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Acessando Recursos no Mobile iOS e Android

[Victory Fernandes]

Victory Fernandes



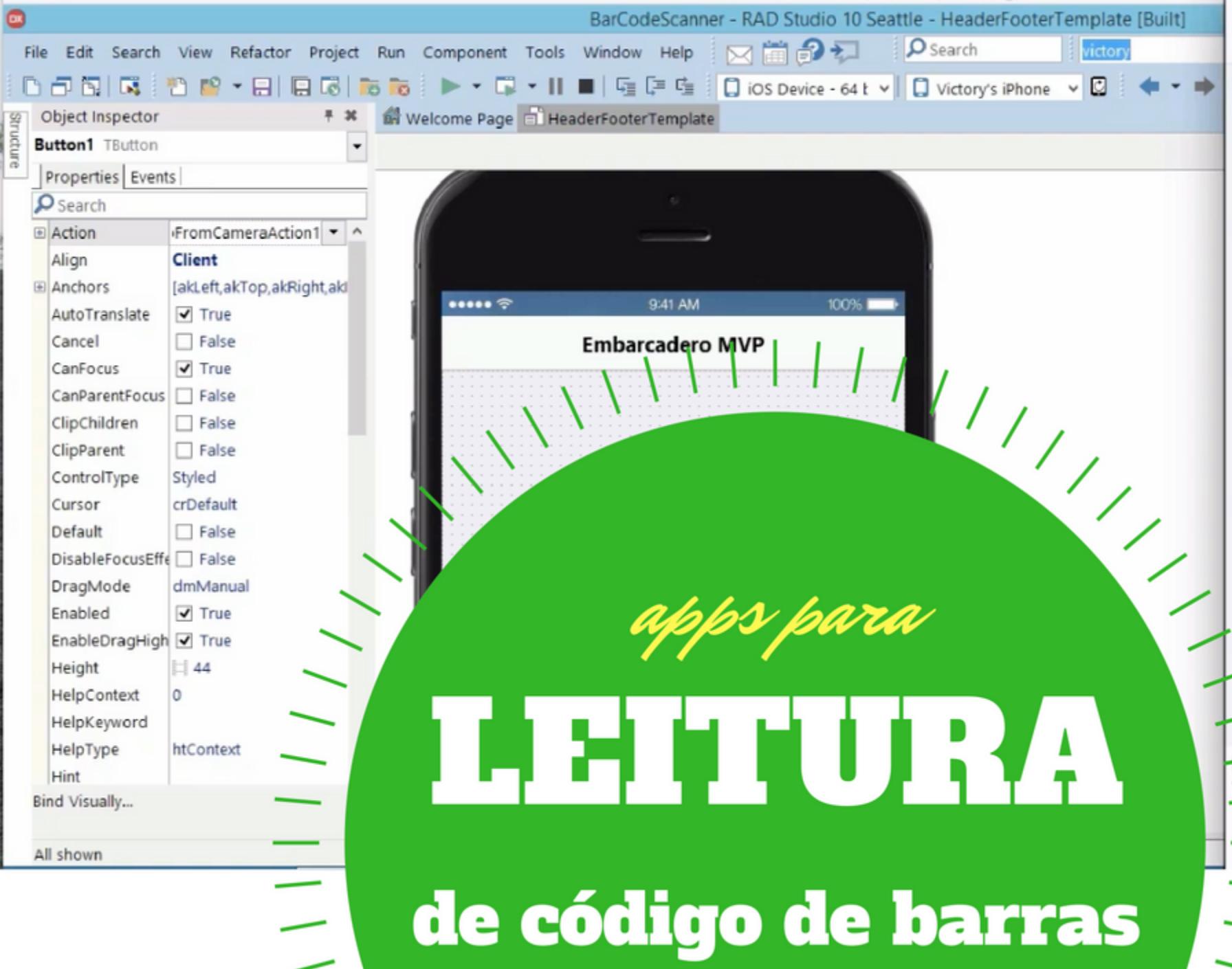
- Eu amo Delphi desde 1998
- Embarcadero MVP; Evangelista Gostice
- CTO da TKS Software
- Eng. Eletricista; Pós Docênci;a; MSc. Medicina – Neurociência





[Camera]





[Camera]

Quantas linhas de código para
fazer um App para iOS e Android
que tira foto e compartilha
em qualquer rede social?

