Praktikum Pengolahan Citra
PJJ-4

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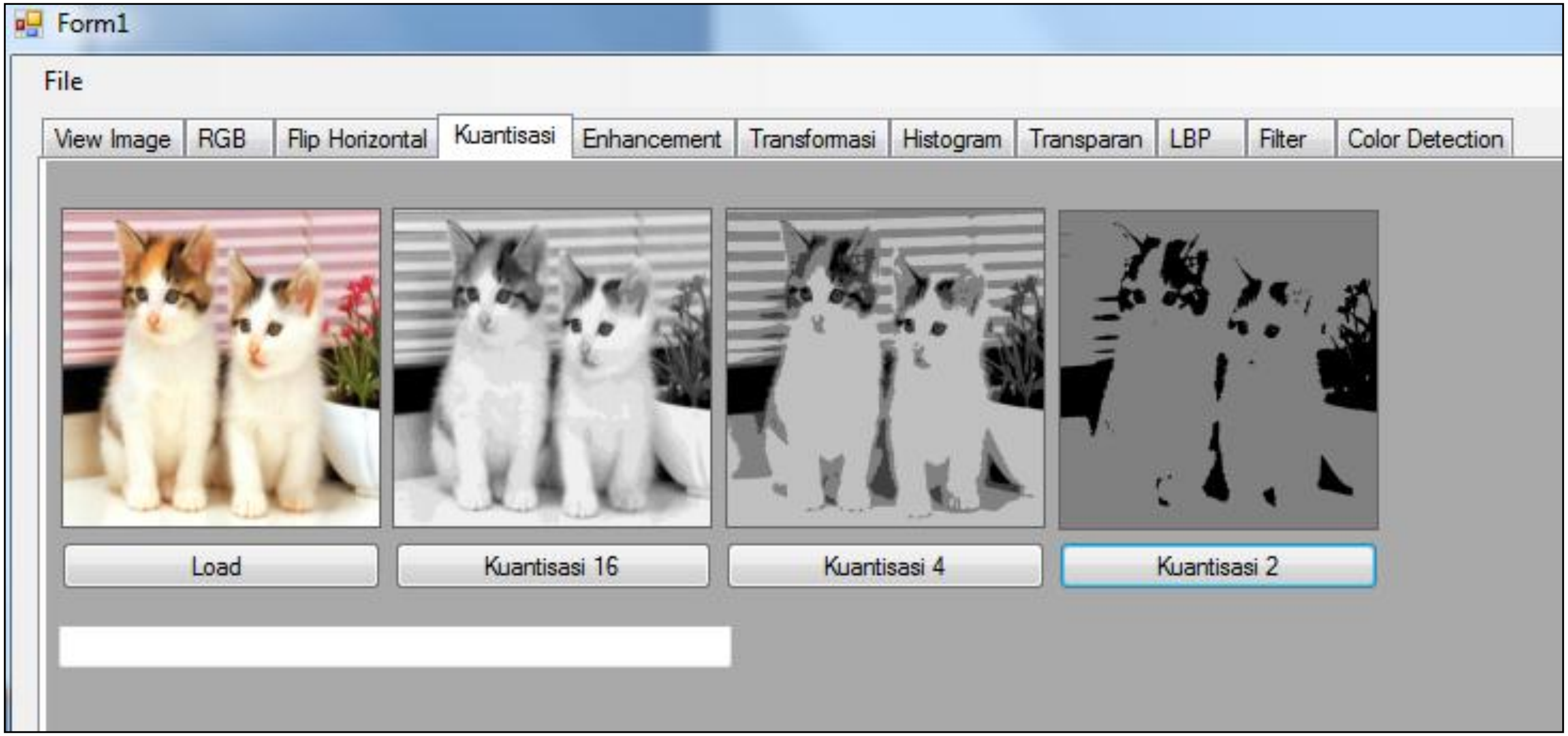
Kuantisasi


