Assignment4

Q1

//print the armstrong number in the given range

#include<stdio.h>

void main(){

//1,2,3,4,5..............100

int k,end,rem;

printf("enter the end of the range");

scanf("%d",&end);

printf("armstrong numbers are : ");

/\*

for(k=1;k<=end;k++){

//now check the each k is armstrong or not

int num=k;//assign k to num bcz num is going to be modify

int sum=0;//we want sum=0 for everytime when we start to check

while(num>0){

rem=num%num;

num=num/10;

sum=sum+(rem\*rem\*rem);

}

if(k==sum){

printf("%d\t",k);

}

}

\*/

for(k=1;k<=end;k++){

int num=k;

int num\_2=k;

//int num=num\_2=k; k==>num\_2 and num\_2==>num

int count=0;

int sum=0;

//to check the count

while(num>0){

num=num/10;

count++;

}

//sum of the power

while(num\_2>0){

rem=num\_2%10;

num\_2=num\_2/10;

//calculate the power

int power=1;

int cnt=count;

while(cnt!=0){

power=power\*rem;

cnt--;

}

sum=sum+power;

}

//check that number is equal to that sum of the power or not ?

if(sum==k){

printf(" %d\t",k);

}

}

}

Q2

//range prime

#include<stdio.h>

void main(){

int k,end;

printf("enter the end of the range :");

scanf("%d",&end);

for(k=1;k<=end;k++){

int num=k;

//check for each k the number is prime or not

int i=2;//start mod from 2 check up to 1 no before that number

while(i<num){

//check num is completely divisible or not

if(num%i!=0){

i++;

}

else{

break;

}

}

if(i==num){

printf("%d\t",k);

}

}

}

Q3

//perfect number

#include<stdio.h>

void main(){

int k;

int end;

printf("Enter the end:");

scanf("%d",&end);

for(k=1;k<=end;k++){

int num=k;

int sum=0;

for(int i=1;i<num;i++){

if(num%i==0){

sum=sum+i;

}

}

if(k==sum){

printf("%d\n",k);

}

}

}

Q4

//strong numbers

#include<stdio.h>

void main(){

int k,end,rem;

printf("Enter the end of the range:");

scanf("%d",&end);

printf("strong numbers are: ");

for(k=1;k<=end;k++){

int num=k;

int sum\_F=0;

while(num>0){

rem=num%10;

num=num/10;

//calculate the fact of each digits

int fact=1;

while(rem>0){

fact=fact\*rem;

rem--;

}

//sum of the fact of each digits

sum\_F=sum\_F+fact;

}

//equalate sum with original number

if(k==sum\_F){

printf("%d\t",k);

}

}

}

Q5

//fibonacci series

#include<stdio.h>

void main(){

int prefib1=0,prefib2=0,fib=0,end;

printf("Enter the range 0 to :");

scanf("%d",&end);

//solution to handle the infinity condition 1 1 1 1 -->(if)

if(prefib1==0 && prefib2==0){

fib=prefib2+prefib1;

printf("%d \t",fib);

prefib1++;

fib=prefib2+prefib1;

printf("%d\t",fib);

}

while(fib<=end)

{

prefib1=prefib2;

prefib2=fib;

fib=prefib2+prefib1;

if(fib<=end){

printf("%d\t",fib);

}

}

}