Question:

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);

}