

Praktikum Pengolahan Citra PJJ-5

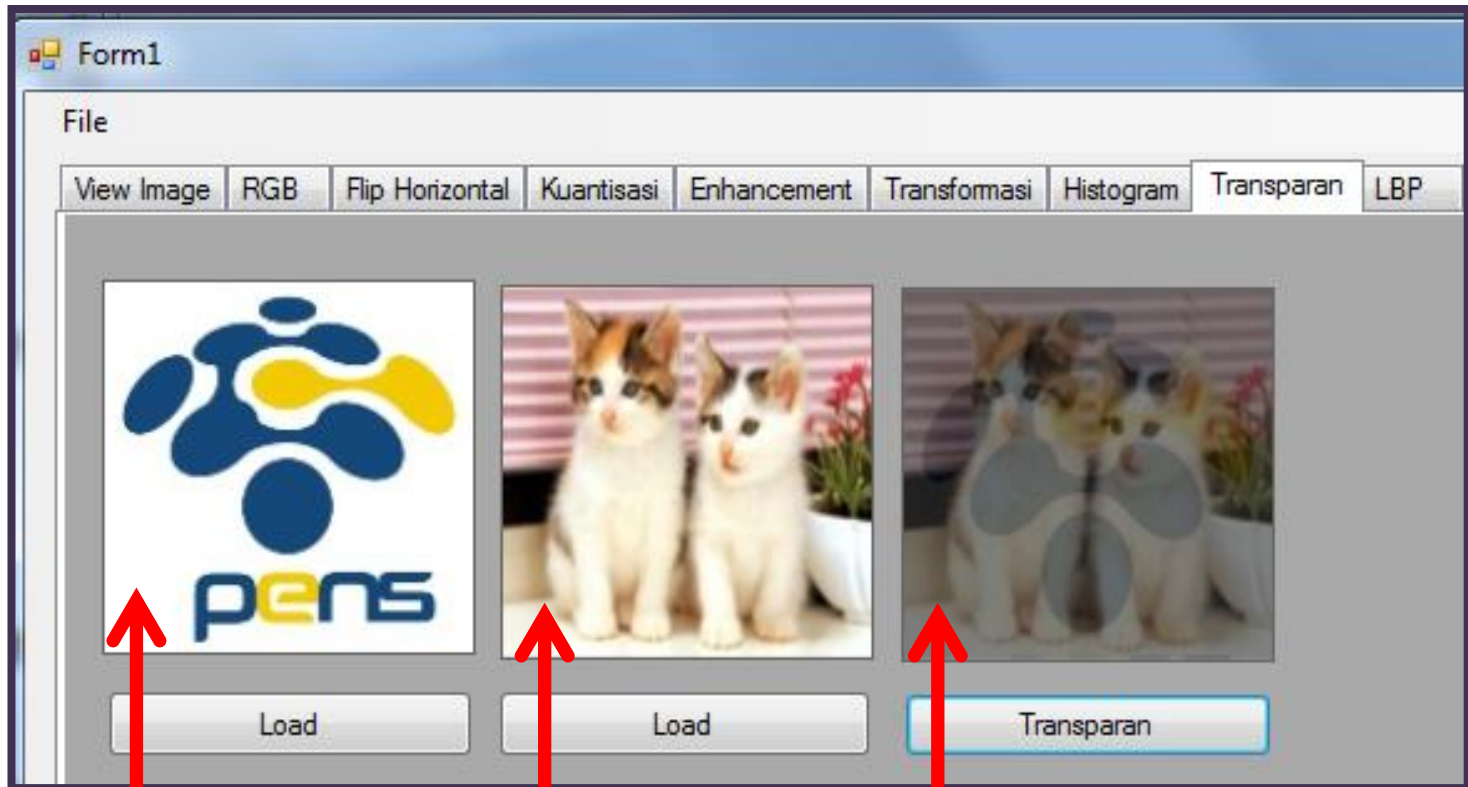
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5 Mei 2016