Form1
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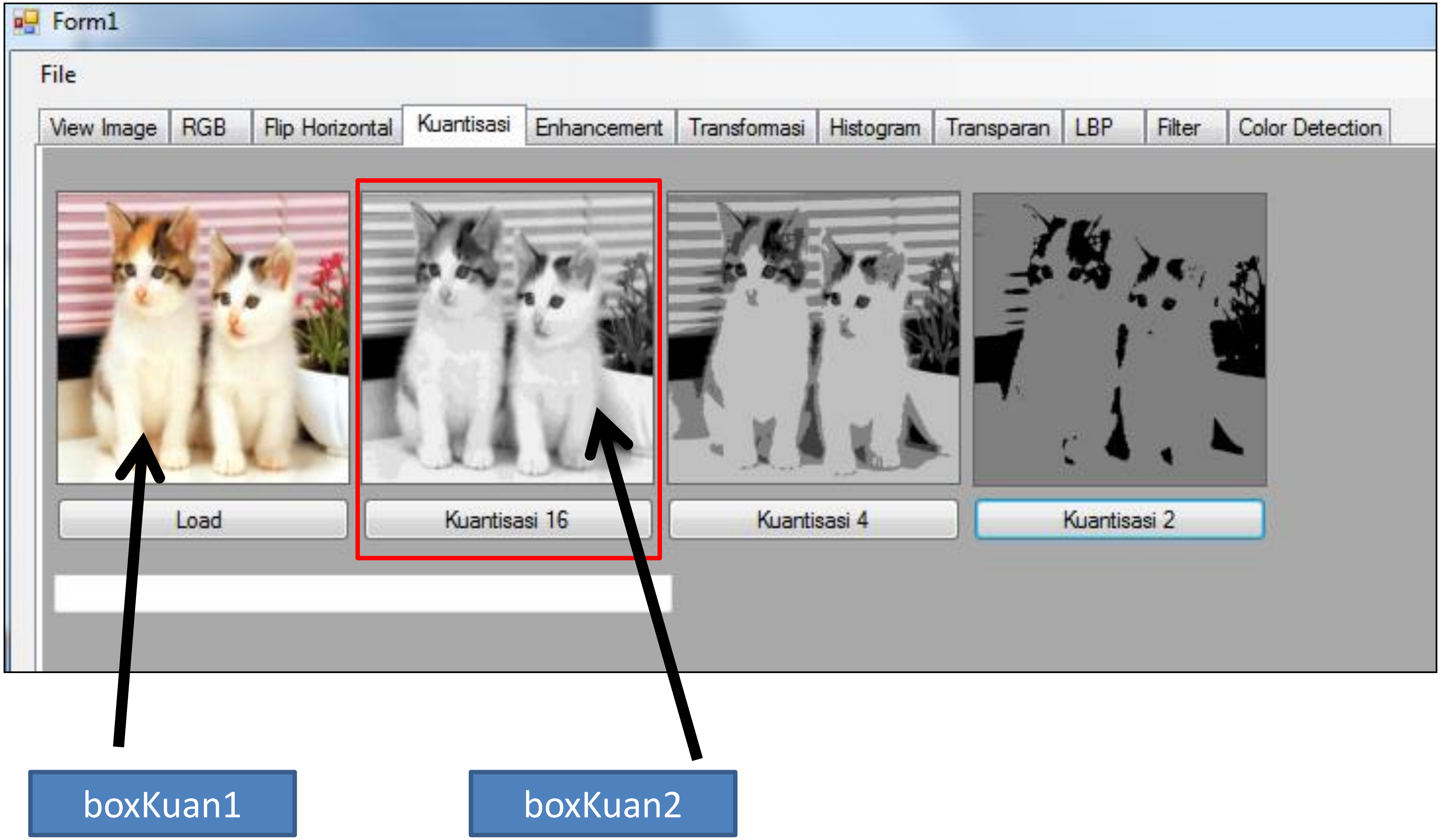
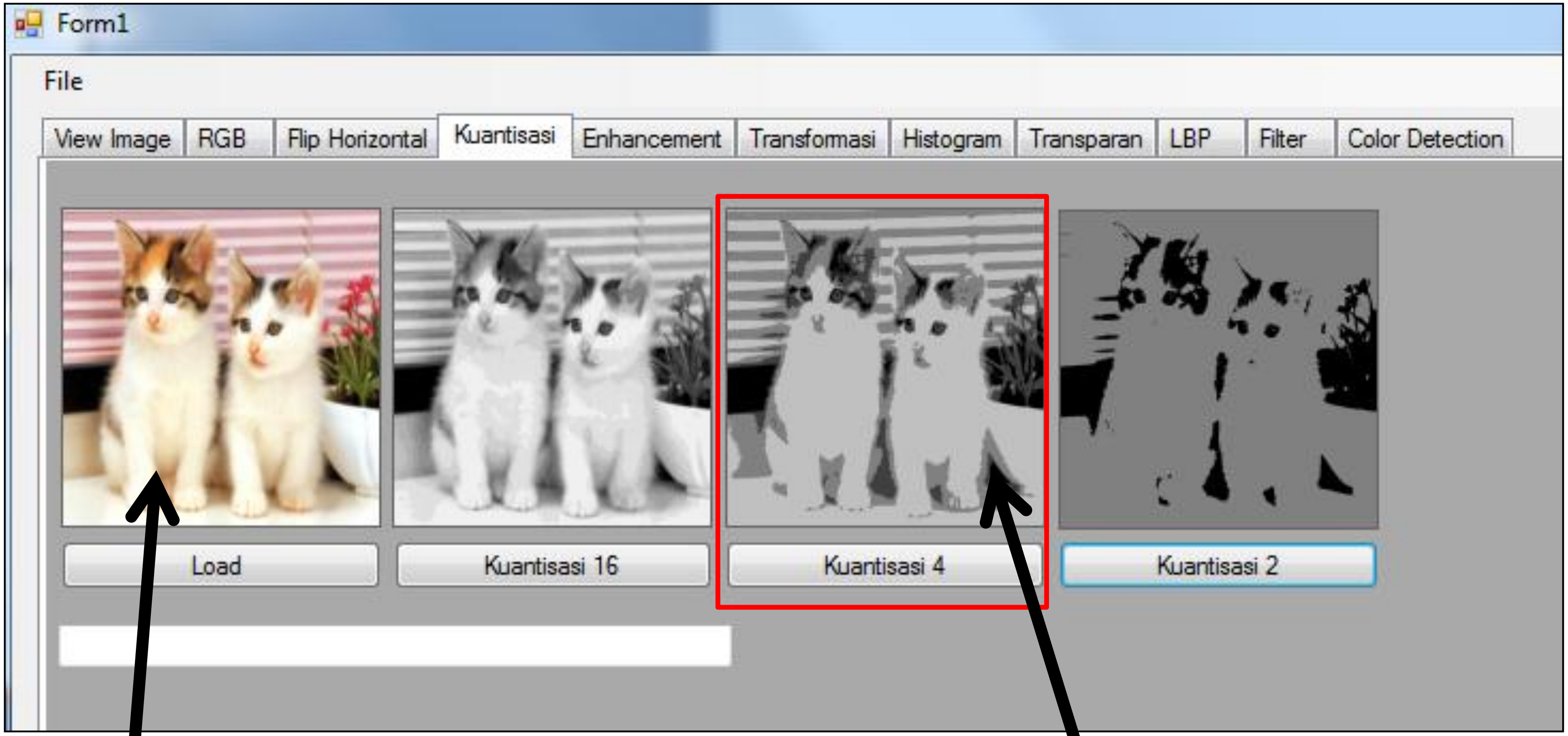
View Image
RGB
Flip Horizontal
Kuantisasi
Enhancement
Transfomasi
Histogram
Transparan
LBP
Filter
Color Detection
Load
Kuantisasi 16
Kuantisasi 4
Kuantisasi 2

Kuantisasi 16



```
Bitmap bmp1 = (Bitmap)boxKuan1.Image;
Color pixelColor;
int K=16;
int th = (int) 256 / K;
for (int y = 0; y < bmp1.Height; y++)
{
    for (int x = 0; x < bmp1.Width; x++)
    {
        pixelColor = bmp1.GetPixel(x, y);
        int red = pixelColor.R;
        int green = pixelColor.G;
        int blue = pixelColor.B;
        int rata = (int)(red + green + blue) / 3;
        int kuantisasi = (int)(rata / th);
        int result = (int)th * kuantisasi;
        bmp1.SetPixel(x,y,Color.FromArgb(result,result,result));
    }
}
boxKuan2.Image = new Bitmap(boxKuan2.Width, boxKuan2.Height);
boxKuan2.SizeMode = PictureBoxSizeMode.StretchImage;
boxKuan2.Image = bmp1;
```

