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Paper Code : PBC-602

P1

```
#include<stdio.h>
#include <graphics.h>
int main()
{
  int rou(float num)
  {
  return num <0? num -0.5 : num +0.5 ;
  }
  int x1=100, x2 =300, y1=100, y2=200;
  int gd = DETECT, gm;
  float pK, pKK, x, y, step;
  int dx = x2-x1;
  int dy=  y2-y1;
  pK= 2*dx-dy;
   if (dx>dy)
    step =dx;
   else
   step = dy;
   initgraph(&gd, &gm, " ");
   outtextxy (x1, y1, "A");
   outtextxy (x2, y2, "B");
   putpixel (x1, y1, WHITE);
   x=x1, y=y1;
   while (step>0)
    {
     if (pK<0)
     {
```

```
    pkk = pk + 2*dy;
}
else
{
pkk = pk + 2*dy - 2*dx;
y++;
}
putpixel (xx(x), yy(y), WHITE);
x++;
step --;
}
getch();
return 0;
}
```

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Algorithm :

Step-1: Start

Step-2: Declare variable x1, x2, y1, y2, d, i1, i2, dx, dy

Step-3: Enter value of x1, y1, x2, y2
Where x1, y1 are coordinations of starting point
And x2, y2 are coordinates of Ending point

Step-4 Calculate dx = x2 - x1
Calculate dy = y2 - y1
Calculate i1 = 2*dy
Calculate i2 = 2*(dy-dx)
Calculate d = i1 - dx

Step-5 Consider (x, y) as starting point and xend as maximum possible value of x.
If dx<0
Then x = x2
y = y2
xend = x1
if dx>0
Then x = x1
y = y1
xend = x2

Step-6 Generate point at (x, y) coordinates.

Step-7 Check if whole line is generated.
If x >= xend
Stop.

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Step-8 Calculate co-ordinates of the next pixel
if $d < 0$
Then $d = d + i1$
if $d \geq 0$
Then $d = d + i2$
Increment $y = y + 1$

Step-9: Increament $x = x + 1$

Step-10: Draw a point of latest (x, y) coordinates

Step-11: Go to step 7

Step-12: END