**PROJECT EULER**

**1.Sum of all multiples of 3 or 5:**

#include<stdio.h>

int main()

{

int i,sum=0;

for(i=0;i<1000;i++)

{

if((i%3 == 0) || (i%5 == 0))

{

sum=sum+i;

}

}

printf("%d",sum);

}

**Output: 233168**

**2.Even Fibonacci Series:**

#include<stdio.h>

int main()

{

int sum = 0,a=1,b=1,c=a+b;

while(c<4000000)

{

sum=sum+c;

a=b+c;

b=c+a;

c=a+b;

}

printf("%d",sum);

}

**Output: 4615732**

**3.Largest Prime Factor:**

#include<stdio.h>

#include<math.h>

int prime(long int n)

{

int i,max;

for(i=3;i<=sqrt(n);i+=2)

{

while(n%i == 0)

{

max=i;

n=n/i;

}

}

if(n>2)

{

max=n;

}

printf("%d",max);

}

int main()

{

prime(600851475143);

}

**Output: 6857**

**4.Product of Palindrome:**

#include <stdio.h>

static int palindrome(int n);

int main(void)

{

int i, j, max = 0;

for (i = 100; i <= 999; i++) {

for (j = 100; j <= 999; j++) {

int p = i\*j;

if (palindrome(p) && p > max) {

max = p;

}

}

}

printf("%u\n", max);

return 0;

}

int palindrome(int n)

{

int rev = 0, t = n;

while (t) {

rev= 10\*rev + (t % 10);

t /= 10;

}

return rev == n;

}

**Output: 906609**

**5.Smallest positive number divisible from 1 to 20:**

#include <stdio.h>

static long gcd(long a, long b);

static \_\_inline long lcm(long a, long b);

int main(void)

{

long ans = 1;

long i;

for (i = 1; i <= 20; i++) {

ans = lcm(ans, i);

}

printf("%lu\n", ans);

return 0;

}

long gcd(long a, long b)

{

long r;

if (a > b) {

long t = a;

a = b;

b = t;

}

while (r = a%b) {

a = b;

b = r;

}

return b;

}

long lcm(long a, long b)

{

long long p = (long long)a \* b;

return p/gcd(a, b);

}

**Output: 232792560**

## 7. 10001st prime:

#include<stdio.h>

#include<math.h>

int main()

{

int n=10001,i,c=0,count,num=2,latest;

while(c!=n)

{

int count=0;

for(i=2;i<=sqrt(num);++i)

{

if(num%i==0)

{

count++;

break;

}

}

if(count == 0)

{

c++;

latest=num;

}

num=num+1;

}

printf("%d",latest);

}

**Output: 104743**

## 9. Special Pythagorean triplet:

#include<stdio.h>

void sum(int n)

{

int i,j;

for(i=1;i<=n/3;i++)

{

for(j=i+1;j<=n/2;j++)

{

int k=n-i-j;

if((i\*i)+(j\*j) == (k\*k))

{

int l=i\*j\*k;

printf("%d",l);

return;

}

}

}

printf("No Triplets");

}

int main()

{

int n,k,l;

scanf("%d",&n);

sum(n);

return 0;

}

**10.Sum of all Primes below 2000000:**

#include <stdio.h>

#include <stdlib.h>

int main(void)

{

char \*temp;

unsigned i, j;

size\_t num = 2000000;

unsigned long long sum = 0ULL;

temp = calloc(num, sizeof \*temp);

for (i = 2; i < num; i++) {

if (!temp[i]) {

sum += i;

for (j = i\*2; j < num; j += i) {

temp[j] = 1;

}

}

}

free(temp);

printf("%llu\n", sum);

return 0;

}

**Output: 142913828922**