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## Assignment 4

### **1) Print armstrong number in the the given range 1 to n?**

```
#include <stdio.h>
#include <math.h>
int main() {
    int n;
    printf("Enter the value of n: ");
    scanf("%d", &n);
    printf("Armstrong numbers between 1 and %d are:\n", n);
    for(int i = 1; i <= n; i++) {
        int num = i, sum = 0, digits = 0;
        int temp = num;
        while (temp > 0) {
            digits++;
            temp /= 10;
        }
        temp = num;
        while (temp > 0) {
            int digit = temp % 10;
            sum += pow(digit, digits);
            temp /= 10;
        }
        if (sum == num) {
            printf("%d ", num);
        }
    }
    return 0;
}
```

The screenshot shows a web browser window with the URL `programiz.com/c-programming/online-compiler/`. The page title is "Online C Compiler - Programiz". The main area is divided into two panels. The left panel, titled "main.c", contains the following C code:

```
1 #include <stdio.h>
2 #include <math.h>
3 int main() {
4     int n;
5     printf("Enter the value of n: ");
6     scanf("%d", &n);
7     printf("Armstrong numbers between 1 and %d are:\n", n);
8     for(int i = 1; i <= n; i++) {
9         int num = i, sum = 0, digits = 0;
10        int temp = num;
11        while (temp > 0) {
12            digits++;
13            temp /= 10;
14        }
15        temp = num;
16        while (temp > 0) {
17            int digit = temp % 10;
18            sum += pow(digit, digits);
19            temp /= 10;
20        }
21        if (sum == num) {
22            printf("%d ", num);
23        }
24    }
25    return 0;
26 }
```

The right panel, titled "Output", shows the execution results:

```
Enter the value of n: 4
Armstrong numbers between 1 and 4 are:
1 2 3 4
=== Code Execution Successful ===
```

At the bottom of the browser window, there is a Windows taskbar showing the date and time as 3:22 PM on 4/19/2025.

## 2) Print prime number in the given range 1 to n?

```
#include <stdio.h> //gajanan
int main() {
    int n, i, j, isPrime;
    printf("Enter the value of n: ");
    scanf("%d", &n);
    printf("Prime numbers between 1 and %d are:\n", n);
    for(i = 2; i <= n; i++) {
        isPrime = 1; // assume i is prime
        for(j = 2; j <= i / 2; j++) {
            if(i % j == 0) {
                isPrime = 0; // i is divisible by j, not prime
                break; }
        }
        if(isPrime) {
            printf("%d ", i);
        }
    }
    return 0;
}
```

The screenshot shows a web browser window with the URL `programiz.com/c-programming/online-compiler/`. The page title is "Online C Compiler - Programiz". The interface includes a "Run" button and a "Share" icon. The code editor contains the following C program:

```
1 #include <stdio.h> //gajanan
2 int main() {
3     int n, i, j, isPrime;
4     printf("Enter the value of n: ");
5     scanf("%d", &n);
6     printf("Prime numbers between 1 and %d are:\n", n);
7     for(i = 2; i <= n; i++) {
8         isPrime = 1; // assume i is prime
9         for(j = 2; j <= i / 2; j++) {
10             if(i % j == 0) {
11                 isPrime = 0; // i is divisible by j, not prime
12                 break; }
13         }
14         if(isPrime) {
15             printf("%d ", i);
16         }
17     }return 0;
18 }
```

The output window shows the following text:

```
Enter the value of n: 4
Prime numbers between 1 and 4 are:
2 3
=== Code Execution Successful ===
```

The Windows taskbar at the bottom shows the date and time as 3:25 PM on 4/19/2025.

### 3) check perfect number in the given range 1 to n?

```
#include <stdio.h>

int main() {
    int n;
    printf("Enter the value of n: ");
    scanf("%d", &n);
    printf("Perfect numbers between 1 and %d are:\n", n);
    for(int i = 1; i <= n; i++) {
        int sum = 0;
        for(int j = 1; j <= i / 2; j++) {
            if(i % j == 0) {
                sum += j;
            }
        }
        if(sum == i) {
            printf("%d ", i);
        }
    }
    return 0;
}
```

#### 4) **Print fibonacci series?(optional)**

```
#include <stdio.h>
int main() {
    int n, a = 0, b = 1, next;
    printf("Enter the number of terms: ");
    scanf("%d", &n);
    printf("Fibonacci series up to %d terms:\n", n);
    for(int i = 1; i <= n; i++) {
        printf("%d ", a);
        next = a + b;
        a = b;
        b = next;
    }
    return 0;
}
```

#### 5) **check strong number in the given range 1 to n?**

```
#include<stdio.h>
int factorial(int num){
    int fact=1;
    for(int i=1;i<=num;i++){
        fact*=i;
    }
    return fact;
}

int isStrong(int num){
    int original=num,sum=0;
    while(num>0){
        int digit=num%10;
        sum+=factorial(digit);
        num/=10;
    }
    return sum==original;
}

int main(){
```

```
int n;  
scanf("%d",&n);  
for(int i=1;i<=n;i++){  
    if(isStrong(i)){  
        printf("%d ",i);  
    }  
}  
return 0;  
}
```