**Implementation of Hamming code in c for 1 bit error detection**

**Code :-**

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| #include<stdio.h>  void 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]);  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(dataatrec[7-c]==0)  dataatrec[7-c]=1;  else  dataatrec[7-c]=0;  for (i=0;i<7;i++) {  printf("%d",dataatrec[i]);  }  }  } |