Assignment Hamming \*\*\*\*\*\*/

#include<stdio.h>

int main()

{

int data[10];

int dataatrec[10],c,c1,c2,c3,i;

printf("Enter 4 bits of data one by one\n");

scanf("%d",&data[0]);

scanf("%d",&data[1]);

scanf("%d",&data[2]);

scanf("%d",&data[4]);

//Calculation of even parity

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("\nEncoded data is\n");

for(i=0;i<7;i++)

printf("%d",data[i]);

printf("\n\nEnter received data bits one by one\n");

for(i=0;i<7;i++)

scanf("%d",&dataatrec[i]);

c1=dataatrec[6]^dataatrec[4]^dataatrec[2]^dataatrec[0];

c2=dataatrec[5]^dataatrec[4]^dataatrec[1]^dataatrec[0];

c3=dataatrec[3]^dataatrec[2]^dataatrec[1]^dataatrec[0];

c=c3\*4+c2\*2+c1 ;

if(c==0)

{

printf("\nNo error while transmission of data\n");

}

else

{

printf("\nError on position %d",c);

printf("\nData sent : ");

for(i=0;i<7;i++)

printf("%d",data[i]);

printf("\nData received : ");

for(i=0;i<7;i++)

printf("%d",dataatrec[i]);

printf("\nCorrect message is\n");

//if errorneous bit is 0 we complement it else vice versa

if(dataatrec[7-c]==0)

dataatrec[7-c]=1;

else

dataatrec[7-c]=0;

for (i=0;i<7;i++)

{

printf("%d",dataatrec[i]);

}

}

return 0;

}

\*\*\* OUTPUT \*\*\*

