Experiment 1

```
#include<stdio.h>
int STK[100], TOP = -1, i, n, x, choice;
void Push();
void Pop();
void Peep();
void Display();
int main()
{
  printf("\t WELCOME to implementation of STACK using array !!\n");
  printf("enter the size of Stack (Maximum size=100):");
  scanf("%d", &n);

  do
  {
    printf("\n Stack Operation available: \n");
     printf("\t1.Push\t 2.Pop\t 3.Peep\t 4.Display\t 5.Exit \n");
     printf("\n Enter your choice: ");
     scanf("%d", &choice);
     switch (choice)
     {
       case 1:
           Push();
           break;

       case 2:
           Pop();
           break;

       case 3:
           Peep();
           break;

          case 4:
           Display();
           break;

       case 5:
           printf("exit :Program Finished !!");
           break;

       default:
          printf("PLease enter valid choice:1,2,3,4,5\n");
       }
   } while (choice !=5);
   return 0;
}

void Push()
{
  if (TOP >= n - 1)
  {
     printf(" Stack Overflow \n");
```

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    }
    else
    {
        printf(" Enter the element to be pushed: ");
        scanf("%d", &x);
        TOP++;
        STK[TOP] = x;
    }
}

void Pop()
{
    if (TOP < 0)
    {
        printf(" Stack Underflow \n");
    }
    else
    {
        printf(" The popped element is: %d \n", STK[TOP]);
        TOP--;
    }
}

void Peep()
{
    printf(" Enter the position of the element from the top which you want to peep: ");
    scanf("%d", &i);
    if (TOP - i + 1 < 0)
    {
        printf(" Stack Underflow on Peep \n");
    }
    else
    {
        printf(" The %d element from the top is: %d \n", i, STK[TOP - i + 1]);
    }
}

void Display()
{
    if (TOP < 0)
    {
        printf(" Stack is empty \n");
    }
    else
    {
        printf(" The element in the stack are:");
        for (i = TOP; i > -1; i--)
        {
            printf("\n %d \n", STK[i]);
        }
     }
}
```

```
itl4@22DL407:~/Desktop$ gedit yug.c
itl4@22DL407:~/Desktop$ gcc yug.c
itl4@22DL407:~/Desktop$ ./a.out
        WELCOME to implementation of STACK using array !!
enter the size of Stack (Maximum size=100):3

 Stack Operation available:
       1.Push   2.Pop   3.Peep  4.Display       5.Exit

 Enter your choice: 1
 Enter the element to be pushed: 2

 Stack Operation available:
       1.Push   2.Pop   3.Peep  4.Display       5.Exit

 Enter your choice: 2
 The popped element is: 2

 Stack Operation available:
       1.Push   2.Pop   3.Peep  4.Display       5.Exit

 Enter your choice: 3
 Enter the position of the element from the top which you want to peep: 3
 Stack Underflow on Peep

 Stack Operation available:
       1.Push   2.Pop   3.Peep  4.Display       5.Exit

 Enter your choice: 4
 Stack is empty

 Stack Operation available:
       1.Push   2.Pop   3.Peep  4.Display       5.Exit

 Enter your choice: 5
itl4@22DL407:~/Desktop$
```