EECS 221 Embedded Systems Programming in C

Assignment II

Due To: 15.11.2019 23:59

1) Write a function called is_prime which takes an integer as parameter and checks whether the integer is prime or not. (a prime number is a number which is divisible by only 1 and itself. 2 is prime, 1 is not prime) If the integer is prime, your function will return 1, otherwise it will return 0.

2) Write a function called is_twin_prime which takes an integer *n* as a parameter and prints the smallest pair of twin primes that are both larger than n. Twin primes are prime numbers that are only 2 numbers apart such as 3 – 5 and 29 – 31. Use the is_prime function.

*You need to write a program that will include is_prime and is_twin_prime functions and will ask the user to enter an integer and print the smallest pair of twin primes.

3) Write a function called is_perfect which takes an integer n and returns 1 if n is a perfect number, otherwise it will return 0. If the sum of a number's proper divisors are equal to the number, than the number is called a perfect number. For example, 6 is a perfect number: 6 = 1 + 2 + 3.

4) Write a function called all_perfect_numbers which takes two integer values x and y and prints all perfect numbers between x and y if there are any. For example, if x=5 and y=30, then the function should print 6 and 28. Use the is_perfect function.

**You need to write a program that will include is_perfect and all_perfect_numbers functions and will ask the user to enter two integers and print the perfect numbers.

***You will submit two c files.