
}
void push (int n){
  top++;
  stack [top] = n;
}
int pop ( ){
  int res ;
  res = stack [top];
  top--;
  return res;
}
int eval (char ch, int op1, int op2){
```

```
  switch (ch){
    case '+' : return (op1+op2);
    case '-' : return (op1-op2);
    case '*' : return (op1*op2);
    case '/' : return (op1/op2);
  }
  return 0;
}
```



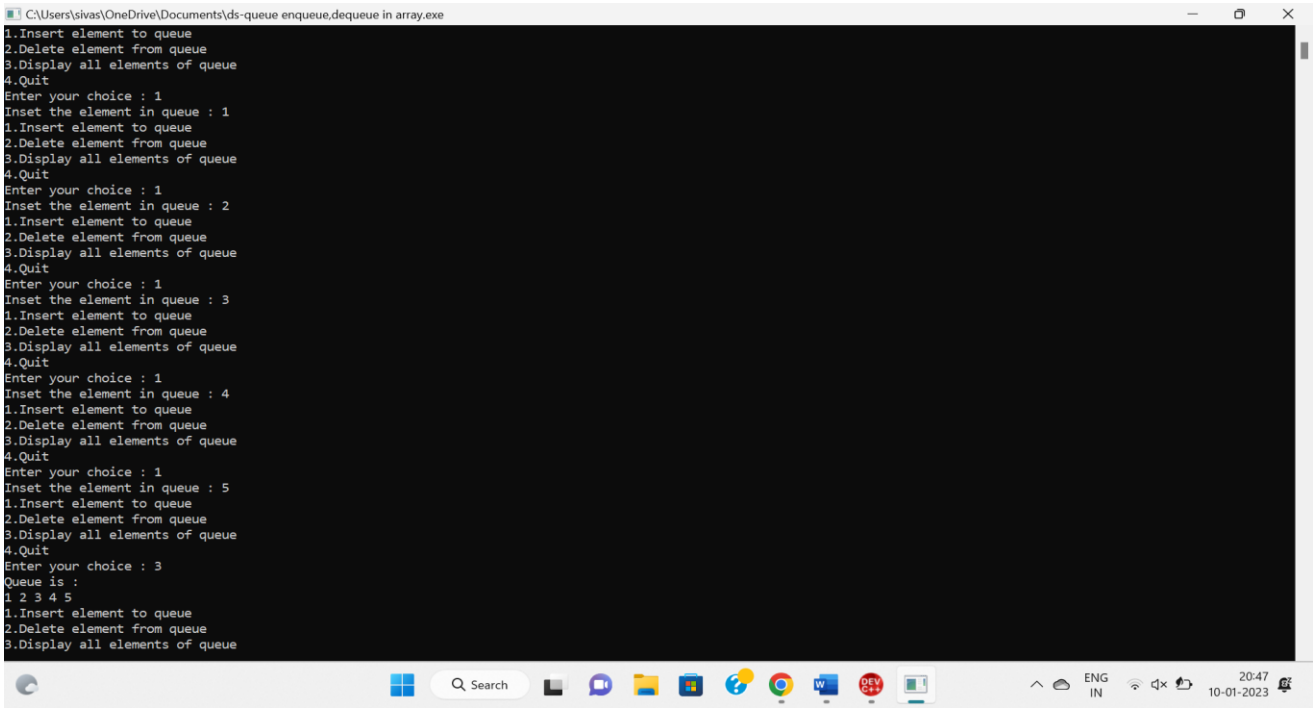
Queue -enqueue,dequeue in an array:

```
#include <stdio.h>
#include<conio.h>
#include<stdlib.h>
#define MAX 50
void insert();
void Delete();
void display();
int queue_array[MAX];
```

```
int rear = - 1;
int front = - 1;
main()
{
   int choice;
   while (1)
   {
      printf("1.Insert element to queue \n");
      printf("2.Delete element from queue \n");
      printf("3.Display all elements of queue \n");
      printf("4.Quit \n");
      printf("Enter your choice : ");
      scanf("%d", &choice);
      switch (choice)
      {
         case 1:
         insert();
         break;
         case 2:
         Delete();
         break;
         case 3:
         display();
         break;
         case 4:
         exit(1);
         default:
         printf("Wrong choice \n");
      }
   }
}
```