Kuantisasi 4

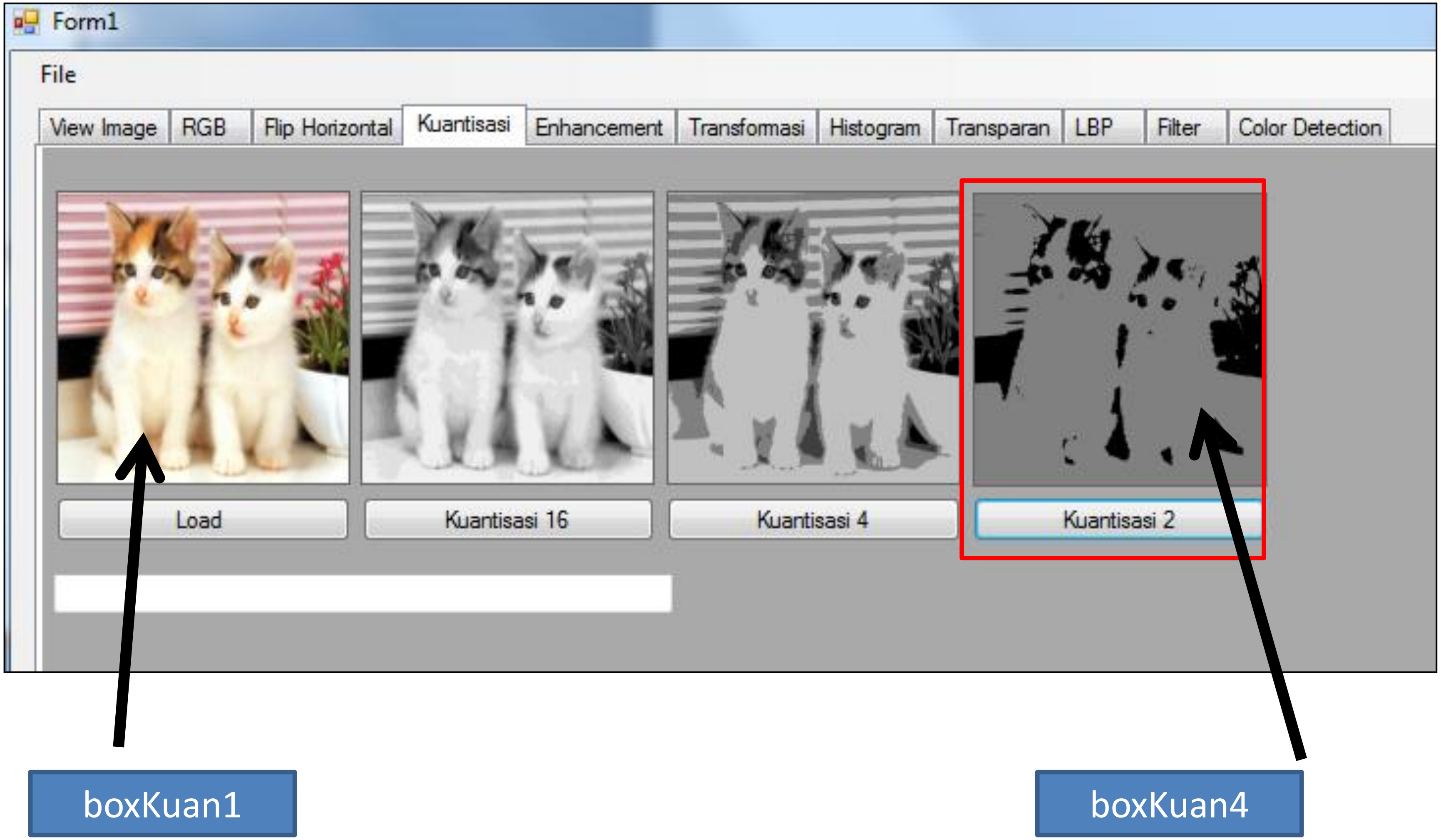


boxKuan1

boxKuan3

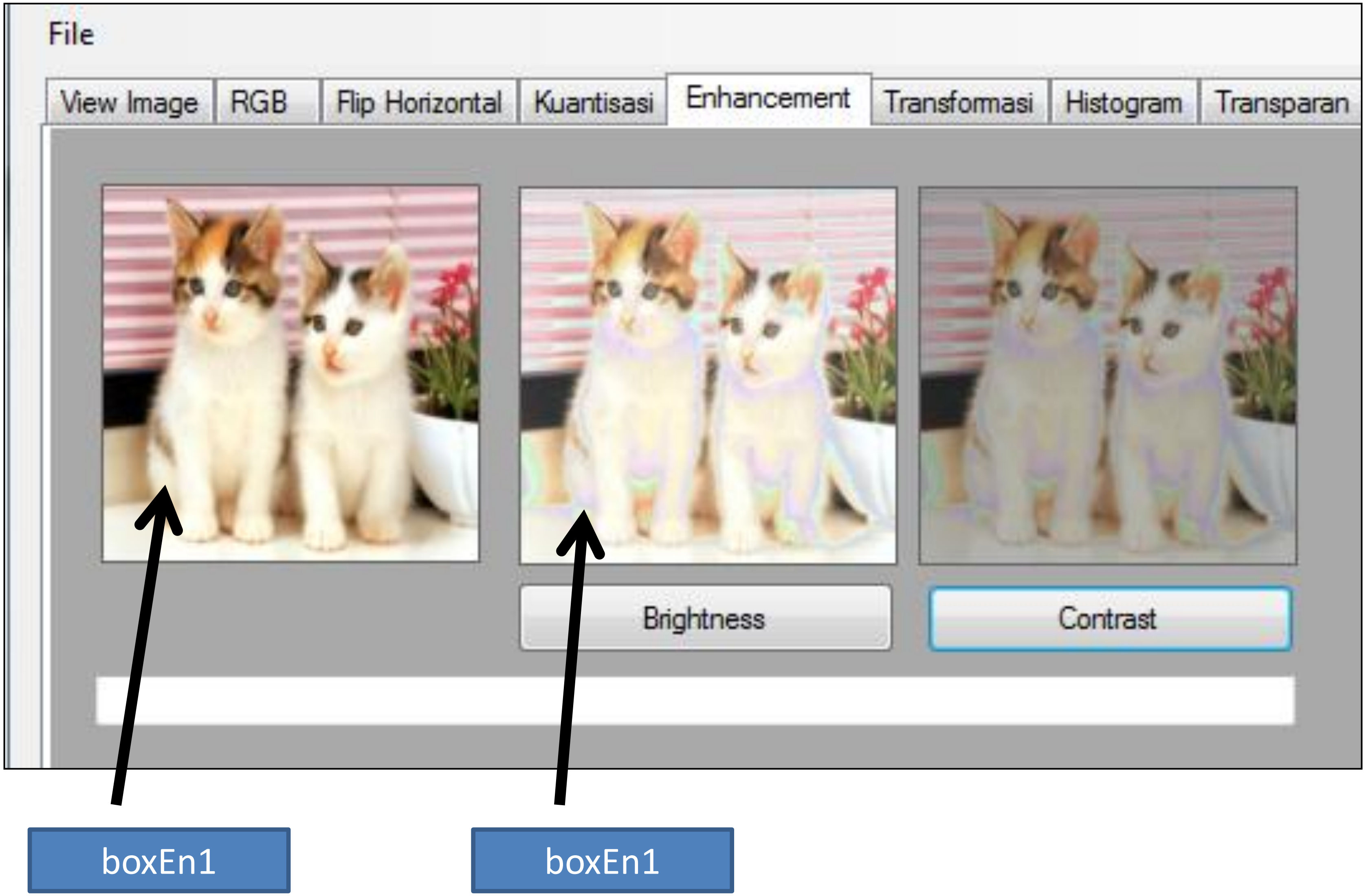
```
Bitmap bmp1 = (Bitmap)boxKuan1.Image;
Color pixelColor;
int K = 4;
int th = (int)256 / K;
for (int y = 0; y < bmp1.Height; y++)
{
    for (int x = 0; x < bmp1.Width; x++)
    {
        pixelColor = bmp1.GetPixel(x, y);
        int red = pixelColor.R;
        int green = pixelColor.G;
        int blue = pixelColor.B;
        int rata = (int)(red + green + blue) / 3;
        int kuantisasi = (int)(rata / th);
        int result = (int)th * kuantisasi;
        bmp1.SetPixel(x, y, Color.FromArgb(result, result, result));
    }
}
boxKuan3.Image = new Bitmap(boxKuan3.Width, boxKuan3.Height);
boxKuan3.SizeMode = PictureBoxSizeMode.StretchImage;
boxKuan3.Image = bmp1;
```

