Experiment-1.1

Write a program to implement following operations on a linear array:

1. **Read n elements and display**
2. **Insert a new element in the middle of an array.**
3. **Delete the first element of an array.**
4. **Find the location of a last element.**

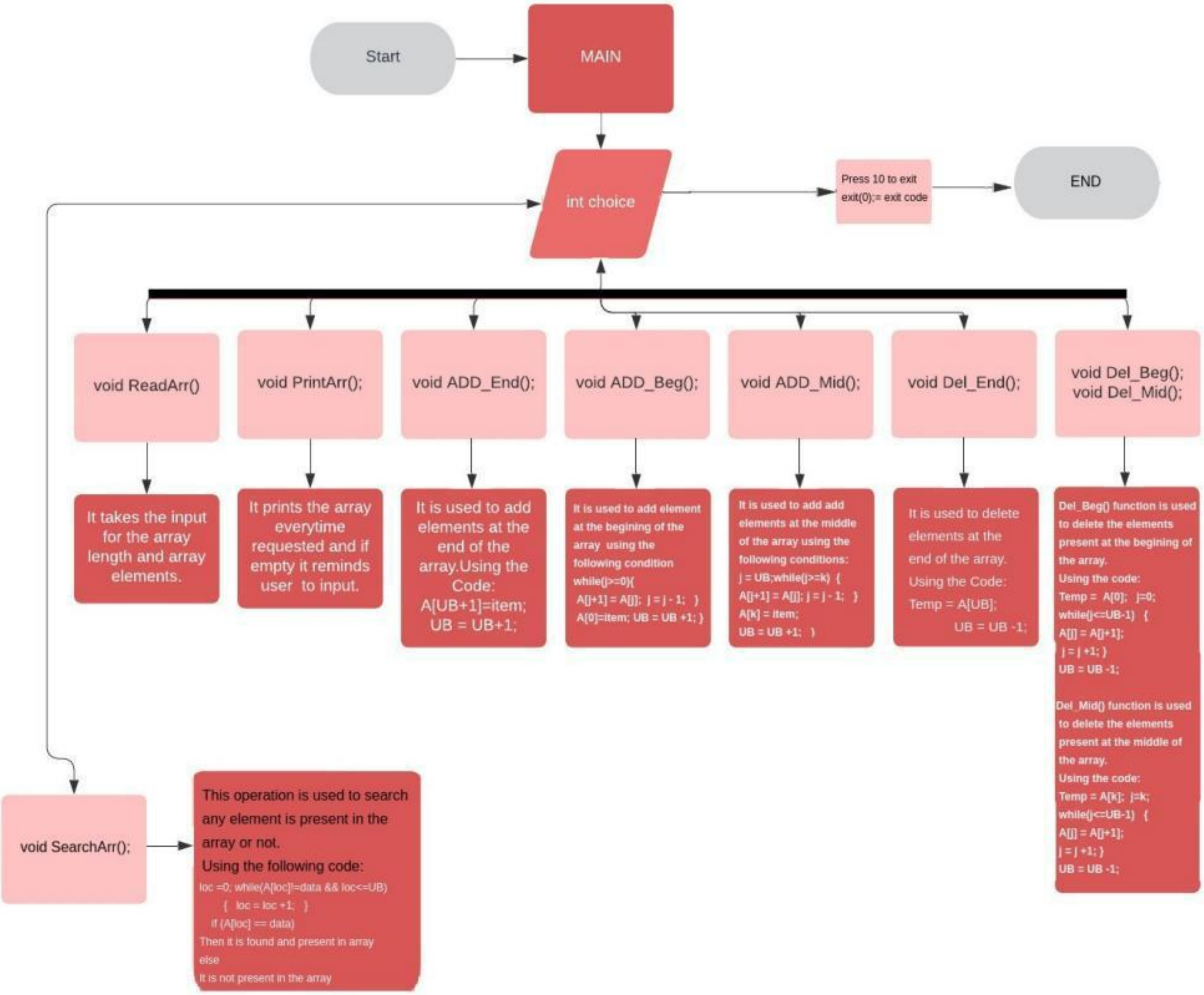
Student Name:-Neha Sharma	**UID:- 20BCS4576**
Branch:- Cse-Iot	**Section/Group:-A**
Semester:- 3rd	**Date of Performance:- 6/09/2021**
Subject Name:- DS lab	**Subject Code:-20CSP-236**

1. Aim/Overview of the practical:- Write a program to implement following operations on a linear array:

1. **Read n elements and display**
2. **Insert a new element in the middle of an array.**
3. **Delete the first element of an array.**
4. **Find the location of a last element.**

2. Task to be done:- Declare an array and perform various operations on it.

3. Algorithm/Flowchart:



4. Steps for experiment/practical:

```
#include <stdio.h>
#include <stdlib.h>

void ReadArr();
void PrintArr();
void ADD_End();
void Del_End();

int A[5],N=5, LB=0, UB=-1;
int main()
{
 int choice;
 while(1)
 {
  printf("\n - : Program for Array : -\n");
  printf("\n1. ReadArray");
```

```
printf("\n2. PrintArray");
printf("\n3. Insert new element at middle");
printf("\n4. Del_End");
printf("\n5. Exit");
printf("\nEnter your choice = ");
scanf("%d",&choice);
switch(choice)
{
  case 1:
      {
          ReadArr();
          break;
      }
  case 2:
      {
          PrintArr();
          break;
      }
  case 3:
```

```
        {
            ADD_End();
            break;
        }
    case 4:
        {
            Del_End();
            break;
        }
    case 5:
        {
            exit(0);
        }
  }
 }
    return 0;
}

void ReadArr()
```

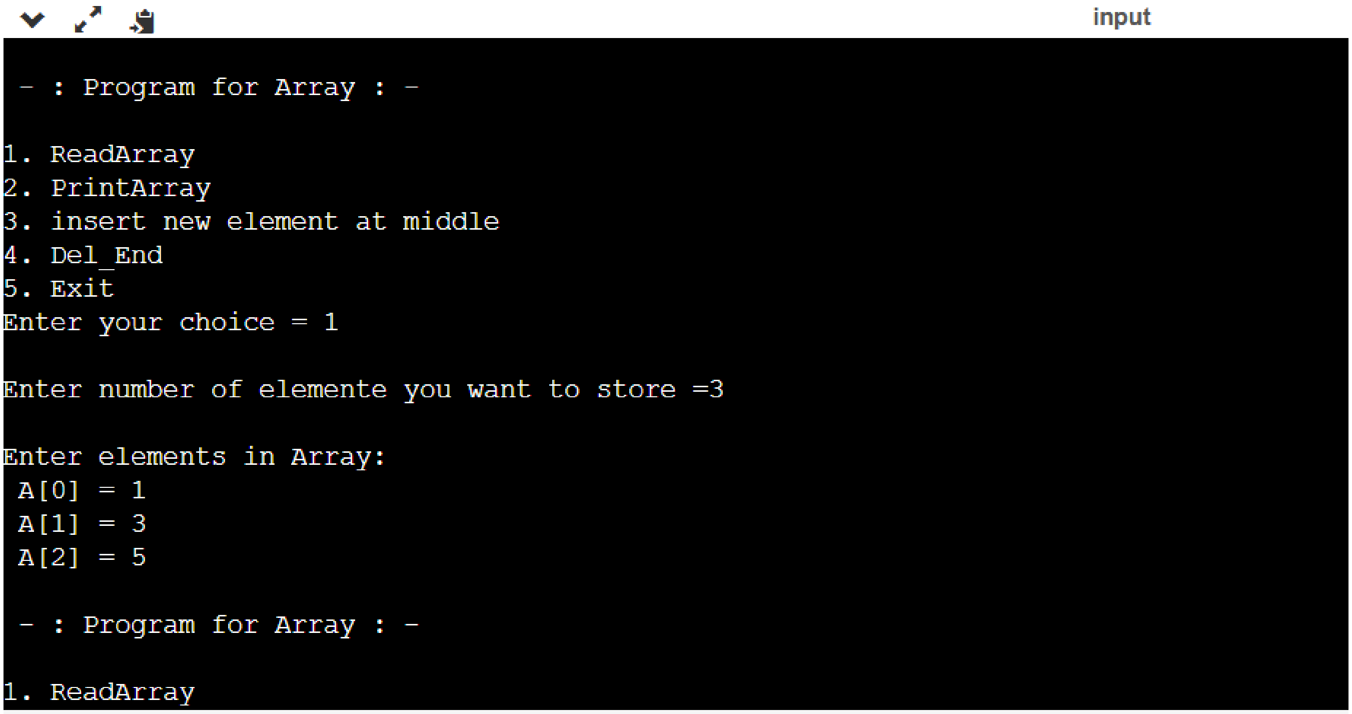
```
{
    int i,n;
    printf("\nEnter number of elemente you want to store =");
    scanf("%d",&n);
    UB=n-1;

    printf("\nEnter elements in Array:\n");
    for(i=LB; i<=UB; i++)
        {
            printf(" A[%d] = ",i);
            scanf("%d", &A[i]);
        }

}

void PrintArr()
{
    int i;
    if (UB == -1)
```

```
        printf("\n ||||||Arry is Empty|||||||||");
    else
      {
        printf("\n\nEnter store in Array are:\n");
        for(i=LB; i<=UB; i++)
            {
                printf("\n A[%d] = %d",i,A[i]);
            }
      }
}



void ADD_End()
{
    int item;
    printf("\nEnter item = ");
    scanf("%d",&item);
    if (UB==N-1)
        printf("Overflow");
```

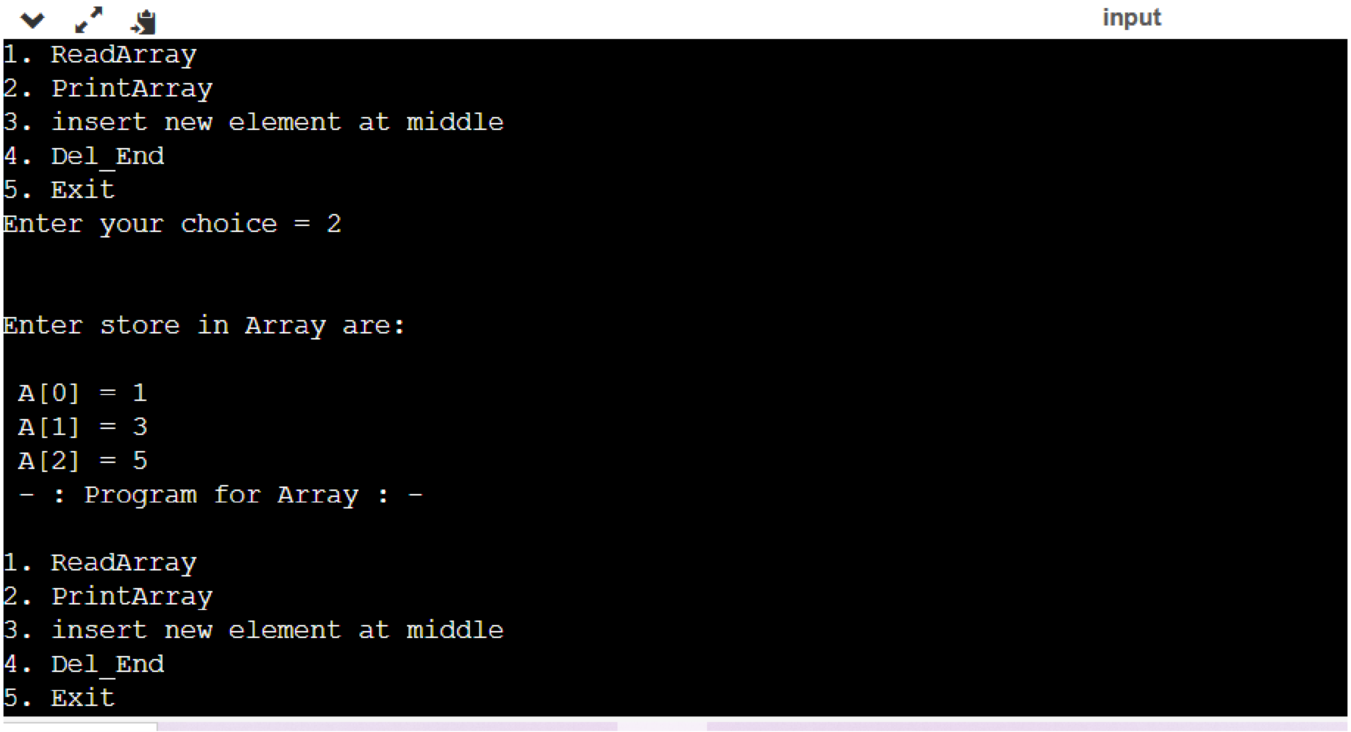
```
    else
        {
            A[UB+1]=item;
            UB = UB+1;
        }
}



void Del_End()
{
    int Temp;
    if(UB == -1)
        printf("Underflow");
    else
        {
            Temp = A[UB];
            UB = UB -1;
            printf("\n>>>>>>>>>>>> %d is Deleted",Temp);
        }
```

```
}
```