Transparan



Transparan



boxTransparan1

boxTransparan2

boxTransparan3

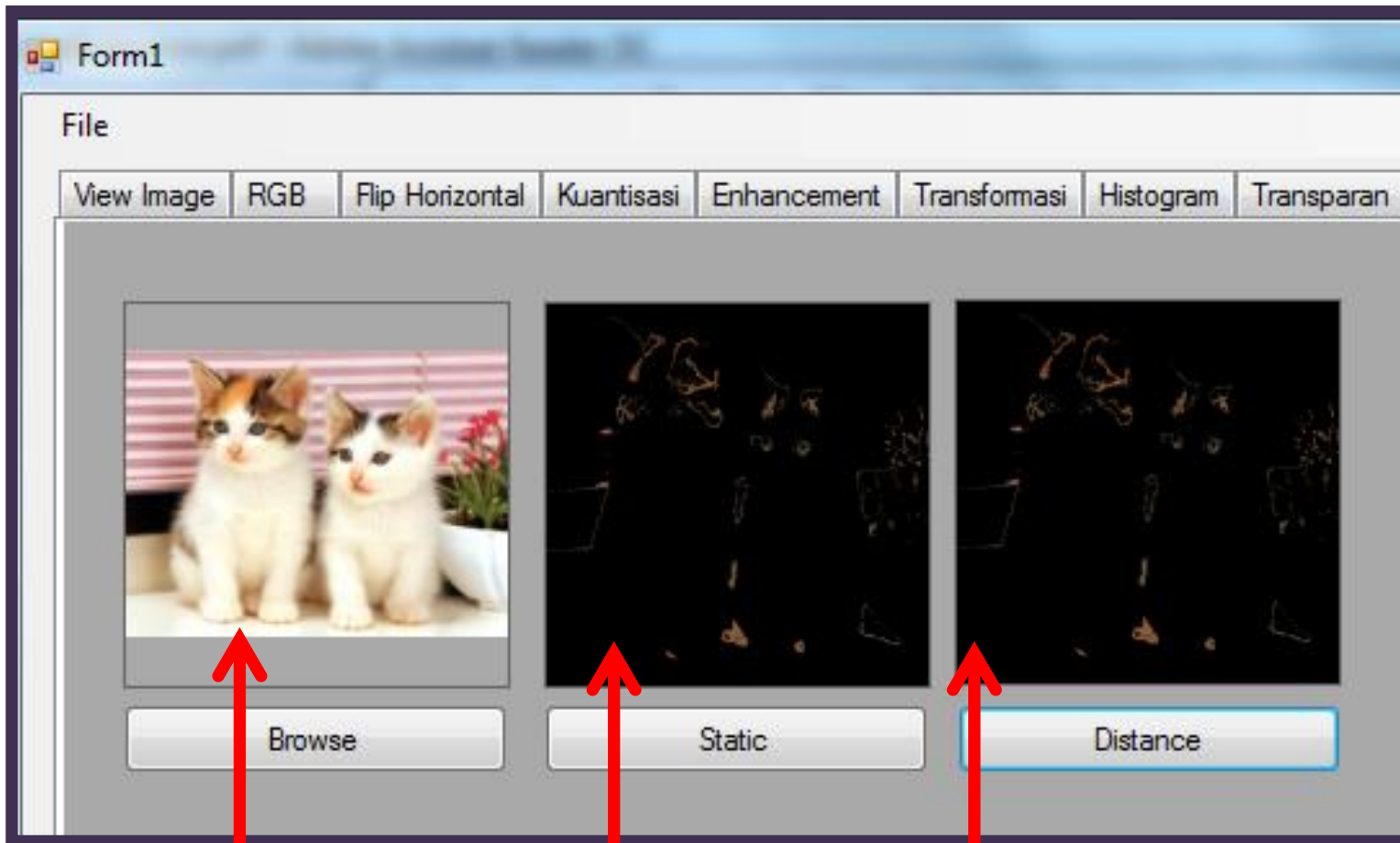
```
Bitmap bmp1 = (Bitmap)boxTransparan1.Image;  
Bitmap bmp2 = (Bitmap)boxTransparan2.Image;  
Bitmap bmp3 = (Bitmap)boxTransparan2.Image;  
int height = bmp1.Height;  
int width = bmp1.Width;  
if (bmp1.Height > bmp2.Height) height = bmp2.Height;  
if (bmp1.Width > bmp2.Width) width = bmp2.Width;  
Color pixelColor1;  
Color pixelColor2;
```

```
boxTransparan3.Image = new Bitmap(boxTransparan3.Width, boxTransparan3.Height);  
boxTransparan3.SizeMode = PictureBoxSizeMode.StretchImage;  
boxTransparan3.Image = bmp3;
```

```
for (int y = 0; y < height; y++)
{
    for (int x = 0; x < width; x++)
    {
        pixelColor1 = bmp1.GetPixel(x, y);
        int red = pixelColor1.R;
        int green = pixelColor1.G;
        int blue = pixelColor1.B;

        pixelColor2 = bmp2.GetPixel(x, y);
        int red2 = pixelColor2.R;
        int green2 = pixelColor2.G;
        int blue2 = pixelColor2.B;

        red = (int)((0.25 * red + 0.75 * red2) / 2);
        green = (int)((0.25 * green + 0.75 * green2) / 2);
        blue = (int)((0.25 * blue + 0.75 * blue2) / 2);
        bmp3.SetPixel(x, y, Color.FromArgb(red, green, blue));
    }
}
```