Kuantisasi 2



```
Bitmap bmp1 = (Bitmap)boxKuan1.Image;
Color pixelColor;
int K = 2;
int th = (int)256 / K;
for (int y = 0; y < bmp1.Height; y++)
{
    for (int x = 0; x < bmp1.Width; x++)
    {
        pixelColor = bmp1.GetPixel(x, y);
        int red = pixelColor.R;
        int green = pixelColor.G;
        int blue = pixelColor.B;
        int rata = (int)(red + green + blue) / 3;
        int kuantisasi = (int)(rata / th);
        int result = (int)th * kuantisasi;
        bmp1.SetPixel(x, y, Color.FromArgb(result, result, result));
    }
}
boxKuan4.Image = new Bitmap(boxKuan4.Width, boxKuan4.Height);
boxKuan4.SizeMode = PictureBoxSizeMode.StretchImage;
boxKuan4.Image = bmp1;
```

Enhancement

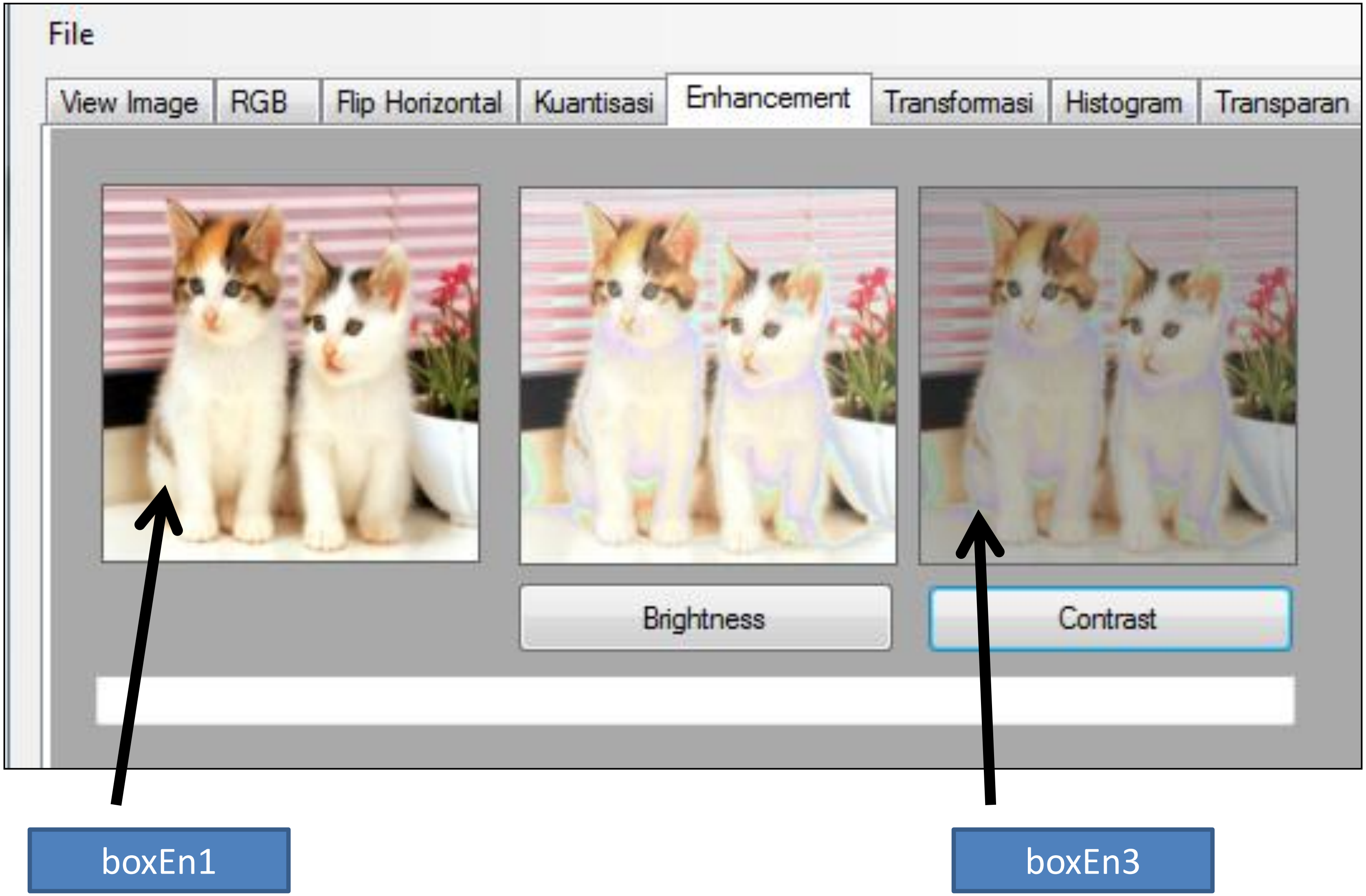


boxEn1

boxEn1

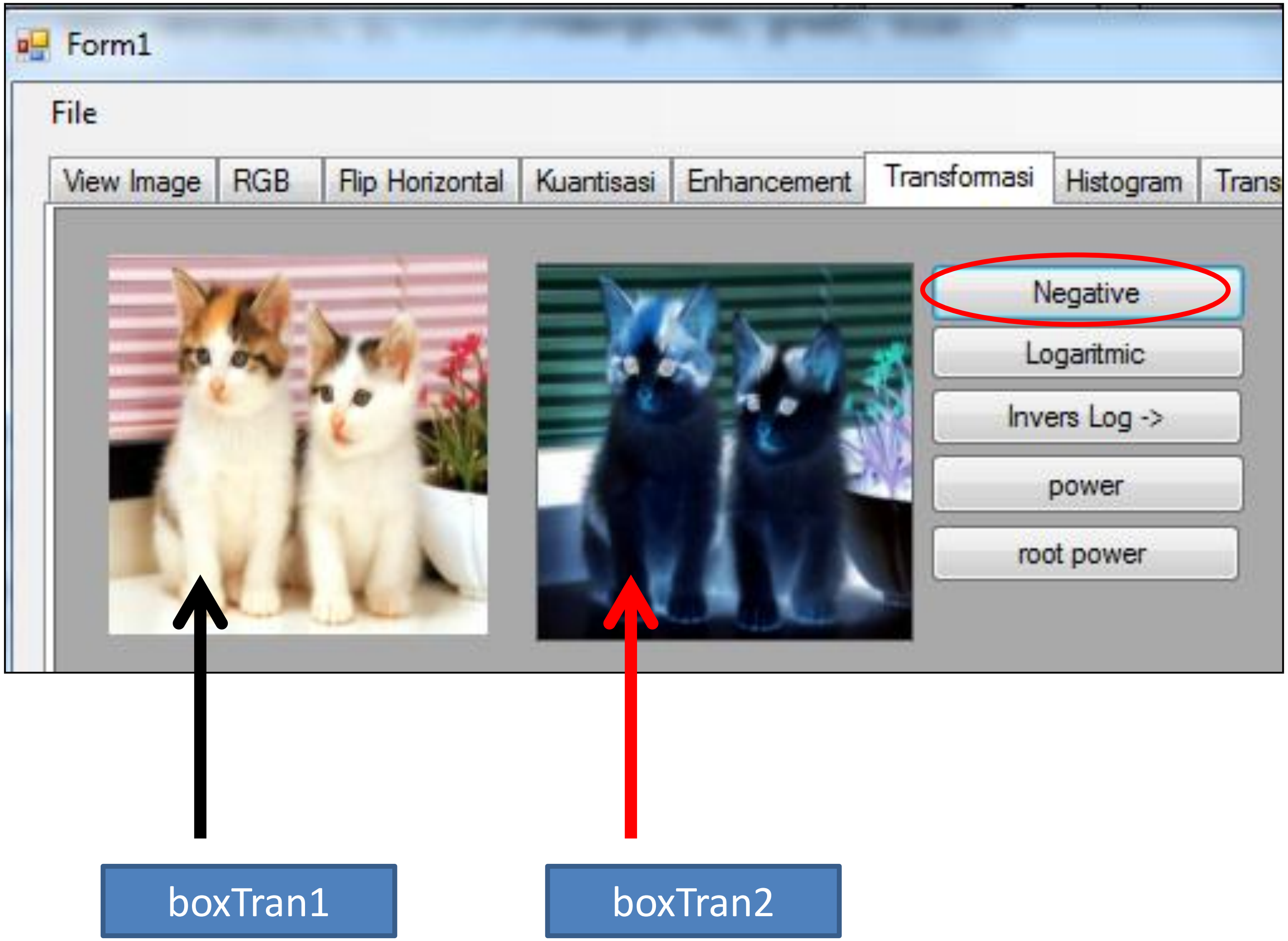
```
Bitmap bmp1 = (Bitmap)boxEn1.Image;
            Color pixelColor;
            int K = 50;
            for (int y = 0; y < bmp1.Height; y++)
            {
                for (int x = 0; x < bmp1.Width; x++)
                {
                    pixelColor = bmp1.GetPixel(x, y);
                    int red = pixelColor.R;
                    int green = pixelColor.G;
                    int blue = pixelColor.B;
                    if ((red + K) <= 255) { red = red + K; }
                    if ((green + K) <= 255) { green = green + K; }
                    if ((blue + K) <= 255) { blue = blue + K; }
                    bmp1.SetPixel(x, y, Color.FromArgb(red, green, blue));
                }
            }
            boxEn2.Image = new Bitmap(boxEn2.Width, boxEn2.Height);
            boxEn2.SizeMode = PictureBoxSizeMode.StretchImage;
            boxEn2.Image = bmp1;
```

