Pogramm to decompose on a 10 basis
eg : 155 : 5*1 +5*10 +1*100

Variables : int inter, int CoeffDiv, int ind, int to_convert , int coeffTab[5];

Eg: 155 : ind is 2 because 155 is closer to 100 and not 1000
CoeffDiiv=155/100=1 division in C division outputs the integer part from the operation
inter=155-CoeffDiv*10^{ind}=155-1*100
inter's value will be 55
And then ind will have a new value 1 because 55>10&&55<100 and the loop closes itself
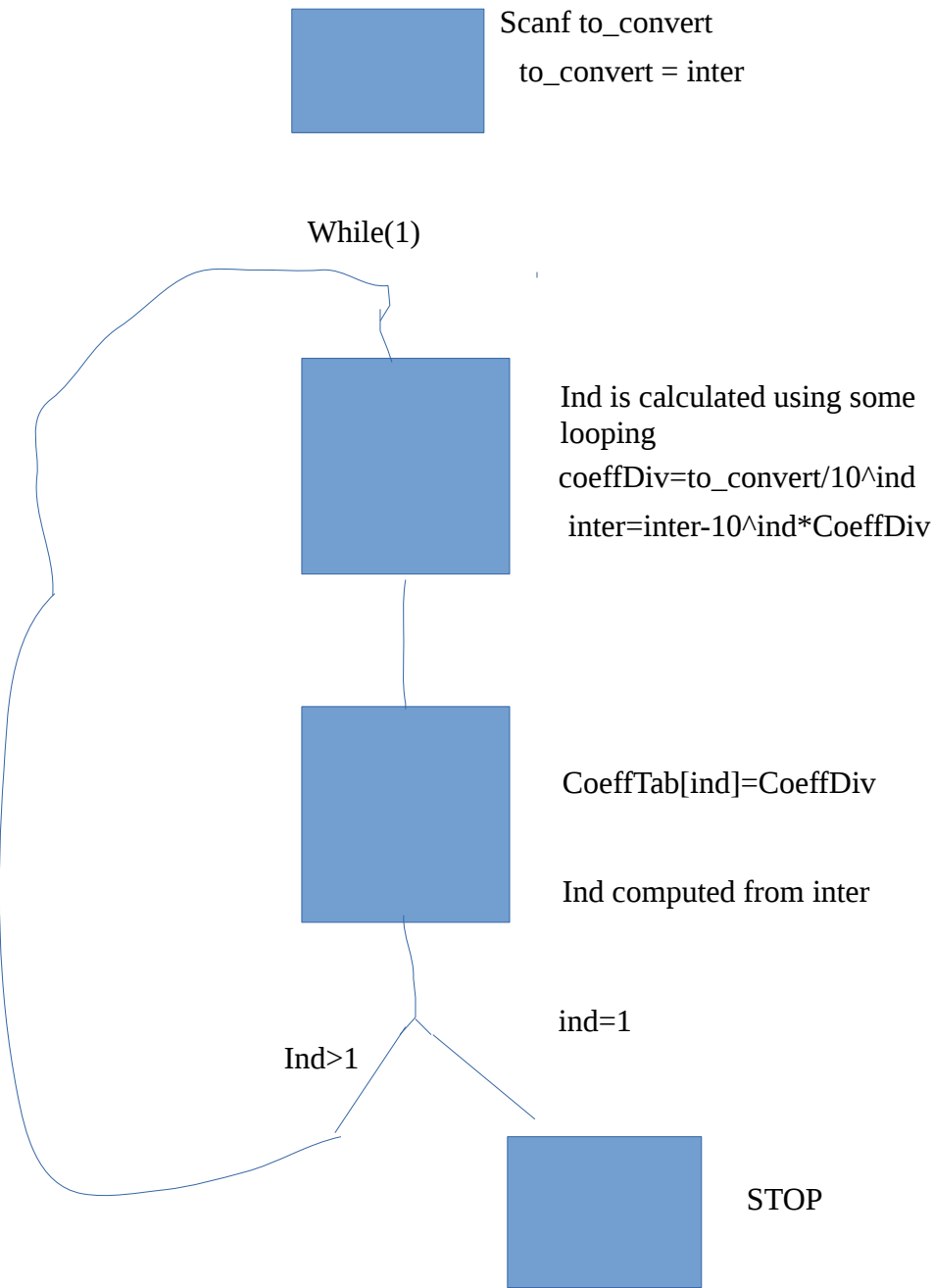(while(1)) 55/10=5=CoeffDiv, inter =55-5*10=5, ind=1 Algo will STOP

ind contains the value of the power of ten closer to the number to decompose when the value is 1
algo stops. And CoeffDiv are the values to be stored in the proces CoeffTab will contain
{5,5,1,0,0}.

155 155-155/100=55 **55** 55-55/10=5 **5** 1<5<10 so stop the Algo

1237 1237-1237/1000=237 237 237-237/100=37 37/10=3 37-10*3=7
CoeffArray will contain {7,3,2,1,0}

Block diagram

Scanf to_convert
to_convert = inter

While(1)

Ind is calculated using some
looping
coeffDiv=to_convert/10^ind
inter=inter-10^ind*CoeffDiv

CoeffTab[ind]=CoeffDiv

Ind computed from inter

ind=1

Ind>1

STOP

Code

```c
#include <stdio.h>
int myPow(int a, int b);

int main(){

int to_convert=0;
int coefftab[5]={0,0,0,0,0}; //Numbers between 0 and 99999 So the max loop value is 6 for checking on the indice
short ind =0;
int inter=0;
int coeffDiv=0;


/*Scan the number to_convert*/
printf("Enter a value to decompose around Please\n");
scanf("%d",&to_convert);
printf("to_convert=%d\n",to_convert);


/*Algorithm starts here*/

        /*Finding the indice value*/
        for(int e=0;e<6;e++){
                int test=0;
                test=to_convert-myPow(10,e);
                        if(test<0){
                                ind=e-1; break;
                        }

        }
        //printf("ind :%d\n",ind);
        inter=to_convert;

        while(1){
                if(inter==0){break;}
                coeffDiv=inter/myPow(10,ind);
                //printf("to_convert : %d\n",inter);
                coefftab[ind]=coeffDiv;
                inter=inter-myPow(10,ind)*coeffDiv;
                //printf("inter : %d\n",inter);
                //printf("coefftab[%d]=%d\n",ind,coefftab[ind]);
                /*Find the indice value one more time*/
                for(int d=0;d<6;d++){
                        int test2=0;
                        test2=inter-myPow(10,d);
                        if(test2<0){
                                ind=d-1; break;
                        }
                }

        }
```

```c
                //printf("indice_deuxieme=%d\n",ind);
                if(ind==0){
                        coefftab[0]=inter;
                        break;
                }

        }

        /*Print the result array to check it*/
        for(int h=0;h<5;h++){
                printf("coefftab[%d]=%d\n",h,coefftab[h]);

        }


        return 0;

}

int myPow(int a, int b){

        int number=1;
        for(int k=0;k<b;k++){
                number=number*a;
        }
        return number;
}
```