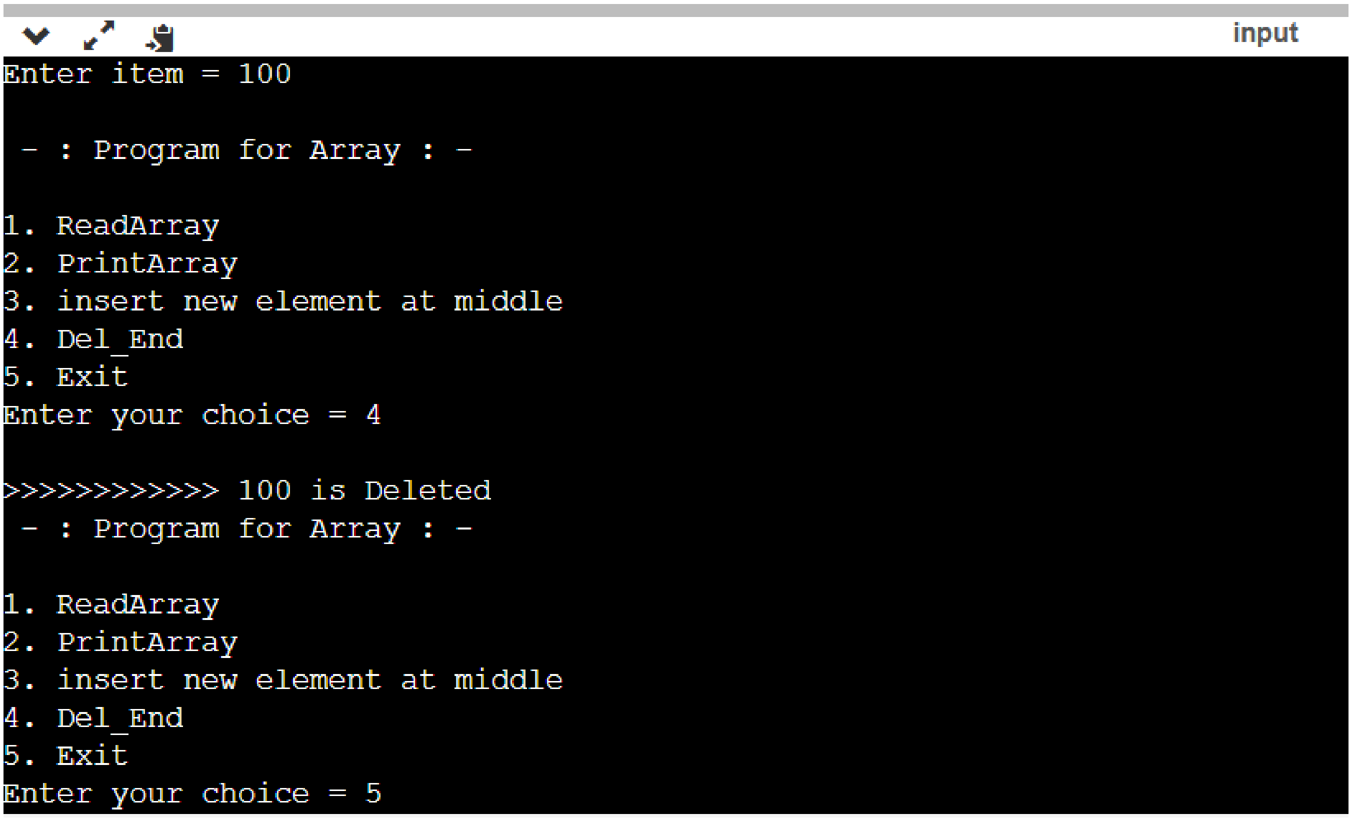
5. Output: Image of sample output to be attached here



```
 - : Program for Array : -

1. ReadArray
2. PrintArray
3. insert new element at middle
4. Del_End
5. Exit
Enter your choice = 1

Enter number of elemente you want to store =3

Enter elements in Array:
 A[0] = 1
 A[1] = 3
 A[2] = 5

 - : Program for Array : -

1. ReadArray
```



```
1. ReadArray
2. PrintArray
3. insert new element at middle
4. Del_End
5. Exit
Enter your choice = 2


Enter store in Array are:

 A[0] = 1
 A[1] = 3
 A[2] = 5
 - : Program for Array : -

1. ReadArray
2. PrintArray
3. insert new element at middle
4. Del_End
5. Exit
```



```
Enter item = 100

 - : Program for Array : -

1. ReadArray
2. PrintArray
3. insert new element at middle
4. Del_End
5. Exit
Enter your choice = 4

>>>>>>>>>>>> 100 is Deleted
 - : Program for Array : -

1. ReadArray
2. PrintArray
3. insert new element at middle
4. Del_End
5. Exit
Enter your choice = 5
```

Learning outcomes (What I have learnt):

1. Using C language for data structures

2. Using arrays various operations
    3. Using various logics for completion of array operations
    4. Using various logics for completion of array operations

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			

Learning outcomes (What I have learnt):

1. Using C language for data structures
2. Using arrays various operations
5. Using various logics for completion of array operations

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			