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#include <stdio.h>

int main(){

int choice, base, dec\_input; //count for controlling the binary digits

char my\_char; //controller for controlling the if the input has a trouble or not

int count=7,y0,y1,y2=0, dec\_counter=0, controller=0; //dec\_controller for controlling the decimal digits

do{

printf("Welcome to Octal to Binary Encoder!\n\n");

printf(" (1) Compute and Display the output\n");

printf(" (2) Quit\n");

printf("You choose: ");

scanf("%d",&choice);

printf("You have chosen option %d\n\n",choice);

if (choice == 1){

printf("Which base will you use to enter input (base 2 or base 10)? ");

scanf("%d",&base);

if (base ==2){

controller=0;

while(controller==0){

y0 =0,y1 =0,y2 =0; //reassaigning the variables for the other iterations

count =7;

printf("Please enter your input: ");

fflush(stdin);

do{

scanf("%c",&my\_char);

if((count == 1 || count== 3 || count==5 || count==7)&&my\_char!='\n'){

if(my\_char == '1')

y0=1;

controller=1;

}

if((count == 2 || count== 3 || count==6 || count==7)&&my\_char!='\n'){

if(my\_char == '1')

y1=1;

controller=1;

}

if((count == 4 || count== 5 || count==6 || count==7)&&my\_char!='\n'){

if(my\_char == '1')

y2=1;

controller=1;

}

count--;

if(my\_char>49 && my\_char!='\n'){

printf("%c",my\_char);

controller=0;

}

}while(my\_char!='\n');

if (controller == 0)

printf(" is not a valid number in base 2! Please try again!\n\n");

if (count>-2){

printf("You entered less than 8 bits! Please try again!\n");

controller=0;

}

if (count<-2){

printf("You entered more than 8 bits! Please try again!\n");

controller=0;

}

}

printf("Y2 is %d Y1 is %d Y0 is %d\n\n",y2,y1,y0);

}

else if(base == 10){

printf("Please enter your input: ");

do{

scanf("%d",&dec\_input);

if (dec\_input >255){

printf("Decimal %d cannot be represented with 8 bits. Please try again!\n",dec\_input);

printf("Please enter your input: ");

}

}while(dec\_input >255);

y0 =0,y1 =0,y2 =0; //reassaigning the variables for the other iterations

while(dec\_input!=0){

if (dec\_input%2 == 1){

if (dec\_counter == 1 || dec\_counter == 3 || dec\_counter == 5 || dec\_counter==7)

y0=1;

if(dec\_counter == 2 || dec\_counter == 3 || dec\_counter == 6 || dec\_counter == 7)

y1=1;

if(dec\_counter == 4 || dec\_counter == 5 || dec\_counter == 6 || dec\_counter == 7)

y2=1;

}

dec\_input/=2;

dec\_counter++;

}

printf("Y2 is %d Y1 is %d Y0 is %d\n\n",y2,y1,y0);

}

else

printf("Invalid number in base 2/10\n");

}

else if (choice == 2)

printf("BYEE!!\n");

else

printf("Please enter 1 or 0!\n\n");

}while(choice!=2);

return 0;

}