Enhancement



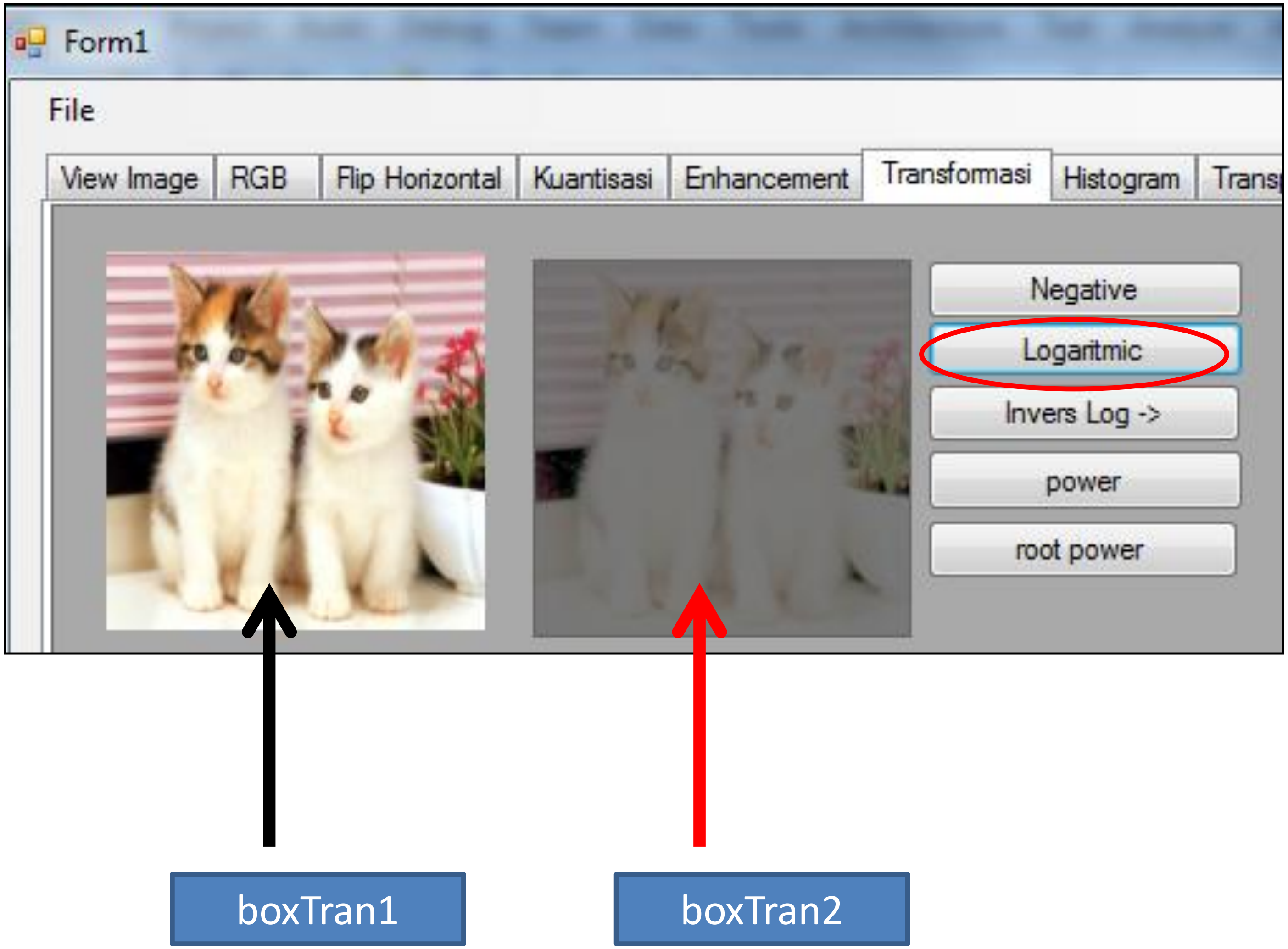
```
Bitmap bmp1 = (Bitmap)boxEn1.Image;
Color pixelColor;
float K = 0.7f;
for (int y = 0; y < bmp1.Height; y++)
{
   for (int x = 0; x < bmp1.Width; x++)
   {
      pixelColor = bmp1.GetPixel(x, y);
      int red = pixelColor.R;
      int green = pixelColor.G;
      int blue = pixelColor.B;
      red   = (int) (K * red);
      green = (int) (K * green);
      blue  = (int) (K * blue);
      if (red > 255)   { red = 255; }
      if (green > 255) { green = 255; }
      if (blue > 255)  { blue = 255; }
      if (red < 0) { red = 0; }
      if (green < 0) { green = 0; }
      if (blue < 0) { blue = 0; }
      bmp1.SetPixel(x, y, Color.FromArgb(red, green, blue));
   }
}
boxEn3.SizeMode = PictureBoxSizeMode.StretchImage;
boxEn3.Image = bmp1;
```

Transformasi



```
Bitmap bmp1 = (Bitmap)boxTran1.Image;
            Color pixelColor;
            for (int y = 0; y < bmp1.Height; y++)
            {
                for (int x = 0; x < bmp1.Width; x++)
                {
                    pixelColor = bmp1.GetPixel(x, y);
                    int red = 255- pixelColor.R;
                    int green = 255 - pixelColor.G;
                    int blue = 255 - pixelColor.B;
                    bmp1.SetPixel(x, y, Color.FromArgb(red, green, blue));
                }
            }
            boxTran2.Image = new Bitmap(boxTran2.Width, boxTran2.Height);
            boxTran2.SizeMode = PictureBoxSizeMode.StretchImage;
            boxTran2.Image = bmp1;
```