boxDetection1

boxDetection2

boxDetection3

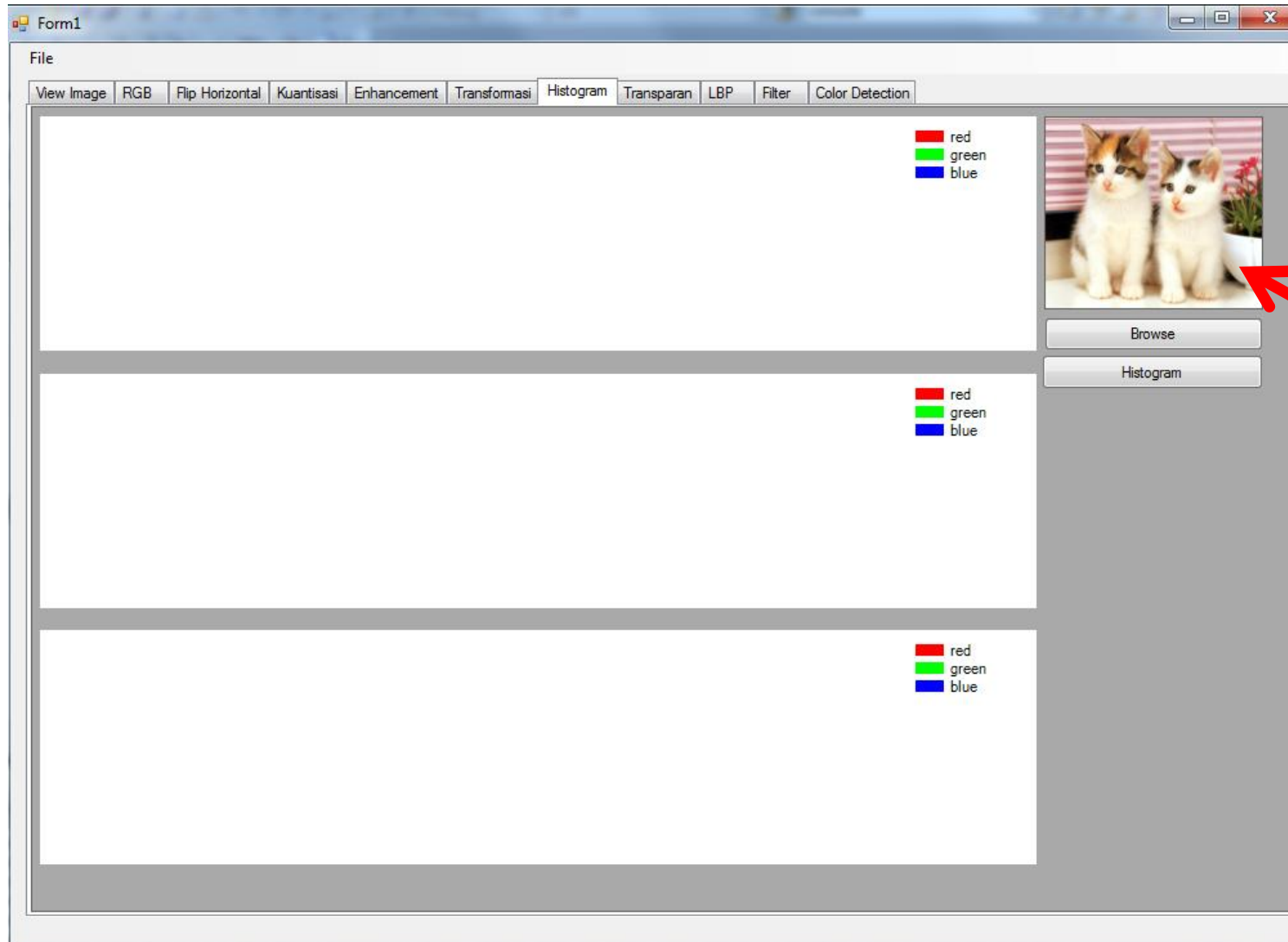
Static

```
int red = pixelColor.R;
int green = pixelColor.G;
int blue = pixelColor.B;
if ((red < 102) || (red > 160) || (green < 70) || (green > 100) || (blue < 0) &&
    (blue > 65))
    { red = 0; green = 0; blue = 0; }
bmp.SetPixel(x, y, Color.FromArgb(red, green, blue));
```

Distance

```
pixelColor = bmp.GetPixel(x, y);
int red = pixelColor.R;
int green = pixelColor.G;
int blue = pixelColor.B;
int d=Math.Abs(red-r)+Math.Abs(green-g)+Math.Abs(blue-b);
if (d > 150){
    red = 0; green = 0; blue = 0;
}
bmp.SetPixel(x, y, Color.FromArgb(red, green, blue));
```

