Implementation of STACK using ARRAYS

```
#include<stdio.h>
#include<stdlib.h>
#define max 100
int stack[max];
int top=-1;
void push(int);
int pop();
void display();
int peek();
int main()
{
   int choice,n,ele;
   printf("\n Enter the size of STACK");
   scanf("%d",&n);
   printf("\n\t 1.PUSH\n\t 2.POP\n\t 3.DISPLAY\n\t 4.PEEK\n\t5.EXIT\n");
   while(1)
   {
      printf("\n Enter the Choice:");
      scanf("%d",&choice);
      switch(choice)
      {
         case 1:
         {
            printf("enter element");
            scanf("%d",&ele);
            push(ele);
            break;
         }
         case 2:
         {
            ele=pop();
            printf("The popped element is %d\n",ele);
            break;
         }
         case 3:
         {
            display();
            break;
         }
```

```
            case 4:
               printf("The top most element on stack is %d\n",peek());
               break;
            case 5:
            {
               exit(1);
               break;
            }
            default:
            {
               printf ("\n\t Please Enter a Valid Choice(1/2/3/4)");
            }

         }
      }

}
void push(int ele)
{
   if(top==max-1)
   {
      printf("\n\tSTACK is over flow");

   }
   else
   {
      top++;
      stack[top]=ele;
   }
}
int pop()
{
   int ele;
   if(top==-1)
   {
      printf("\n\t Stack is under flow");
   }
   else
   {
      ele=stack[top];
```

```
        top--;
        return ele;
    }
}
void display()
{
    int i;
    if(top==-1)
    {
        printf("\n\t Stack is under flow");
    }
    else
    {
        printf("\n The elements in STACK \n");
        for(i=top; i>=0; i--)
            printf("\n%d",stack[i]);
    }

}
int peek()
{
    if(top==-1)
    {
        printf("\n\t Stack is under flow");
    }
    else
    return stack[top];

}
```

OUTPUT:

```
  Enter the size of STACK7

        1.PUSH
        2.POP
        3.DISPLAY
        4.PEEK
       5.EXIT
 Enter the Choice:1
```

enter element4

Enter the Choice:1
enter element3

Enter the Choice:1
enter element6

Enter the Choice:2
The popped element is 6

Enter the Choice:3

The elements in STACK

3
4
Enter the Choice:4
The top most element on stack is 3

Enter the Choice:5