Week-08 Program-05

Write a program to express a given integer as a Sum of Two Prime Numbers.
For example, if the number is 10
The result will be:

\[
10 = 3 + 7 \\
10 = 5 + 5
\]

### Sample Test Cases

<table>
<thead>
<tr>
<th>Test Case</th>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>13 = 2 + 11</td>
</tr>
<tr>
<td>2</td>
<td>11</td>
<td>Cannot be expressed as the sum of two prime numbers.</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>7 = 2 + 5</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>18 = 5 + 13</td>
</tr>
</tbody>
</table>

The due date for submitting this assignment has passed.
As per our records, you have not submitted this assignment.
Sample solutions (Provided by instructor):

```c
#include <stdio.h>
```
int checkPrime(int n); //Write the function to check prime number

int main()
{
    int n;
    scanf("%d", &n); //An integer number is taken from the test case
    /* Complete the program
    Use your own variables as required.
    Use the printf statement as below:
    printf("%d = %d + %d\n", n, variable1, variable2);
    printf("%d cannot be expressed as the sum of two prime numbers.\n", n);
    */
    int i, flag = 0;
    for (i = 2; i <= n / 2; ++i) {
        if (checkPrime(i) == 1) {
            // condition for n-i to be a prime number
            if (checkPrime(n - i) == 1) {
                printf("%d = %d + %d\n", n, i, n - i);
                flag = 1;
            }
        }
    }
    if (flag == 0)
        printf("%d cannot be expressed as the sum of two prime numbers.\n", n);
    return 0;
}

int checkPrime(int n) {
    int i, isPrime = 1;
    for (i = 2; i <= n / 2; ++i) {
        if (n % i == 0) {
            isPrime = 0;
            break;
        }
    }
    return isPrime;
}