//Michael Weyman

/\*\*This program prompts the user for a number then calculate if it is a perfect number\*/

#include <stdio.h>

void main(){

int num = 0;

int sFact = 0;

int per = 0;

int hundred =100;

printf("enter num: ");

scanf("%d", &num);

while(num > 1){

sFact = 0;

per = 0;

\_\_asm{

mov ecx, 1

top: mov eax, num

cmp ecx, eax //compare the number to the counter ( while (counter < number) )

jge end

mov edx, 0 // clear edx for remainder

div ecx //divide num by counter

cmp edx, 0 // check if remainder is 0

je adder // if remainder is 0

jmp next // else

adder: add sFact, ecx // it is a factor add to sum

next: I nc ecx // increment counter

jmp top // loop

end: mov eax, sFact //move sum to accumulator

mov ecx, num

cmp eax, ecx // check which number is greater

jge first // if eax > ecx

jl sec // if ecx > eax

sec: sub ecx, eax // subtract the larger from the smaller

mov eax, ecx // move back into the accumulator

mov edx, 0

mul hundred // prepare for divide

div num // get percentage

mov per, eax // move into percent

jmp xout

first: sub eax, ecx

mov edx, 0

mul hundred // prepare for divide

div num // get percentage

mov per, eax // move into percent

xout: mov eax, 0

}

printf("entered number: %i \n", num);

printf("Sum of Factors: %i \n", sFact);

printf("percentage: %i \n", per);

printf("enter next num: ");

scanf("%d", &num);

}

}

Output:

enter num: 4

entered number: 4

Sum of Factors: 3

percentage: 25

enter next num: 32

entered number: 32

Sum of Factors: 31

percentage: 3

enter next num: 50

entered number: 50

Sum of Factors: 43

percentage: 14

enter next num: 51

entered number: 51

Sum of Factors: 21

percentage: 58

enter next num: 64

entered number: 64

Sum of Factors: 63

percentage: 1

enter next num: 81

entered number: 81

Sum of Factors: 40

percentage: 50

enter next num: 500

entered number: 500

Sum of Factors: 592

percentage: 18

enter next num: 8128

entered number: 8128

Sum of Factors: 8128

percentage: 0

enter next num: 90000

entered number: 90000

Sum of Factors: 224743

percentage: 149