# Experiment no. 1

**Objective:** Stack implementation using array

**Code:**

```
#include<stdio.h>
int stack[100],choice,n,top,x,i;
void push(void);
void pop(void);
void display(void);
int main()
{
   //clrscr();
   top=-1;
   printf("Enter the size of stack:");
   scanf("%d",&n);
   printf("\n**********MENU**********");
   printf("1.Insert\n");
   printf("2.Delete\n");
   printf("3.Display\n");
   printf("4.Exit\n");
   do
   {
      printf("\nEnter your Choice:");
      scanf("%d",&choice);
      switch(choice)
      {
```

```
        case 1:
        {
            push();
            break;
        }
        case 2:
        {
            pop();
            break;
        }
        case 3:\
        {
            display();
            break;
        }
        case 4:
        {
            printf("\nExiting");
            break;
        }
        default:
        {
            printf ("\nPlease Enter a Valid Choice:");
        }

    }
}
```

```
    while(choice!=4);
    return 0;
}
void push()
{
    if(top>=n-1)
    {
        printf("\nSTACK is over flow");

    }
    else
    {
        printf("Enter a value to be inserted:");
        scanf("%d",&x);
        top++;
        stack[top]=x;
    }
}
void pop()
{
    if(top<=-1)
    {
        printf("\nStack is under flow");
    }
    else
    {
        printf("\nThe deleted element is %d",stack[top]);
```

```
        top--;
    }
}
void display()
{
    if(top>=0)
    {
        printf("\nThe elements are\n");
        for(i=top; i>=0; i--)
            printf("\n%d",stack[i]);
    }
    else
    {
        printf("\nThe STACK is empty");
    }

}
```

## Output:

```
Enter the size of stack:10

**********MENU**********
1.Insert
2.Delete
3.Display
4.Exit

Enter the Choice:1

Enter a value to be inserted:1

Enter the Choice:2

The deleted element is 1
Enter the Choice:3

The STACK is empty
Enter the Choice:1

Enter a value to be inserted:1

Enter the Choice:3

The elements are

1
Enter the Choice:4

Exiting
```

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