Histogram



boxHis1

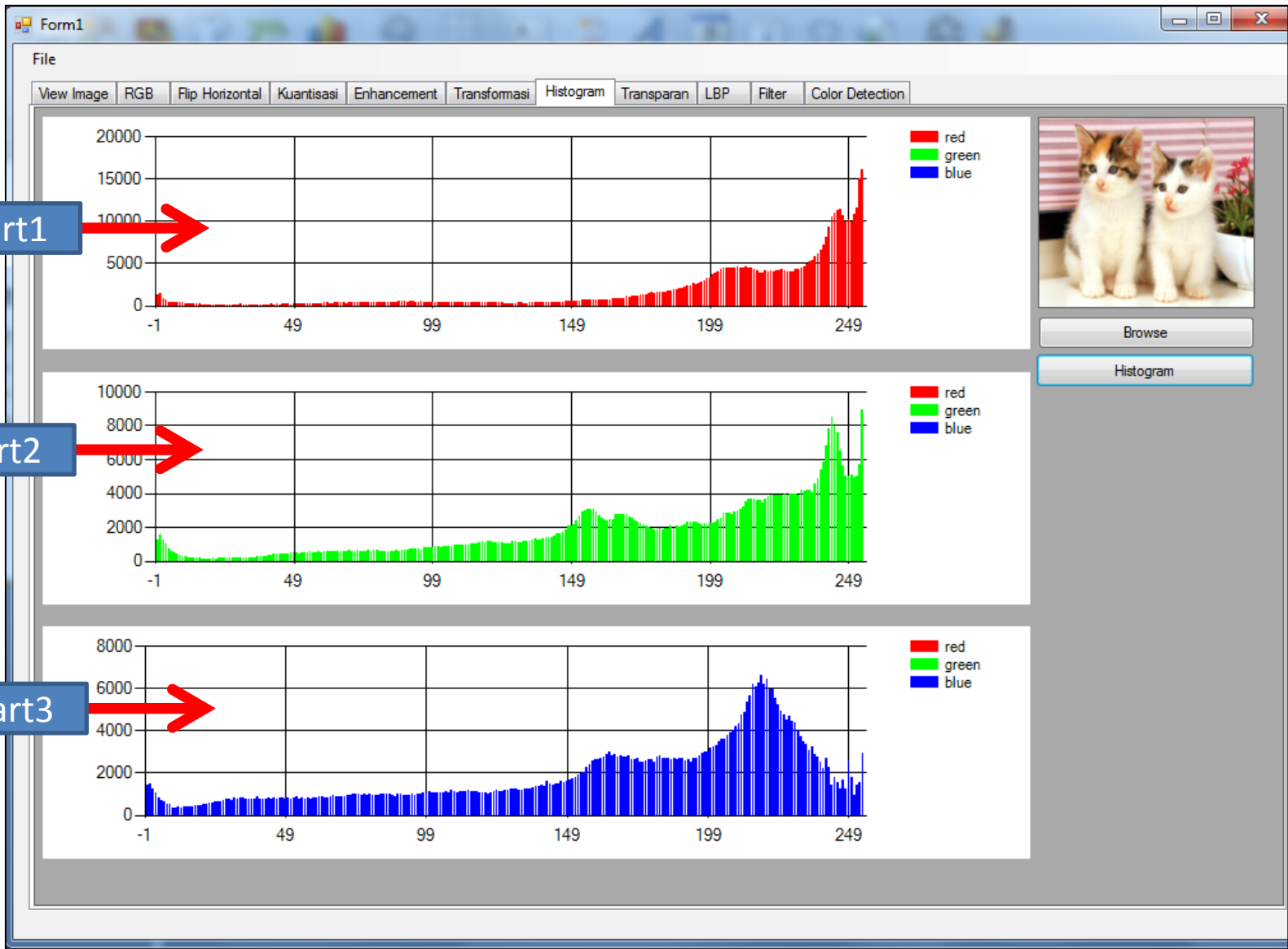


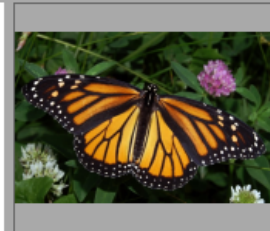
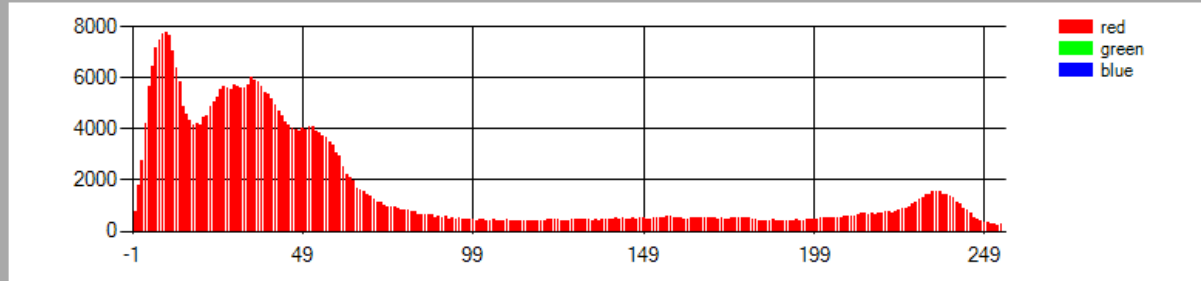
chart1

chart2

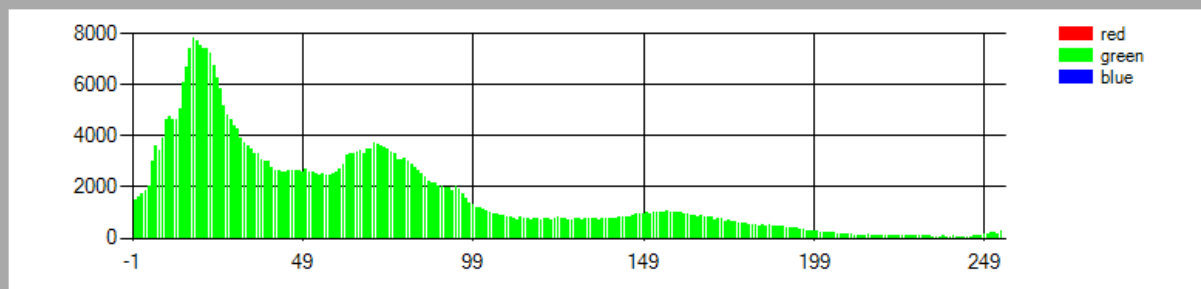
chart3

File

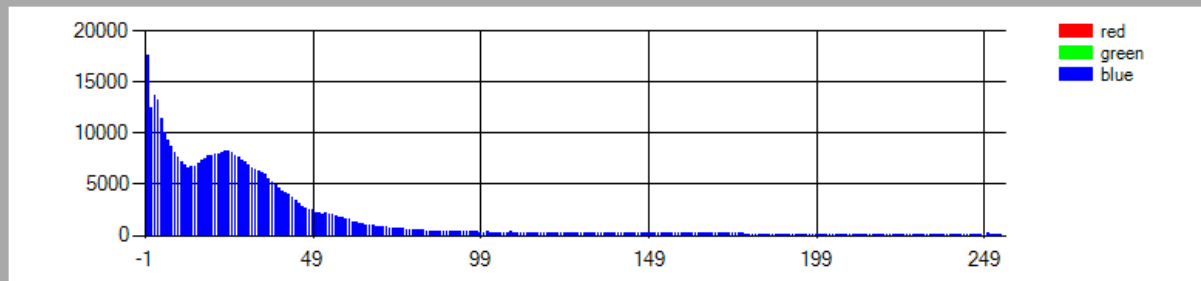
View Image RGB Flip Horizontal Kuantisasi Enhancement Transformasi Histogram Transparan LBP Filter Color Detection



Browse



Browse



Comparison

Color

Run

Histogram

```
//membaca gambar
```

```
Bitmap bmp1 = (Bitmap)boxHis1.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 = pixelColor.R;
```

```
        int green = pixelColor.G;
```

```
        int blue = pixelColor.B;
```

```
        binRed[red]++;
```

```
        binGreen[green]++;
```

```
        binBlue[blue]++;
```

```
    }
```

```
}
```

```
int[] binRed = new int[256];  
int[] binGreen = new int[256];  
int[] binBlue = new int[256];
```

```
for (int i = 0; i < 255; i++){
```

```
    this.chart1.Series["red"].Points.AddXY(i, binRed[i]);
```

```
    this.chart2.Series["green"].Points.AddXY(i, binGreen[i]);
```

```
    this.chart3.Series["blue"].Points.AddXY(i, binBlue[i]);
```

```
}
```

Form1

File

View Image | RGB | Flip Horizontal | Kuantisasi | Enhancement | Transformasi | Histogram | Transparan | LBP | Filter | Color Detection

red
green
blue

Browse

red
green
blue

Browse

red
green
blue

Comparison

Color

- Color
- Gray
- Sobel
- LBP
- LTP
- HOG
- WLD

Form1

File

View Image RGB Flip Horizontal Kuantisasi Enhancement Transformasi Histogram Transparan LBP Filter Color Detection

red
green
blue

red
green
blue

red
green
blue

Browse

Browse

Comparison

Gray

Run

Histogram

Konvolusi

<i>a</i>	<i>b</i>	<i>c</i>
<i>d</i>	<i>e</i>	<i>e</i>
<i>f</i>	<i>g</i>	<i>h</i>

Original Image
Pixels

*

<i>r</i>	<i>s</i>	<i>t</i>
<i>u</i>	<i>v</i>	<i>w</i>
<i>x</i>	<i>y</i>	<i>z</i>

Filter

$$e_{processed} = v * e + z * a + y * b + x * c + w * d + u * e + t * f + s * g + r * h$$

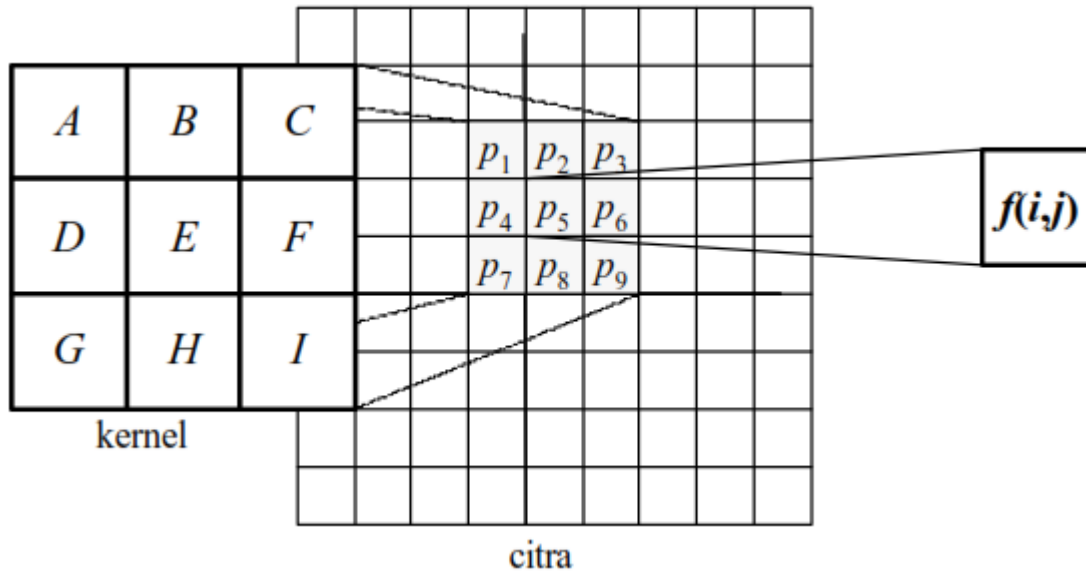
3	4	2	5	1
2	1	6	4	2
3	5	7	1	3
4	2	5	7	1
2	5	1	3	2

(i) Citra Semula

*	*	*	*	*
*	18			

(ii) hasil konvolusi

Konvolusi



4	4	3	5	4
6	6	5	5	2
5	6	6	6	2
6	7	5	5	3
3	5	2	4	4

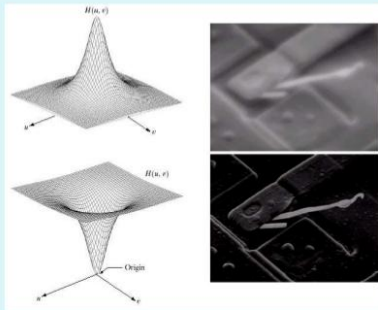
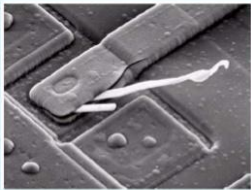
—————

