Digital assignment 2

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Question 1:

Write a C program to check whether a number is prime, Armstrong, perfect number or not using functions.

Input:

11

Output:

11 is prime number

11 is not an Armstrong number

11 is not a perfect number

Answer:

```
#include <stdio.h>
#include <math.h>
int is_prime(int n);
int is_armstrong(int n);
int is_perfect(int n);
int main() {
   int n;
   printf("Enter an integer: ");
   scanf("%d", &n);
```

```
    if (is_prime(n))
    {
        printf("%d is a prime number\n", n);
    } else
    {
        printf("%d is not a prime number\n", n);
    }

    if (is_armstrong(n))
    {
        printf("%d is an Armstrong number\n", n);
    } else
    {
        printf("%d is not an Armstrong number\n", n);
    }

    if (is_perfect(n))
    {
        printf("%d is a perfect number\n", n);
    } else
    {
printf("%d is not a perfect number\n", n
```

```
}
 return 0;
}

int is_prime(int n) {
    int i;
    if (n <= 1) {
        return 0;
    }
    for (i = 2; i <= sqrt(n); i++) {
        if (n % i == 0) {
            return 0;
        }
    }
    return 1;
}
int is_armstrong(int n) {
    int sum = 0, temp = n, digits = 0;
    while (temp > 0) {
        digits++;
        temp /= 10;
    }
```

```
    temp = n;
    while (temp > 0) {
        int remainder = temp % 10;
        sum += pow(remainder, digits);
        temp /= 10;
    }
    return (sum == n);
}

int is_perfect(int n) {
    int i, sum = 0;
    for (i = 1; i < n; i++) {
        if (n % i == 0) {
            sum += i;
        }
    }
    return (sum == n);
}
```