

**CHAROTAR UNIVERSITY OF SCIENCE &  
TECHNOLOGY**

**DEVANG PATEL INSTITUTE OF ADVANCE  
TECHNOLOGY & RESEARCH**

**Computer Science & Engineering**

**NAME: PARTH NITESHKUMAR PATEL**

**ID: 19DCS098**

**SUBJECT: DESIGN AND ANALYSIS OF  
ALGORITHM**

**CODE: CS 351**

**BACKTRACKING****PRACTICAL-7.1****AIM:**

Implement a program to print all permutations of a given string.

<b>Test Case</b>	<b>String</b>
1	ACT
2	NOTE

**PROGRAM CODE:**

```
#include <iostream>
#include <string.h>

using namespace std;
void swap(char *x, char *y)
{
    char temp;
    temp = *x;
    *x = *y;
    *y = temp;
}
void permutation(char *a, int l, int r)
{
    int i;
    if (l == r)

        cout << a << endl;
    else
    {
        for (i = l; i <= r; i++)
        {
            swap((a + l), (a + i));
            permutation(a, l + 1, r);
            swap((a + l), (a + i));
        }
    }
}
int main()
```

```
{  
    char str[10];  
  
    cout << "ENTER THE STRING : ";  
    cin >> str;  
    int n = strlen(str);  
    permutation(str, 0, n - 1);  
  
    cout<<endl;  
    cout << "PARTH PATEL\n19DCS098";  
    return 0;  
}
```

## OUTPUT:

### Test Case-1:

```
ENTER THE STRING : ACT
ACT
ATC
CAT
CTA
TCA
TAC

PARTH PATEL
19DCS098
```

### Test Case-2:

```
ENTER THE STRING : NOTE
NOTE
NOET
NTOE
NTEO
NETO
NEOT
ONTE
ONET
OTNE
OTEN
OETN
OENT
TONE
TOEN
TNOE
TNEO
TEN0
TEON
EOTN
EONT
ETON
ETNO
ENTO
ENOT
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```

## **CONCLUSION:**

By performing the above the practical, we learnt how to programmatically find the permutation of strings.