T.C. MARMARA ÜNİVERSİTESİ FİZİK BÖLÜMÜ

İLERİ PROGRAMLAMA

ÖDEV RAPORU

KONU: OBEB

Github : OBEB

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TESLİM TARİHİ: 16/12/17

**Purpose:** I needed to create two .c folders named as **OBEBTest** and **Prime**.At folder **Prime.c** must be two functions **Is\_Prime(N)** and **SıradakiPrime(N).** Is\_Prime(N) gives 1, if the given number is prime or 0 if it is not. SıradakiPrime(N) gives the next prime number coming after the given number.

**Summary:** Prime number is the number which has just two divisors 1 and itself.If divide them into other numbers there will be remainders.From here we can make the loop for the function **Is\_Prime(N)** which will give 0 remainder for the not prime numbers and if the remainder is not zero,then the given number is prime. I have defined the given number as **int n** and in loop it will divided by **int i** which is increasing until the given number.And if the remainder 0,then the result is **0**,otherwise the result is **1**.

For the function **SıradakiPrime(N)** need two loops.First loop with counter **int i** will give the all integer numbers after the entered number by user.The second loop for the divisor numbers **int j** which are will divide the numbers **int i** to determine the next prime number after the entered number.All numbers which have the remainders **0** ,will break the cicle.And if **int i** and **int j** will be equal to each other the integer will be prime,cause number divisible on itself is a prime number.

At folder **OBEBTest.c**  we can use these functions which are in header file **Prime.h** with prototypes to these functions.

#include <stdio.h>

#include "Prime.h"

int main()

{

int n, result;

printf("Enter an integer to check is it prime or not:");

scanf("%d",&n);

result = **Is\_Prime(n)** ; /\*result checks number by using function ,is it prime or not\*/

if ( result == 1 )

printf(" %d is prime number.\n", n);

else

printf(" %d is not prime number.\n", n);

printf("\n", **SiradakiPrime(n)** ) ; /\*gives the next prime number after entered integer\*/

return 0;

}

#include <stdio.h>

#include "Prime.h"

**int Is\_Prime(int n)** /\*prototype to check is number prime or not\*/

{

int i;

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

{

if ( n % i == 0 )

return 0; /\*if remainder is 0,then return 0\*/

}

return 1; /\*if remainder is not 0,then return 1\*/

}

**int SiradakiPrime(int n)** /\*prototype to find the next prime number\*/

{

int i,j;

for(i=n+1;i>n;i++) /\*loop giving numbers after entered integer number\*/

{

for(j=2;j<=i;j++) /\*loop giving divisor numbers \*/

{

if(i%j==0) /\*if remainder is 0,then break the loop\*/

break;

}

if(i==j) /\*if dividend and divider are equal(their remainder is one),then it's the prime number\*/

{

printf("The next prime number is :%d\n",i);

break;

}

} return 0;

}

#ifndef Prime\_H

#define Prime\_H

**int Is\_Prime(int n)** ; /\*prototype to check is number prime or not\*/

**int SiradakiPrime(int n)** ; /\*prototype to find the next prime number\*/

#endif