

LABORATORY WORK

1. To implement Hamming code

QUESTION: Hamming code is implemented by inserting check bits at 2th power positions of data word to get code word.

From code word, data word is obtained by checking the bit positions of code word.

CODE:

include <stdio.h>
include <math.h>

int main()

{ int n, i, j, k, p, a, long, p;

int data[20], size[20], parity[10];

printf("Enter no. of bits: ");

scanf("%d", &n);

printf("Enter the data to be sent: ");

scanf("%d", &p);

for (r = n - 1; r >= 0; r--)

{ data[i] = ip % 10;

ip = ip / 10;

}

for (r = 1; r <= n; r++)

{ if (n % 2 == 1 && r == 1)

break;

}

}

for (j = 1; j <= n * r; j = j + 2)

final[i] = -1;

for (j = 1; j <= n * r; j = j + 1)

{ if (final[j] != -1)

{ final[i] = data[j];

j++;

}

}

for (r = 0; r < n; r++)

{ p = par(Z, r);

temp = 0;

for (j = p; j <= n * r; j = j + 2 * p)

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2 for (k=0; k<2*j+k<n+r; k++)
  if (final[j+k] == -1)
    temp = final[j+k] + temp;

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3 parity[j] = temp;

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3 for (i=1; j=0; i<n+r; i++)

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2 if (final[i] == -1)
  final[i] = parity[j];
  j++;

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2 printf ("Hamming code = ");

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for (j=1; j<n+r; j++)
  printf ("%d", final[j]);

```

3

C/P

Serial number of bits: 7

Extra data to be sent: 1001100

Transmitting: 10011001100

