Dhairya Dhiman BCA VI 'A' 1121043 (40)

Q1

```
#include <graphics.h>
#include <conio.h>
#include <stdio.h>
void main()
{ int gd =DETECT, gm, i;
float x, y, dx, dy, steps;
int x0, x1, y0, y1;
initgraph(&gd, &gm, "C:\\TC\\BGI");
setbkcolor(WHITE);
x0 = 100, y0 = 200, x1=500, y1 =300;
dx =(float) (x1-y0);
dy = (float)(y1 - y0);
if (dx >=dy)
   {steps = dx;
  }
  else
    { steps =dy;
  }
dx = dx/steps;
 dy = dy/steps;
   x = x0;
    y = y0;
    i = 1;
while (i<=steps)
 { putpixel (x, y, RED)
    { x+ = dx;
```

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```
        y+=dy;
        i=i+1;
    }
getch();
closegraph();
}
```

Algorithm.

Step 1: Start Algorithm

Step 2: Declare x1, y1, dx, x as integer values
x2, y2, dy, y.

Step 3: Enter values x_1, y_1, x_2, y_2

Step 4: Calculate $dx = x_2 - x_1$,
$dy = y_2 - y_1$

Step 5: if ABS(dx) > ABS(dy) Then Step = abs(dx) ELSE Step = abs(dy)

Step 6: $Xinc = \frac{dx}{step}$, $yinc = \frac{dy}{step}$
Assign x = x_1, Assign y = y_1

Step 7: Set pixel (x, y)

Step 8: y = y + yinc set pixels (Round (x)),
x = x + xinc (Round (y)).

Step 9: Repeat step 9 until $x = x_2$.

Step 10: Stop.

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Q3

```
#include<graphics.h>
int main()
{ int gd = DETECT, gm;
  initgraph(&gd, &gm, "NULL");
  /*ROAD*/
 line(0,200, getmaxx(), 200);
 line(0,360, getmaxx(), 360);
 /*ZEBRA CROSSING*/
 setcolor(WHITE);
 rectangle(150,210,260,230);
 floodfill(152, 220, WHITE);
 rectangle(150,240,260,260);
 floodfill(152,241, WHITE);
 rectangle(150,270,260,290);
 floodfill(152, 271, WHITE);
 rectangle(150,300,260,320);
 floodfill(152,301, WHITE);
 rectangle(150,330,260,350);
 floodfill(152,331, WHITE);
  /*Traffic Light*/
 setcolor(WHITE);
 rectangle(140,200,145,130);
 rectangle(130,130,155,70);
 setcolor(RED);
 circle(142,82,6);
 floodfill(142,82,RED);
```

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```
setcolor(YELLOW);
circle(142,100,6);
floodfill(142,100,YELLOW);
setcolor(GREEN);
circle(142,118,6);
floodfill(142,118,GREEN);
setcolor(WHITE);
rectangle(150,180,250,300);
rectangle(250,180,420,300);
rectangle(180,250,220,300);
line(200,100,150,180);
line(200,100,250,180);
line(200,100,370,100);
line(370,100,420,180);
setcolor(BROWN);
floodfill(152,182,WHITE);
floodfill(252,182,WHITE);
setcolor(LIGHTRED);
floodfill(200,105,WHITE);
floodfill(210,105,WHITE);
getch();
closegraph();
return 0;
}
```

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