

PROGAM

```

#include<stdio.h>
void main()
{
int data[7],rec[7],i,c1,c2,c3,c;
printf("this works for message of 4bits in size \nenter message bit one by one: ");
scanf("%d%d%d%d",&data[0],&data[1],&data[2],&data[4]);
data[6]=data[0]^data[2]^data[4];
data[5]=data[0]^data[1]^data[4];
data[3]=data[0]^data[1]^data[2];
printf("\nthe encoded bits are given below: \n");
for (i=0;i<7;i++) {
printf("%d ",data[i]);
}
printf("\nenter the received data bits one by one: ");
for (i=0;i<7;i++) {
scanf("%d",&rec[i]);
}
c1=rec[6]^rec[4]^rec[2]^rec[0];
c2=rec[5]^rec[4]^rec[1]^rec[0];
c3=rec[3]^rec[2]^rec[1]^rec[0];
c=c3*4+c2*2+c1 ;
if(c==0) {
printf("\ncongratulations there is no error: ");
} else {
printf("\nerror on the postion: %d\nthe correct message is \n",c);
if(rec[7-c]==0)
rec[7-c]=1; else
rec[7-c]=0;
for (i=0;i<7;i++) {
printf("%d ",rec[i]);
}
}
}
}

```

The screenshot shows a terminal window with the following content:

```

computer@computer: ~/Desktop/shivam
File Edit View Search Terminal Help
bash: ./exp5.c: Permission denied
(base) computer@computer:~/Desktop/shivam$ ./a.out
bash: ./a.out: No such file or directory
(base) computer@computer:~/Desktop/shivam$ gcc exp5.c
(base) computer@computer:~/Desktop/shivam$ ./a.out
this works for message of 4bits in size
enter message bit one by one: 1
1
1
0
the encoded bits are given below:
1 1 1 1 0 0 0
enter the received data bits one by one: 1
0
1
1
1
0
0
error on the postion: 5
the correct message is
1 0 0 1 1 0 0 (base) computer@computer:~/Desktop/shivam$

```

On the right side of the terminal window, the output of the program is displayed:

```

the correct message is
1 0 0 1 1 0 0 (base) computer@computer:~/Desktop/shivam$ gcc exp5.c
(base) computer@computer:~/Desktop/shivam$ ./a.out
this works for message of 4bits in size
enter message bit one by one: 0
1
0
1
the encoded bits are given below:
0 1 0 1 1 0 1
enter the received data bits one by one: 1
0
0
1
1
0
1
error on the postion: 1
the correct message is
1 0 0 1 1 0 0 (base) computer@computer:~/Desktop/shivam$

```