2



[Camera]

FotoCompartilha - RAD Studio 10 Seattle - HeaderFooterTemplate

File Edit Search View Refactor Project Run Component Tools Window Help victory Search

iOS Device - 64 k

Object Inspector

ActionList1 TActionList

Search Properties Events

Images

+ LiveBindings Designer

» Name ActionList1

State asNormal

Tag 0

Tool Palette

Standard Additional System Dialogs Data Access dbExpress Datasnap Client Datasnap Server FireDAC FireDAC UI FireDAC Links FireDAC Services FireDAC ETL LiveBindings Gestures LiveBindings Misc Sensors Internet WebServices Xml FireDAC NoSQL

Editing HeaderFooterForm.ActionList1

Categories: (No Category) Media Library

Actions (FMX): TakePhotoFromCameraAction1 ShowShareSheetAction1

Action List Editor... Tira Foto Compartilha Foto

All shown 42: 5 Insert Modified Code Design History

The screenshot shows the RAD Studio 10 Seattle IDE interface. The title bar indicates the project is "FotoCompartilha" and the version is "RAD Studio 10 Seattle - HeaderFooterTemplate". The menu bar includes File, Edit, Search, View, Refactor, Project, Run, Component, Tools, Window, Help, and a search bar with the text "victory". The toolbar has various icons for file operations. The main workspace shows a "Welcome Page" and a "HeaderFooterTemplate" tab. The "HeaderFooterTemplate" tab is active, displaying a form with a dotted grid background. On the form, there is a button labeled "Tira Foto" and another labeled "Compartilha Foto". A modal dialog titled "Editing HeaderFooterForm.ActionList1" is open, showing the properties of an "ActionList1" component. The "Categories" section lists "(No Category)" and "Media Library". The "Actions (FMX)" section lists "TakePhotoFromCameraAction1" and "ShowShareSheetAction1". The status bar at the bottom shows "All shown", "42: 5", "Insert", "Modified", "Code", "Design", and "History". The right side of the interface features the "Tool Palette" with sections for Standard, Additional, System, Dialogs, Data Access, dbExpress, Datasnap Client, Datasnap Server, FireDAC, FireDAC UI, FireDAC Links, FireDAC Services, FireDAC ETL, LiveBindings, Gestures, LiveBindings Misc, Sensors, Internet, WebServices, Xml, and FireDAC NoSQL.

[Camera]

FotoCompartilha - RAD Studio 10 Seattle - HeaderFooterTemplate

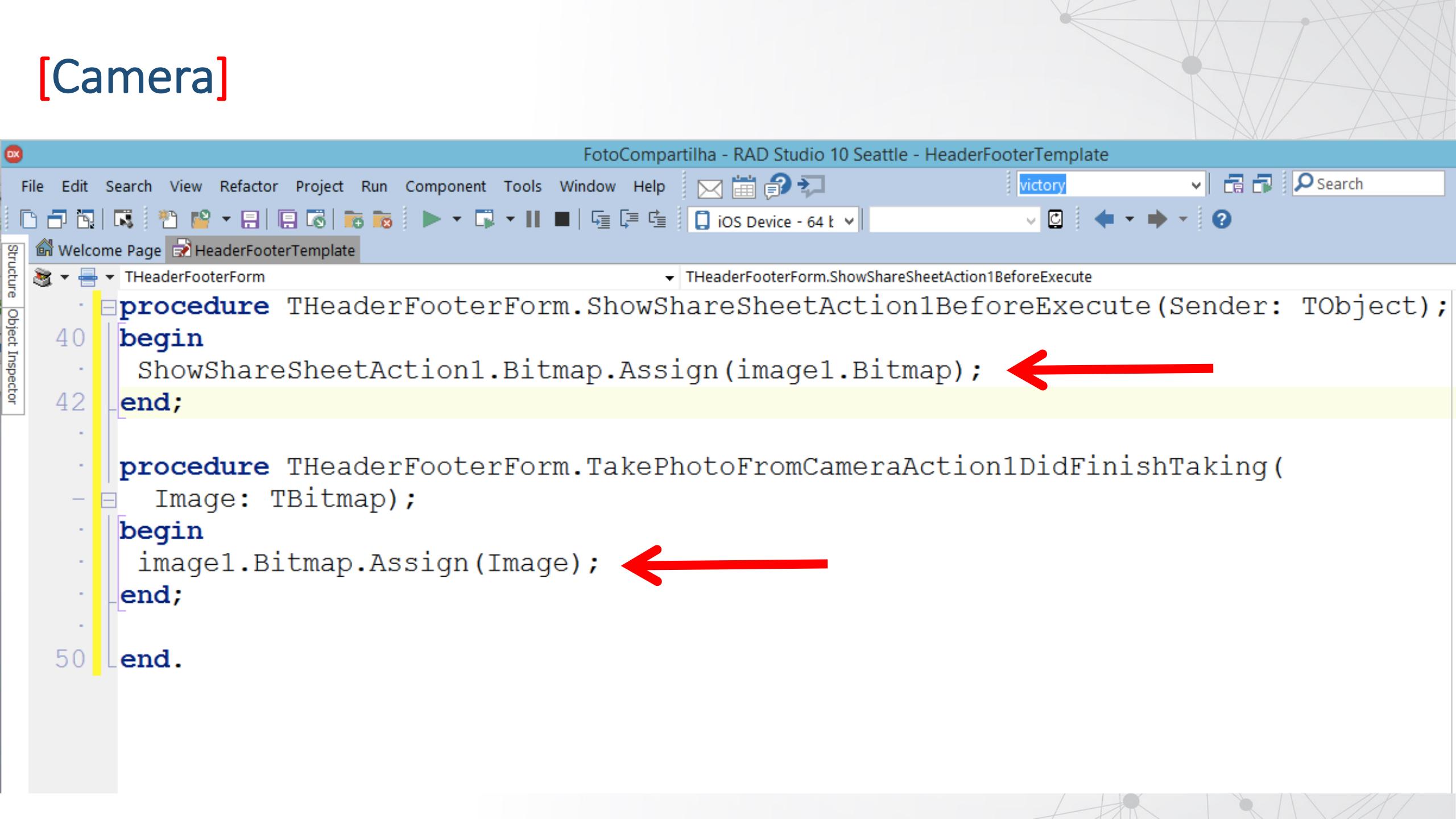
```
File Edit Search View Refactor Project Run Component Tools Window Help | 📎 🗓 🗣 🚶 | victory | Search
Welcome Page HeaderFooterTemplate
Structure Object Inspector
```

THeaderFooterForm

```
procedure THeaderFooterForm.ShowShareSheetAction1BeforeExecute(Sender: TObject);
begin
  ShowShareSheetAction1.Bitmap.Assign(image1.Bitmap);
end;

procedure THeaderFooterForm.TakePhotoFromCameraAction1DidFinishTaking(
  Image: TBitmap);
begin
  image1.Bitmap.Assign(Image);
end;

end.
```



The screenshot shows the RAD Studio 10 Seattle IDE interface with the project 'FotoCompartilha' open. The code editor displays Delphi code for a form named 'THeaderFooterForm'. Two specific lines of code are highlighted with red arrows pointing to them:

- The first arrow points to the line `ShowShareSheetAction1.Bitmap.Assign(image1.Bitmap);` in the `ShowShareSheetAction1BeforeExecute` event handler.
- The second arrow points to the line `image1.Bitmap.Assign(Image);` in the `TakePhotoFromCameraAction1DidFinishTaking` event handler.

The code also includes a call to `image1.Bitmap.Assign` within the main form's body, which is highlighted with a yellow background.

@victoryjorge



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[Camera]

BARCODE - RAD Studio 10 Seattle - HeaderFooterTemplate

File Edit Search View Refactor Project Run Component Tools Window Help victory Search

Object Inspector

Button1 TButton

Properties Events

Search

Action TakePhotoFromCamer: Client [akLeft,akTop,akRight,akBottom] True True False False False False False False False dmManual Enabled True EnableDragHigh True Height 44 HelpContext 0

Welcome Page HeaderFooterTemplate

Style: iOS View: Master

Leitor de Código de Barras

FObr

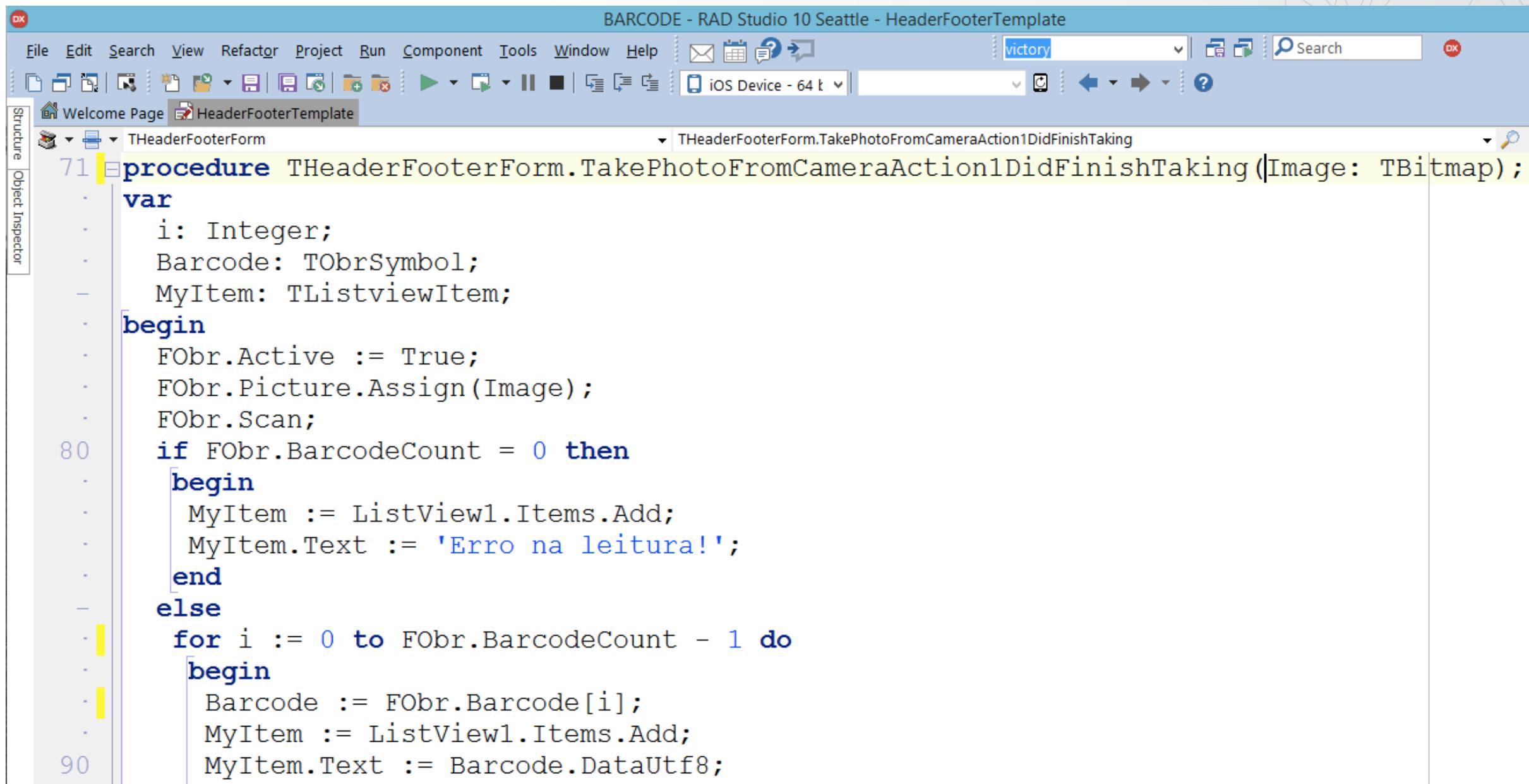
ActionList1

Tool Palette

Standard Additional System Dialogs Data Access dbExpress Datasnap Client Datasnap Server FireDAC FireDAC UI FireDAC Links FireDAC Services FireDAC ETL LiveBindings Gestures LiveBindings Misc Sensors Internet WebServices Xml

The screenshot shows the RAD Studio 10 Seattle IDE interface. The title bar reads "BARCODE - RAD Studio 10 Seattle - HeaderFooterTemplate". The menu bar includes File, Edit, Search, View, Refactor, Project, Run, Component, Tools, Window, Help, and a search field with the text "victory". The toolbar has icons for file operations like Open, Save, Print, and a search icon. The main workspace displays a form titled "Leitor de Código de Barras" (Barcode Reader). Inside the form, there is a barcode icon labeled "FObr" and an ActionList1 component. The left side features the Object Inspector showing properties for a selected TButton control named "Button1". The right side shows the Tool Palette with various Delphi components categorized under Standard, Additional, System, Dialogs, Data Access, dbExpress, Datasnap Client, Datasnap Server, FireDAC, FireDAC UI, FireDAC Links, FireDAC Services, FireDAC ETL, LiveBindings, Gestures, LiveBindings Misc, Sensors, Internet, WebServices, and Xml.

