

sumPrime2.c

```
1  #include <stdio.h>
2  #include <math.h>
3
4  // function to check if a number is prime
5  int isPrime(int n) {
6      if (n <= 1) {
7          return 0; // not prime
8      }
9      if (n == 2) {
10         return 1; // 2 is prime
11     }
12     if (n % 2 == 0) {
13         return 0; // even numbers (except 2) are not prime
14     }
15     for (int i = 3; i <= sqrt(n); i += 2) {
16         if (n % i == 0) {
17             return 0; // found a divisor, not prime
18         }
19     }
20     return 1; // prime
21 }
22
23 int main() {
24     int num, sum = 0, count = 0;
25
26     printf("Enter a positive integer: ");
27     scanf("%d", &num);
28
29     if (num < 2) {
30         printf("No prime numbers exist below %d.\n", num);
31         return 0;
32     }
33
34     printf("Prime numbers between 1 and %d:\n", num);
35
36     for (int i = 2; i <= num; i++) {
37         if (isPrime(i)) {
38             printf("%d ", i);
39             sum += i;
40             count++;
41         }
42     }
43
44     printf("\n\nTotal prime numbers found: %d\n", count);
45     printf("Sum of all prime numbers: %d\n", sum);
46
47     return 0;
48 }
```