Task 9

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Question1: Write a program in C that prompts the user to input a number. The program should then calculate and print out the sum of all integers from 1 to the entered number using a loop.

Question2: Write a C program that takes an array as an input from the user and then prints the largest value.

Question3: Write a C program that prompts the user to enter a number and then determines the greatest prime factor of that number.

Question4:Write a program in C that prompts the user to input a number.Then check whether the number is perfect or not.

Answers :

```c
#include <stdio.h>

void sumOfIntegers() {
    int num, sum=0;
    printf("Enter a number: ");
    scanf("%d", &num);

    for (int i=1; i<=num; ++i) {
        sum += i;
    }

    printf("Sum of integers from 1 to %d is %d\n", num, sum);
}

void largestValueInArray() {
    int size;
    printf("Enter the size of the array: ");
    scanf("%d", &size);

    int arr[size];
    printf("Enter %d elements:\n", size);
    for (int i=0; i<size; ++i) {
        scanf("%d", &arr[i]);
    }

    int max=arr[0];
```

```c
    for (int i=1; i<size; ++i) {
        if (arr[i] > max) {
            max = arr[i];
        }
    }

    printf("Largest value in the array is %d\n", max);
}

int isPrime(int num) {
    if (num <= 1) return 0;
    for (int i=2; i*i<=num; ++i) {
        if (num % i == 0) return 0;
    }
    return 1;
}

void greatestPrimeFactor() {
    int num;

    printf("Enter a number: ");
    scanf("%d", &num);

    int factor = 2;
    while (factor * factor <= num) {
        if (num % factor == 0) {
            num /= factor;
        } else {
            factor++;
        }
    }

    printf("Greatest prime factor is %d\n", num);
}

void checkPerfectNumber() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);

    int sum = 1;
    for (int i = 2; i * i <= num; ++i) {
        if (num % i == 0) {
            if (i * i != num) {
                sum = sum + i + num / i;
            } else {
                sum = sum + i;
            }
        }
```

```c
    }

    if (sum == num && num != 1) {
        printf("%d is a perfect number\n", num);
    } else {
        printf("%d is not a perfect number\n", num);
    }
}

int main() {
    sumOfIntegers();
    largestValueInArray();
    greatestPrimeFactor();
    checkPerfectNumber();
    return 0;
}
```