```
void insert()
{
   int add_item;
   if (rear == MAX - 1)
   printf("Queue Overflow \n");
   else
   {
      if (front == - 1)
      /*If queue is initially empty */
      front = 0;
      printf("Inset the element in queue : ");
      scanf("%d", &add_item);
      rear = rear + 1;
      queue_array[rear] = add_item;
   }
}
void Delete()
{
   if (front == - 1 || front > rear)
   {
      printf("Queue Underflow \n");
      return ;
   }
   else
   {
      printf("Element deleted from queue is : %d\n", queue_array[front]);
      front = front + 1;
   }
}

void display()
```

```
{
    int i;
    if (front == - 1)
        printf("Queue is empty \n");
    else
    {
        printf("Queue is : \n");
        for (i = front; i <= rear; i++)
            printf("%d ", queue_array[i]);
        printf("\n");
    }
}
```



Queue-enqueue,dequeue in link list:

```
#include <stdio.h>
#include <stdlib.h>
struct node
{
    int info;
```

```
    struct node *ptr;
}*front,*rear,*temp,*front1;
int frontelement();
void enq(int data);
void deq();
void empty();
void display();
void create();
void queuesize();
int count = 0;
int main()
{
    int no,ch,e;
    printf("\n 1 - Enque");
    printf("\n 2 - Deque");
    printf("\n 3 - Front element");
    printf("\n 4 - Empty");
    printf("\n 5 - Exit");
    printf("\n 6 - Display");
    printf("\n 7 - Queue size");
    create();
    while (1)
    {
        printf("\n Enter choice : ");
        scanf("%d", &ch);
        switch (ch)
        {
        case 1:
            printf("Enter data : ");
            scanf("%d", &no);
            enq(no);
```

```
            break;
        case 2:
            deq();
            break;
        case 3:
            e = frontelement();
            if (e != 0)
                printf("Front element : %d", e);
            else
                printf("\n No front element in Queue as queue is empty");
            break;
        case 4:
            empty();
            break;
        case 5:
            exit(0);
        case 6:
            display();
            break;
        case 7:
            queuesize();
            break;
        default:
            printf("Wrong choice, Please enter correct choice  ");
            break;
        }
    }
}
void create()
{
    front = rear = NULL;
```

```
}
void queuesize()
{
   printf("\n Queue size : %d", count);
}
void enq(int data)
{
   if (rear == NULL)
   {
      rear = (struct node *)malloc(1*sizeof(struct node));
      rear->ptr = NULL;
      rear->info = data;
      front = rear;
   }
   else
   {
      temp=(struct node *)malloc(1*sizeof(struct node));
      rear->ptr = temp;
      temp->info = data;
      temp->ptr = NULL;

      rear = temp;
   }
   count++;
}
void display()
{
   front1 = front;
   if ((front1 == NULL) && (rear == NULL))
   {
      printf("Queue is empty");
```

```
        return;
    }
    while (front1 != rear)
    {
        printf("%d ", front1->info);
        front1 = front1->ptr;
    }
    if (front1 == rear)
        printf("%d", front1->info);
}
void deq()
{
    front1 = front;
    if (front1 == NULL)
    {
        printf("\n Error: Trying to display elements from empty queue");
        return;
    }
    else
        if (front1->ptr != NULL)
        {
            front1 = front1->ptr;
            printf("\n Dequed value : %d", front->info);
            free(front);
            front = front1;
        }
        else
        {
            printf("\n Dequed value : %d", front->info);
            free(front);
            front = NULL;
```

```
        rear = NULL;
      }
      count--;
}
int frontelement()
{
   if ((front != NULL) && (rear != NULL))
      return(front->info);
   else
      return 0;
}
void empty()
{
    if ((front == NULL) && (rear == NULL))
      printf("\n Queue empty");
   else
     printf("Queue not empty");
}
```