	3	0	2	
	0			

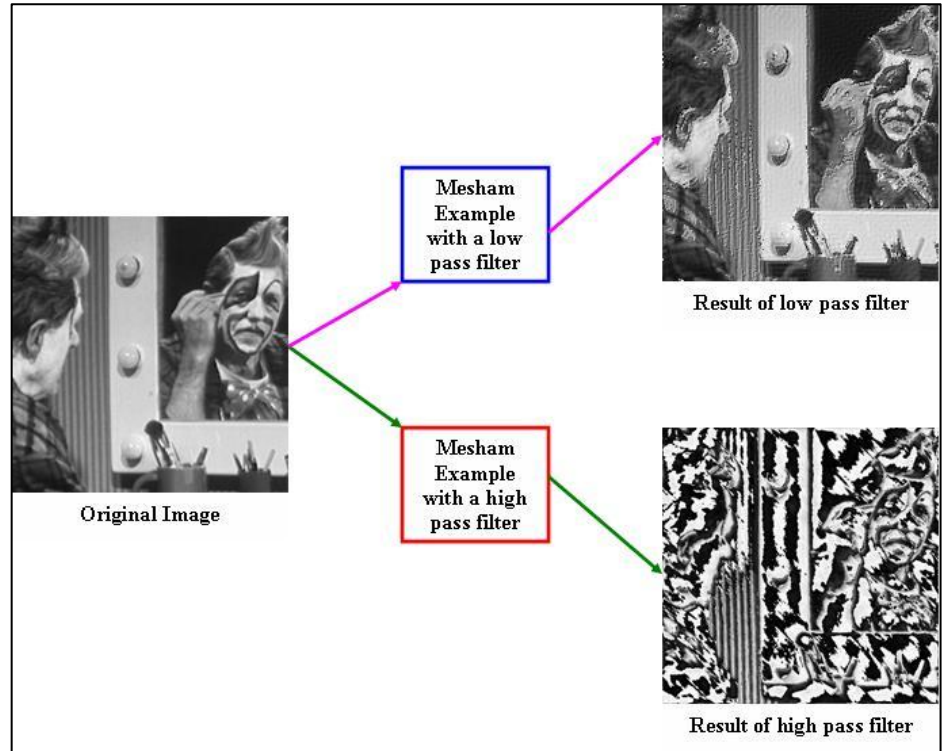
Low/High Pass Filter

Some Basic Frequency Domain Filters

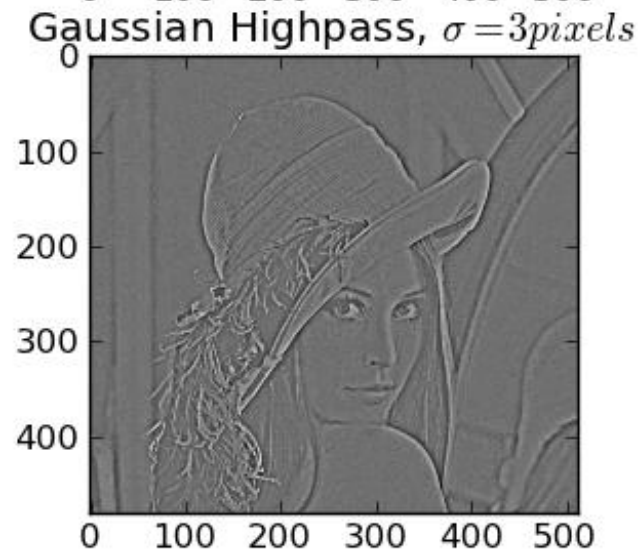
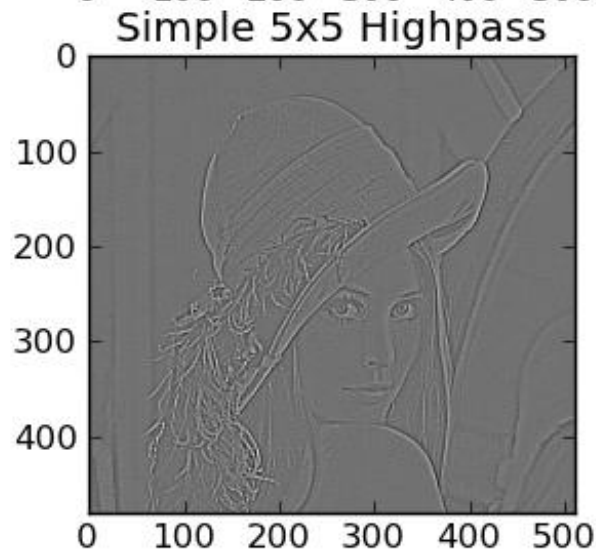
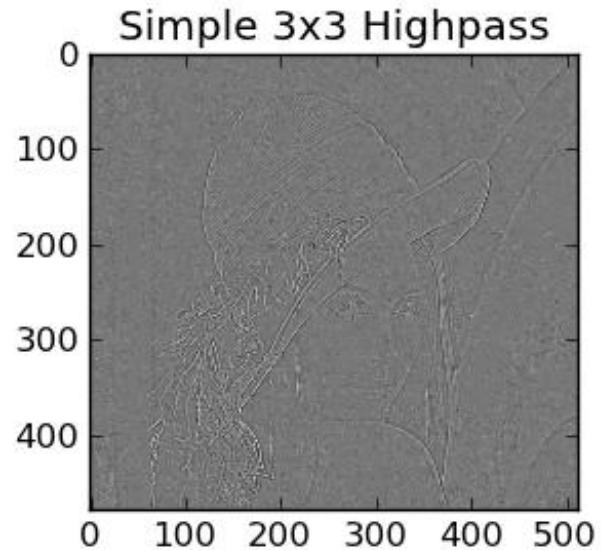
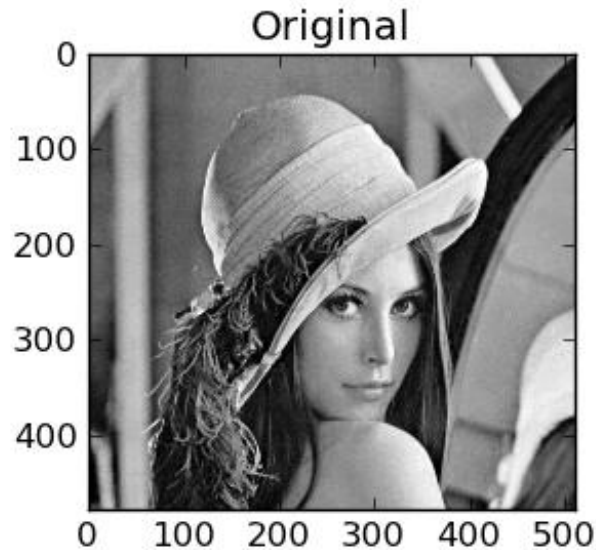
Low Pass Filter

