**GRAFIKA KOMPUTER**

MEMBUAT SEGITIGA

*Diajukan untik memenuhi tugas Grafika Komputer*

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SEKOLAH TINGGI TEKNOLOGI GARUT  
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**MEMBUAT SEGITIGASIKU-SIKU DENGAN ALGORITMA DDA**

Diketahui : Jika titik awal (X0,Y0) (10,10) dan titik akhir (X1,Y1) (18,10)

Jawab :

* Langkah Pertama :

Menghitung ▲x =X1-X0= 18-10=8

Menghitung ▲y =Y1-Y0= 10-10=0

Selanjutnyahitungdanbandingkannilaiabsolutnya |▲x| = 8 dan |▲y| = 0

Karena ▲x > ▲y , maka step = 8

Maka :

X\_Inc= ▲x / step = 8 / 8 = 1

Y\_Inc= ▲y / step = 0 / 8 = 0

Menghitung koordinat ( koordinat x + X\_Increment dan koordinat y + Y\_Increment)

|  |  |  |  |
| --- | --- | --- | --- |
| k | x | y | Round(x),round(y) |
|  |  |  | (10,10) |
| 0 | 11 | 10 | (11,10) |
| 1 | 12 | 10 | (12,10) |
| 2 | 13 | 10 | (13,10) |
| 3 | 14 | 10 | (14,10) |
| 4 | 15 | 10 | (15,10) |
| 5 | 16 | 10 | (16,10) |
| 6 | 17 | 10 | (17,10) |
| 7 | 18 | 10 | (18,10) |

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| 15 |  |  |  |  |  |  |  |  |  |  |
| 14 |  |  |  |  |  |  |  |  |  |  |
| 13 |  |  |  |  |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |  |  |
|  | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |

* Langkah Kedua :

Menentukan titik awal (X0,Y0)(9,10)dan titik akhir (X1,Y1)(9,15)

Menghitung ▲x =X1-X0=9-9=0

Menghitung ▲y =Y1-Y0=15-10=5

Selanjutnyahitungdanbandingkannilaiabsolutnya |▲x| = 0 dan |▲y| = 5

Karena ▲x < ▲y , maka step=5

Maka :

X\_Inc = ▲x / step = 0 / 5 = 0

Y\_Inc = ▲y / step = 5 / 5 = 1

Menghitung koordinat ( koordinat x + X\_Increment dan koordinat y + Y\_Increment)

|  |  |  |  |
| --- | --- | --- | --- |
| k | x | y | Round(x),round(y) |
|  |  |  | (9,10) |
| 0 | 9 | 11 | (9,11) |
| 1 | 9 | 12 | (9,12) |
| 2 | 9 | 13 | (9,13) |
| 3 | 9 | 14 | (9,14) |
| 4 | 9 | 15 | (9,15) |

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| 14 |  |  |  |  |  |  |  |  |  |  |
| 13 |  |  |  |  |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |  |  |
|  | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |

* Langkah Ketiga :

Menentukan titik awal (X0,Y0) (10,15) dan titik akhir (X1,Y1) (18,10)

Menghitung ▲x =X1-X0= 18-10=8

Menghitung ▲y =Y1-Y0= 10-15=-5

Selanjutnyahitungdanbandingkannilaiabsolutnya |▲x| = 8 dan |▲y|= -5

Karena ▲x > ▲y , maka step=8

Maka :

X\_Inc = ▲x / step = 8 / 8 = 1

Y\_Inc = ▲y / step = -5 / 8 = -0,62

Menghitung koordinat ( koordinat x + X\_Increment dan koordinat y + Y\_Increment)

|  |  |  |  |
| --- | --- | --- | --- |
| k | X | y | Round(x),round(y) |
|  |  |  | (10,15) |
| 0 | 11 | 14,38 | (11,14) |
| 1 | 12 | 13,76 | (12,14) |
| 2 | 13 | 13,14 | (13,13) |
| 3 | 14 | 12,52 | (14,13) |
| 4 | 15 | 11,9 | (15,12) |
| 5 | 16 | 11,28 | (16,11) |
| 6 | 17 | 10,66 | (17,11) |
| 7 | 18 | 10,04 | (18,10) |

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| 14 |  |  |  |  |  |  |  |  |  |  |
| 13 |  |  |  |  |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |  |  |
|  | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |

**Hasil Segitiga Siku-SikuAlgoritma DDA :**

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| 12 |  |  |  |  |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |  |  |
|  | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |