

Re: How to rotate a bitmap?

Source: <http://coding.derkeiler.com/Archive/Delphi/alt.comp.lang.borland-delphi/2005-06/msg00109.html>

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Hi,

here is my code. It is german. Some translations:

german – english
Drehen – Rotate
Winkel – Angle
Fortschritt – Progress
MussSpeichern – MustSave

```
Function GaussTrunc(r : Extended) : Integer;  
Begin  
If r < 0 Then  
GaussTrunc := Pred(Trunc(r))  
Else  
GaussTrunc := Trunc(r);  
End;
```

```
Function GaussRound(r : Extended) : Integer;  
Begin  
GaussRound := GaussTrunc(r + 0.5);  
End;
```

```
procedure TMainForm.Drehen(xFaktorX, xFaktorY, yFaktorX, yFaktorY : real;  
Aktion : String);  
var x, y,  
xMin,  
xMax,  
yMin,  
yMax,  
xHidden,  
yHidden : LongInt;  
xx, xy : Real;  
yx, yy : Array of Real;  
begin  
Enable(False);  
xMin := 0;  
xMax := 0;  
yMin := 0;
```

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```
yMax := 0;
x := GaussRound( (VisibleImage.Picture.Bitmap.Width - 1) * xFaktorX
+ (VisibleImage.Picture.Bitmap.Height - 1) *
yFaktorX);
y := GaussRound( (VisibleImage.Picture.Bitmap.Width - 1) * xFaktorY
+ (VisibleImage.Picture.Bitmap.Height - 1) *
yFaktorY);
if x < xMin then
xMin := x;
if x > xMax then
xMax := x;
if y < yMin then
yMin := y;
if y > yMax then
yMax := y;
x := GaussRound((VisibleImage.Picture.Bitmap.Width - 1) * xFaktorX);
y := GaussRound((VisibleImage.Picture.Bitmap.Width - 1) * xFaktorY);
if x < xMin then
xMin := x;
if x > xMax then
xMax := x;
if y < yMin then
yMin := y;
if y > yMax then
yMax := y;
x := GaussRound((VisibleImage.Picture.Bitmap.Height - 1) * yFaktorX);
y := GaussRound((VisibleImage.Picture.Bitmap.Height - 1) * yFaktorY);
if x < xMin then
xMin := x;
if x > xMax then
xMax := x;
if y < yMin then
yMin := y;
if y > yMax then
yMax := y;
HiddenImage.Picture.Bitmap.Width := xMax - xMin + 1;
HiddenImage.Picture.Bitmap.Height := yMax - yMin + 1;
HiddenImage.Picture.Bitmap.Canvas.Brush.Style := bsSolid;
HiddenImage.Picture.Bitmap.Canvas.Brush.Color := clWhite;
HiddenImage.Picture.Bitmap.Canvas.FillRect(
Rect(0, 0, HiddenImage.Picture.Bitmap.Width,
HiddenImage.Picture.Bitmap.Height));
SetLength(yx, VisibleImage.Picture.Bitmap.Height);
SetLength(yy, VisibleImage.Picture.Bitmap.Height);
for y := 0 to VisibleImage.Picture.Bitmap.Height - 1 do
begin
yx[y] := y * yFaktorX;
yy[y] := y * yFaktorY;
end;
FortschrittForm.Start(clWhite, clBlue, Aktion);
x := 0;
```

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```
while (x < VisibleImage.Picture.Bitmap.Width)
and FortschrittForm.Continue(
(x * 100) div (VisibleImage.Picture.Bitmap.Width - 1)) do
begin
xx := x * xFaktorX;
xy := x * xFaktorY;
y := 0;
while (y < VisibleImage.Picture.Bitmap.Height)
and FortschrittForm.Continue(
(x * 100) div (VisibleImage.Picture.Bitmap.Width - 1))
do
begin
xHidden := GaussRound(xx + yx[y]) - xMin;
yHidden := GaussRound(xy + yy[y]) - yMin;
HiddenImage.Picture.Bitmap.Canvas.Pixels[xHidden, yHidden]
:=
VisibleImage.Picture.Bitmap.Canvas.Pixels[x, y];
HiddenImage.Picture.Bitmap.Canvas.Pixels[xHidden + 1, yHidden]
:=
VisibleImage.Picture.Bitmap.Canvas.Pixels[x, y];
HiddenImage.Picture.Bitmap.Canvas.Pixels[xHidden, yHidden +
1] :=
VisibleImage.Picture.Bitmap.Canvas.Pixels[x, y];
inc(y);
end;
inc(x);
end;
if FortschrittForm.Complete then
begin
VisibleImage.Height := HiddenImage.Picture.Bitmap.Height;
VisibleImage.Width := HiddenImage.Picture.Bitmap.Width;
VisibleImage.Picture.Bitmap.Assign(HiddenImage.Picture.Bitmap);
MussSpeichern := True;
end;
Enable(True);
end;

procedure TMainForm.MnuDrehenClick(Sender: TObject);
var w : real;
begin
ParamForm.Param.Caption := 'Winkel';
ParamForm.SpinEdit.MinValue := -179;
ParamForm.SpinEdit.MaxValue := 180;
ParamForm.SpinEdit.Value := 90;
if ParamForm.ShowModal = mrOk then
if ParamForm.SpinEdit.Value <> 0 then
begin
w := ParamForm.SpinEdit.Value * arctan(1) / 45;
Drehen( cos(w), sin(w),
-sin(w), cos(w), 'Drehen');
end;
end;
```

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end;

- *Follow-Ups:*

- ◆ *Re: How to rotate a bitmap?*
◇ *From:* Heinrich Wolf

- *References:*

- ◆ *How to rotate a bitmap?*
◇ *From:* Brent W. Hughes

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