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 :

#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];

    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;

            }

        }

    }

    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;

}