Transformasi

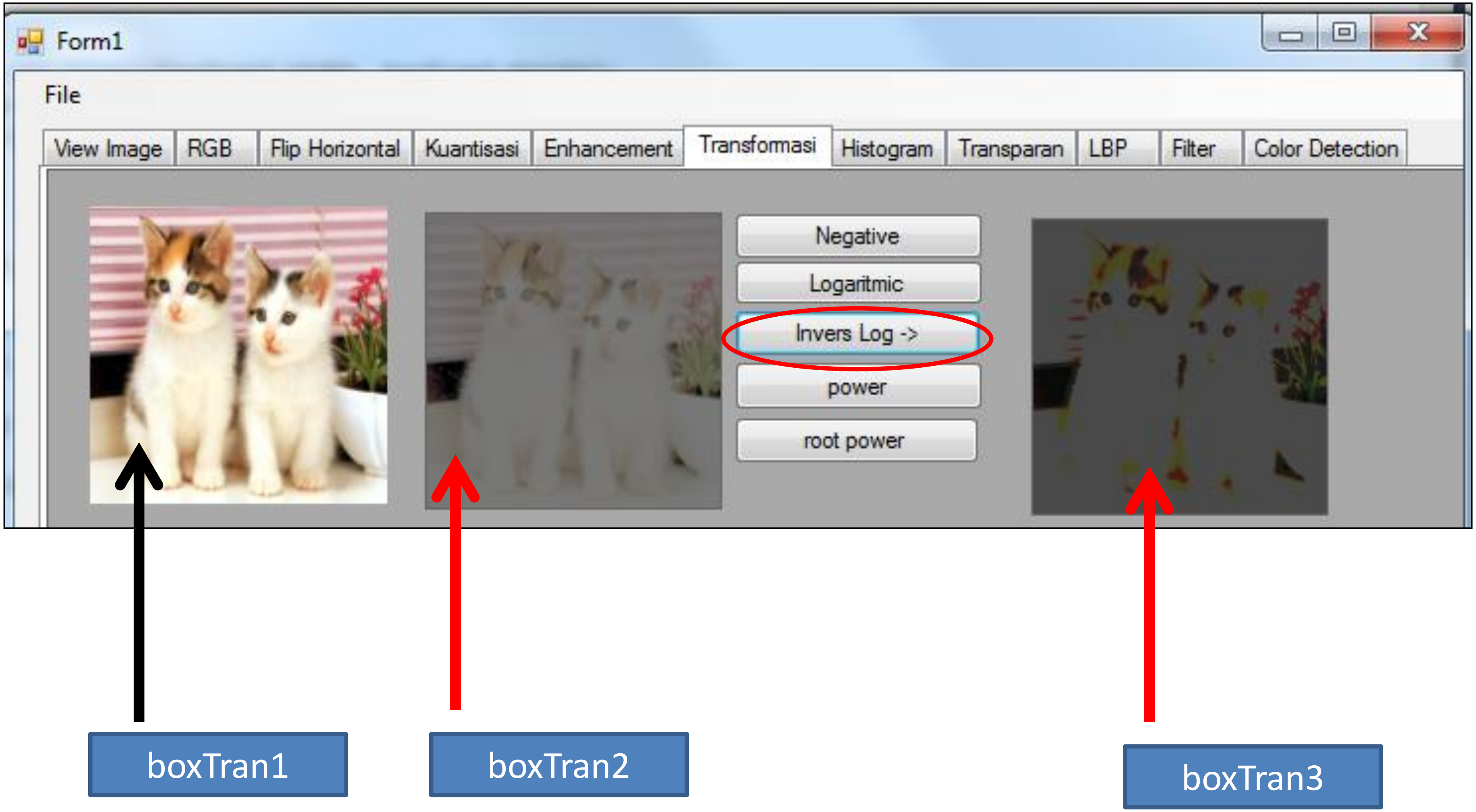


boxTran1

boxTran2

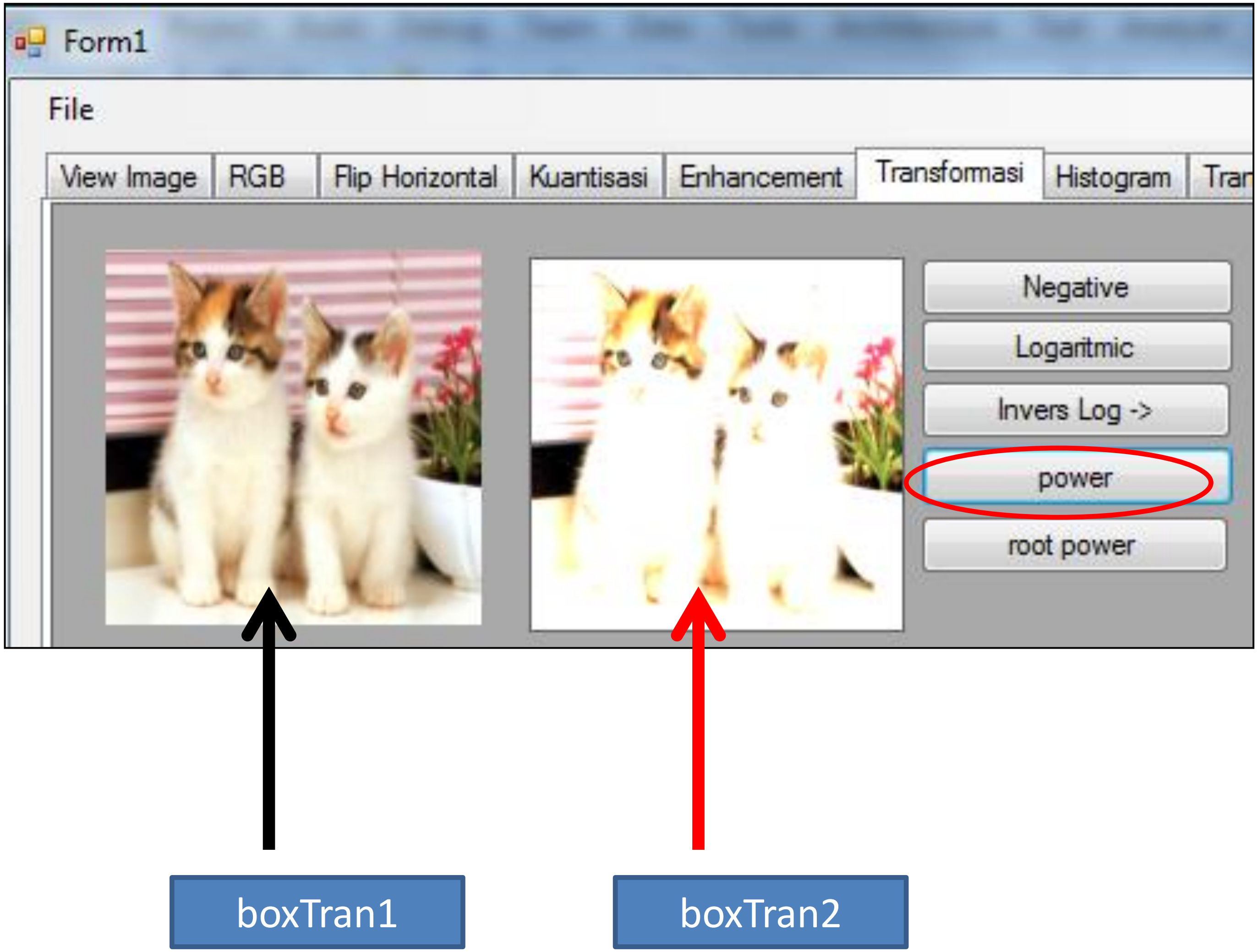
```
Bitmap bmp1 = (Bitmap)boxTran1.Image;
Color pixelColor;
int K = 50;
for (int y = 0; y < bmp1.Height; y++)
{
    for (int x = 0; x < bmp1.Width; x++)
    {
        pixelColor = bmp1.GetPixel(x, y);
        int red = pixelColor.R;
        int green = pixelColor.G;
        int blue =  pixelColor.B;
        red = (int) (K * Math.Log(red,10));
        green = (int)(K * Math.Log(green,10));
        blue = (int)(K * Math.Log(blue,10));
        if (red > 255) { red = 255; }
        if (green > 255) { green = 255; }
        if (blue > 255) { blue = 255; }
        if (red < 0) { red = 0; }
        if (green < 0) { green = 0; }
        if (blue < 0) { blue = 0; }
        bmp1.SetPixel(x, y, Color.FromArgb(red, green, blue));
    }
}
boxTran2.Image = new Bitmap(boxTran2.Width, boxTran2.Height);
boxTran2.SizeMode = PictureBoxSizeMode.StretchImage;
boxTran2.Image = bmp1;
```

Transformasi



```
Bitmap bmp1 = (Bitmap)boxTran2.Image;
Color pixelColor;
int K = 50;
for (int y = 0; y < bmp1.Height; y++)
{
    for (int x = 0; x < bmp1.Width; x++)
    {
        pixelColor = bmp1.GetPixel(x, y);
        int red = pixelColor.R;
        int green = pixelColor.G;
        int blue = pixelColor.B;
        red = (int)(10 * Math.Exp(red / K));
        green = (int)(10 * Math.Exp(green / K));
        blue = (int)(10 * Math.Exp(blue / K));
        if (red > 255) { red = 255; }
        if (green > 255) { green = 255; }
        if (blue > 255) { blue = 255; }
        if (red < 0) { red = 0; }
        if (green < 0) { green = 0; }
        if (blue < 0) { blue = 0; }
        bmp1.SetPixel(x, y, Color.FromArgb(red, green, blue));
    }
}
boxTran3.Image = new Bitmap(boxTran3.Width, boxTran3.Height);
boxTran3.SizeMode = PictureBoxSizeMode.StretchImage;
boxTran3.Image = bmp1;
```