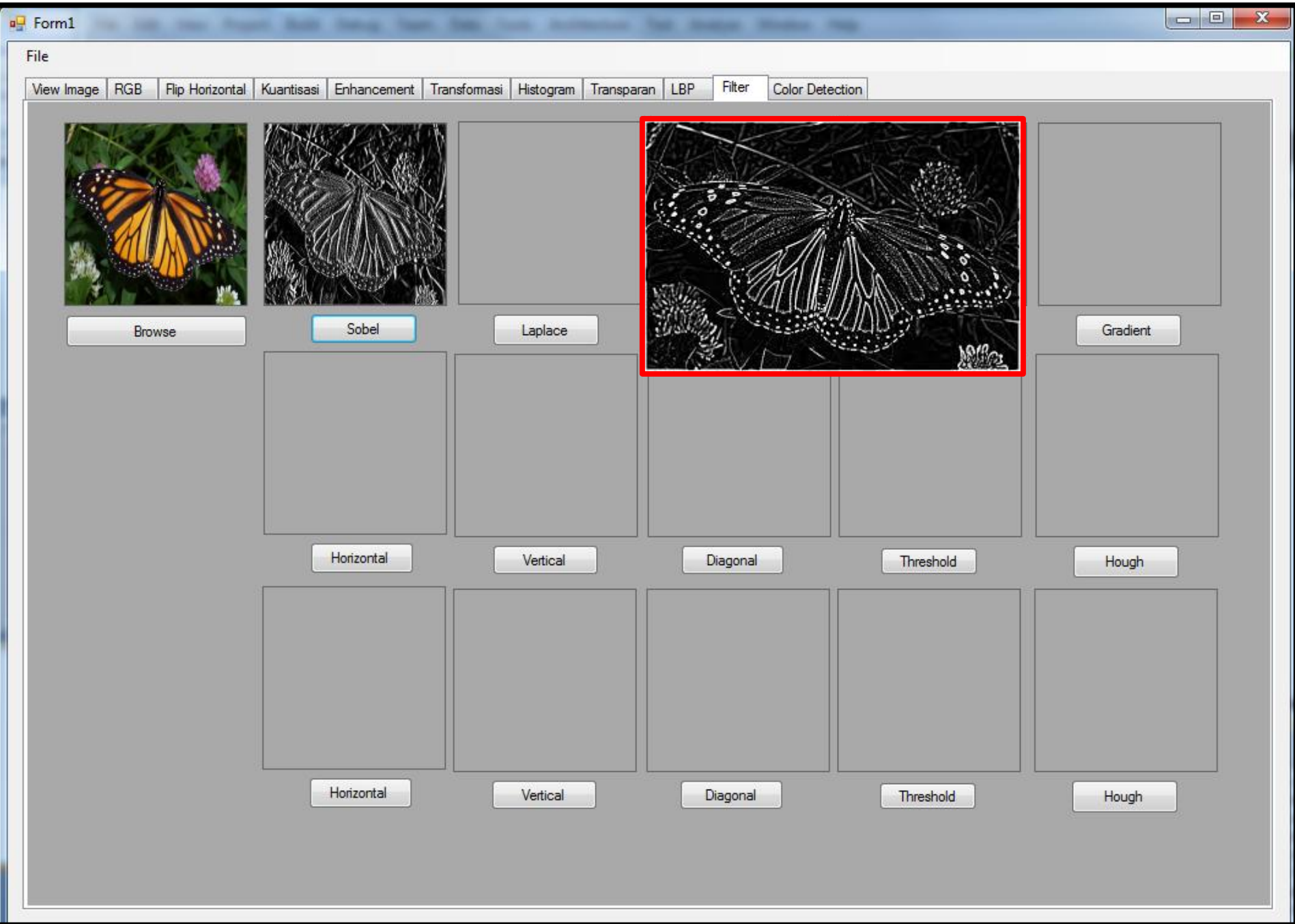


High Pass Filter



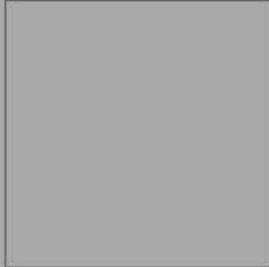
Low/High Pass Filter





File

View Image RGB Flip Horizontal Kuantisasi Enhancement Transformasi Histogram Transparan LBP Filter Color Detection

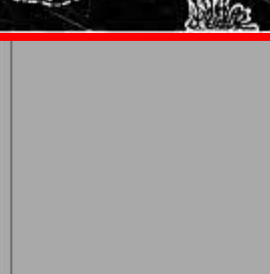
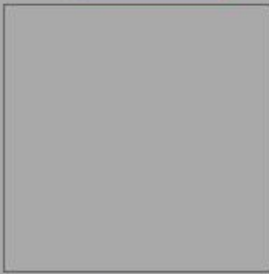


Browse

Sobel

Laplace

Gradient



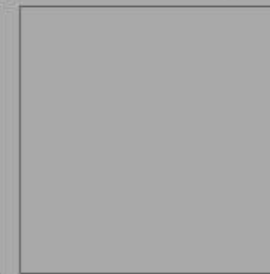
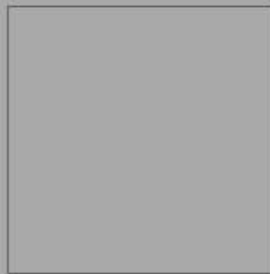
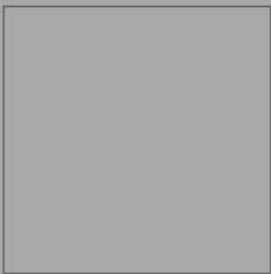
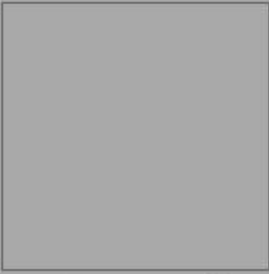
Horizontal

Vertical

Diagonal

Threshold

Hough



Horizontal

Vertical

Diagonal

Threshold

Hough