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19/ SIB-1G

LATIHAN PRAKTIKUm

JOBSHEET IV  
BRUTE FORCE DAN DIVIDE CONQUER

* 1. Latihan Praktikum

Buatlah kode program untuk menghitung nilai akar dari suatu bilangan dengan algoritma Brute Force dan Divide Conquer! *Jika bilangan tersebut bukan merupakan kuadrat sempurna, bulatkan angka ke bawah.*

import java.util.Scanner;

public class mainsquar {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a number: ");

        int x = scanner.nextInt();

        scanner.close();

        // int x = 10;

        System.out.println("Square root of " + x + " using Brute Force: " + SquareRoot.sqrtBF(x));

        System.out.println("Square root of " + x + " using Divide and Conquer: " + SquareRoot.sqrtDC(x));

    }

}

public class SquareRoot {

    public static int sqrtBF(int x) {

        if (x < 0) return -1; // Invalid input

        int i = 0;

        while (i \* i <= x) {

            i++;

        }

        return i - 1; // Return the floor value of the square root

    }

    // Divide and Conquer method

    public static int sqrtDC(int x) {

        if (x < 0) return -1; // Invalid input

        int start = 0, end = x;

        while (start <= end) {

            int mid = start + (end - start) / 2;

            if (mid \* mid == x) {

                return mid;

            } else if (mid \* mid < x) {

                start = mid + 1;

            } else {

                end = mid - 1;

            }

        }

        return end; // Return the floor value of the square root

    }

}