Transformasi

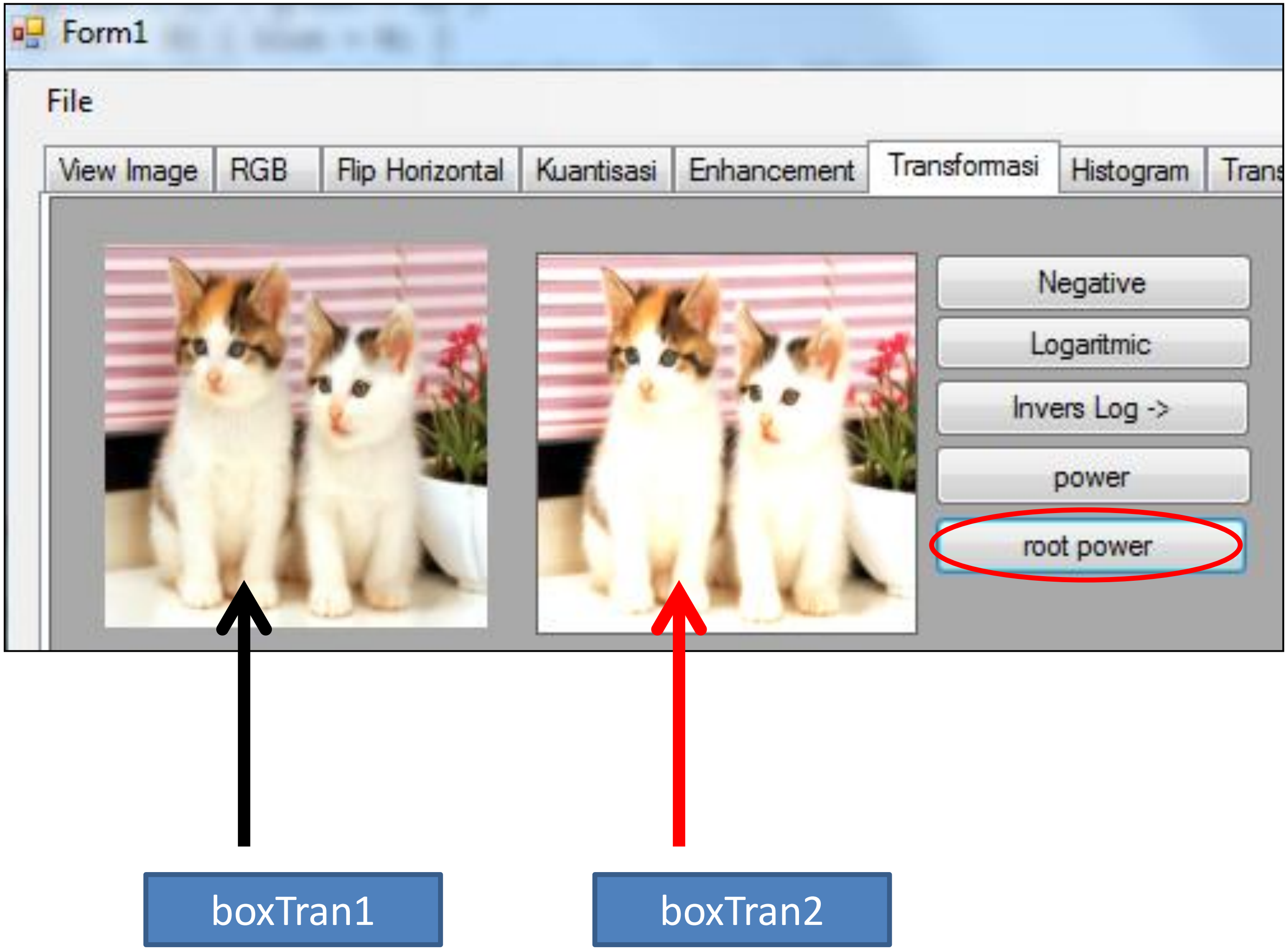


boxTran1

boxTran2

```
Bitmap bmp1 = (Bitmap)boxTran1.Image;
Color pixelColor;
float K = 0.4f;
float K2 = 1.5f;
for (int y = 0; y < bmp1.Height; y++)
{
    for (int x = 0; x < bmp1.Width; x++)
    {
        pixelColor = bmp1.GetPixel(x, y);
        int red = pixelColor.R;
        int green = pixelColor.G;
        int blue = pixelColor.B;
        red = (int)(K * red*Math.Exp(K2));
        green = (int)(K * green*Math.Exp(K2));
        blue = (int)(K * blue*Math.Exp(K2));
        if (red > 255) { red = 255; }
        if (green > 255) { green = 255; }
        if (blue > 255) { blue = 255; }
        if (red < 0) { red = 0; }
        if (green < 0) { green = 0; }
        if (blue < 0) { blue = 0; }
        bmp1.SetPixel(x, y, Color.FromArgb(red, green, blue));
    }
}
boxTran2.Image = new Bitmap(boxTran2.Width, boxTran2.Height);
boxTran2.SizeMode = PictureBoxSizeMode.StretchImage;
boxTran2.Image = bmp1;
```

Transformasi



boxTran1

boxTran2

```
Bitmap bmp1 = (Bitmap)boxTran1.Image;
Color pixelColor;
float K = 0.6f;
float K2 = 1.5f;
for (int y = 0; y < bmp1.Height; y++)
{
    for (int x = 0; x < bmp1.Width; x++)
    {
        pixelColor = bmp1.GetPixel(x, y);
        int red = pixelColor.R;
        int green = pixelColor.G;
        int blue = pixelColor.B;
        red = (int)(K * red * Math.Exp(1/K2));
        green = (int)(K * green * Math.Exp(1/K2));
        blue = (int)(K * blue * Math.Exp(1/K2));
        if (red > 255) { red = 255; }
        if (green > 255) { green = 255; }
        if (blue > 255) { blue = 255; }
        if (red < 0) { red = 0; }
        if (green < 0) { green = 0; }
        if (blue < 0) { blue = 0; }
        bmp1.SetPixel(x, y, Color.FromArgb(red, green, blue));
    }
}
boxTran2.Image = new Bitmap(boxTran2.Width, boxTran2.Height);
boxTran2.SizeMode = PictureBoxSizeMode.StretchImage;
boxTran2.Image = bmp1;
```