

# SAFRIZAL RAHMAN

## 19/ SIB-1G

# LATIHAN PRAKTIKUm

### JOBSHEET IV

#### BRUTE FORCE DAN DIVIDE CONQUER

##### 4.5 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
}
}

```

```
14     int start = 0, end = x;  
15     while (start <= end) {  
16         int mid = start + (end - start) / 2;
```

PROBLEMS 5 OUTPUT TERMINAL PORTS SEARCH ERROR DEBUG CONSOLE COMMENTS

Windows PowerShell

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```
PS J:\TUGAS SEM 2\Jobs\JOBSHEET4_SEM2> & 'C:\Program Files\Microsoft\jdk-11.0.12.7-hotspot\bin\java.exe' -agentlib:jdwp=transport=dt_socket;  
:Users\Safrizal Rahman\AppData\Roaming\Code\User\workspaceStorage\319c73547cdf20f8f9cff36f1d572b23\redhat.java\jdt_ws\JOBSHEET4_SEM2_83e61  
Square root of 10 using Brute Force: 3
```

```
Square root of 10 using Divide and Conquer: 3
```

```
PS J:\TUGAS SEM 2\Jobs\JOBSHEET4_SEM2> j;; cd 'j:\TUGAS SEM 2\Jobs\JOBSHEET4_SEM2'; & 'C:\Program Files\Microsoft\jdk-11.0.12.7-hotspot\bi  
n,suspend=y,address=localhost:59293' -cp 'C:\Users\Safrizal Rahman\AppData\Roaming\Code\User\workspaceStorage\319c73547cdf20f8f9cff36f1d5  
mainsquar'
```

```
Enter a number: 100
```

```
Square root of 100 using Brute Force: 10
```

```
Square root of 100 using Divide and Conquer: 10
```

```
PS J:\TUGAS SEM 2\Jobs\JOBSHEET4_SEM2> █
```

> OUTLINE