**ALGORITHM**

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**정유석**

Problem3: Thanksgiving trip

The group agrees in advance to share expenses equally, but it

is not practical things, such as meals, hotels, taxi rides, and

plane tickets.

• After the trip, each student’s expenses are tallied and money

is exchanged so that the net cost to each is the same, to

within one won. In the past, this money exchanges has been

tedious and time consuming.

• Your job is to compute, from a list of expenses, the minimum

amount of money that must change hands in order to equalize

(within one won) all the students’ costs.

CODE

#include<stdio.h>

#include<stdlib.h>

#define MAX\_PEOPLE 100 //There are no more than 100 students

#define MAX\_WON 100000 //no student spent more than \100,000.

void main(){

int i,num\_people; //i is loop value, num\_people is number of people

int p\_money[100],sum\_p=0,sum\_l=0,avg;// p\_money[100] is store the money, sum\_p is first, sum\_l is last summation, avg is average

int judge; // if judge is 0, exit or other continue this program

while(1){

//Input number of people

printf("Enter the Number of people : ");

scanf("%d",&num\_people);

if(num\_people > MAX\_PEOPLE){ //Exception

printf("There are too many people!!\n\n");

break;

}

else if(num\_people<2){ //Exception

printf("Too few people!!\n\n");

break;

}

else{

for(i=0; i<num\_people; i++){

printf("Enter the %d st money : ",i+1);

scanf("%d",&p\_money[i]);

if(p\_money[i]>MAX\_WON){ //Exception

printf("Too many won!!\n\n");

exit(0);

}

else if(p\_money[i]<0){ //Exception

printf("Too few won!!\n\n");

exit(0);

}

else //First summation

sum\_p = sum\_p + p\_money[i];

}

//Average

avg = sum\_p / num\_people;

printf("Total money : %d \nFirst Average : %d ",sum\_p, avg);

avg = avg / 10; // Except first position number

avg = avg \* 10; // ex)) 2013 => 201 => 2010

//Last average (except the first position number of won)

for(i=0; i<num\_people; i++){

if(p\_money[i] < avg)//Find the number of money that transmission

sum\_l = sum\_l + (avg - p\_money[i]);

}

printf(" | %d \nSecond Average : %d \n",sum\_l,avg);

avg = 0; //initialize integers (average, first-last summation)

sum\_p = 0;

sum\_l = 0;

}

//judge the exit or continue

printf("If you want to exit the program, than enter 0 or not 1 !\n");

scanf("%d",&judge);

if(judge == 0)

break;

}

printf("\n\nExit the Program.\n\n");

}

SCREEN

