**LAPORAN TUGAS**

**ASISTENSI ALGORITMA PEMROGRAMAN**

***“POLINOMIAL”***



**Cindy Rahma Meilynda**

**06111840000011**

**DEPARTEMEN MATEMATIKA**

**FAKULTAS MATEMATIKA KOMPUTASI DAN SAINS DATA**

**INSTITUT TEKNOLOGI SEPULUH NOPEMBER**

**SURABAYA**

**2019**

1. **SOAL**

Input : Koefisien  dari polinomial  dimana .

Output :

1. Diskriminan
2. Akar-akar dari polinomial
3. Titik stasioner
4. Kecekungan Kurva
5. Nilai maksimum/minimum lokal
6. **SOURCE CODE**

|  |
| --- |
| Package polinomial; |
|  |  |
|  | import java.util.Scanner; |
|  |  |
|  | public class Polinomial { |
|  | public static void main(String[] args) { |
|  | Scanner in = new Scanner (System.in); |
|  |  |
|  | System.out.print("input:"); |
|  | double a = in.nextDouble(); //a adalah nilai konstanta dari ax^2 |
|  | double b = in.nextDouble(); |
|  | double c = in.nextDouble(); |
|  |  |
|  | if (a != 0){ |
|  | double D = (b \* b) - (4 \* a \* c); |
|  | double x1, x2, x11, x12; |
|  | double ts = -b/(2 \* a); |
|  | double y = (a\*ts\*ts) + (b\*ts) + c; |
|  | String X1, X2, Ts = null, lokal = null; |
|  |  |
|  | if (D>=0){ |
|  | x1 = (-b+Math.sqrt(D)) / 2\*a; X1 = ("" + x1); |
|  | x2 = (-b-Math.sqrt(D)) / 2\*a; X2 = ("" + x2); |
|  | } |
|  | else{ |
|  | x1 = -b / 2\*a; x11 = Math.sqrt(Math.abs(D))/ 2\*a; X1 = ("" + x1 + "+" + x11 + "i"); |
|  | x2 = -b / 2\*a; x12 = -Math.sqrt(Math.abs(D)) / 2\*a; X2 = ("" + x2 + "+" + x11 + "i"); |
|  | } |
|  | if (a>0 || 2\*a>0){ |
|  | Ts = "Atas"; lokal ="minimum";} |
|  | else if (a<0 || 2\*a < 0){ |
|  | Ts = "Bawah"; lokal = "maksimum";} |
|  |  |
|  | System.out.println("\nOutput: "); |
|  | System.out.println("Polinomial" + a+"x^2 +" + b+"x+ " +c + "memiliki"); |
|  | System.out.println("1. Diskriminan :" + D); |
|  | System.out.println("2. Akar akar dari polinomial:" + X1 + " dan " + X2); |
|  | System.out.println("3. Titik stasioner : (" + ts + "," + y +")"); |
|  | System.out.println("4. Kecekungan kurva : " + Ts); |
|  | System.out.println("5. Nilai " + lokal + "lokal :" + y); |
|  | } |
|  |  |
|  | else |
|  | System.out.println("\nOutput: \nNilai a tidak boleh 0!"); |
|  | } |
|  | } |
|  |  |

1. **RUNNING PROGRAM**

**[LAMPIRKAN GAMBAR HASIL SCREENSHOT DI DALAM SINI]**

