

EXPERIMENT:-7

PROGRAM:-

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

void main()
{
    int
    i,j,le,flag,flag1,flag2; char str[20];
    printf("Program to show how a turing machine will process
    0n1n2n\n"); printf("Enter a string : "); scanf("%s",str);
    le=strlen(str);
    j=0; while(1)
    {
        flag=0;flag1=0;flag2=0;i=0;
    while(i<le)
        {
            if((str[i]=='0')&&(flag==0))
            {
                str[i] = 'A';
                printf("%s\n",str);
                flag=1; //To mark that a 0 is changed to A
                i=i+1;
            }
            else if((str[i]=='0')&&(flag==1))
            {
                i=i+1; //Skip 0
            }
            else if(str[i]=='A')
            {
                i=i+1; //Skip A
            }
            else if((str[i]=='1')&&(flag1==0))
            {
                str[i] = 'B';
                printf("%s\n",str);
                flag1=1; //To mark that a 1 is changed to B
                i=i+1;
            }
            else if((str[i]=='1')&&(flag1==1))
            {
                i=i+1; //Skip 1
            }
            else if(str[i]=='B')
            {
                i=i+1; //Skip B
            }
        }
    }
}
```

```

    }
    else if((str[i]=='2')&&(flag2==0))
[Type here]

    {
        str[i] ='C';
        printf("%s\n",str);
        flag2=1; //To mark that a 2 is changed to C
        i=i+1;
    }
    else if((str[i]=='2')&&(flag2==1))
    {
        i=i+1; //Skip 2
    }
    else if(str[i]=='C')
    {
        i=i+1; //Skip C
    }
    }
    j=j+1;
if(j==le)
    {
        break;
    }
}

```

OUTPUT:-

```
Program to show how a turing machine will process 0n1n2n
Enter a string : 000111222
A00111222
A00B11222
A00B11C22
AA0B11C22
AA0BB1C22
AA0BB1CC2
AAABB1CC2
AAABBBCC2
AAABBBCCC

Process returned 9 (0x9)   execution time : 4.014 s
Press any key to continue.
```