[Camera]



The screenshot shows the RAD Studio 10 Seattle IDE interface. The title bar reads "BARCODE - RAD Studio 10 Seattle - HeaderFooterTemplate". The menu bar includes File, Edit, Search, View, Refactor, Project, Run, Component, Tools, Window, Help. The toolbar has various icons for file operations and project management. The status bar shows "iOS Device - 64 t". The left sidebar has "Structure" and "Object Inspector" tabs, with "HeaderFooterTemplate" selected. The main code editor window displays Delphi-style VCL code:

```
procedure THeaderFooterForm.TakePhotoFromCameraAction1DidFinishTaking(Image: TBitmap);
var
  i: Integer;
  Barcode: TObrSymbol;
  MyItem: TListViewItem;
begin
  FObr.Active := True;
  FObr.Picture.Assign(Image);
  FObr.Scan;
  if FObr.BarcodeCount = 0 then
    begin
      MyItem := ListView1.Items.Add;
      MyItem.Text := 'Erro na leitura!';
    end
  else
    for i := 0 to FObr.BarcodeCount - 1 do
      begin
        Barcode := FObr.Barcode[i];
        MyItem := ListView1.Items.Add;
        MyItem.Text := Barcode.DataUtf8;
      end;
end;
```

- www.winsoft.sk/fobr.htm
- US\$60,00
- Utiliza Zbar <http://zbar.sourceforge.net/>

[Camera]

- C:\Users\Public\Documents\Embarcadero\Studio
 \VERSAO\Samples\MobileSnippets\CameraComp
onent
- [http://docwiki.embarcadero.com/CodeExamples/
Berlin/en/FMX.CameraComponent_Sample](http://docwiki.embarcadero.com/CodeExamples/Berlin/en/FMX.CameraComponent_Sample)

[Camera]

CameraComponent - RAD Studio 10 Seattle - uMain

File Edit Search View Refactor Project Run Component Tools Window Help

victory

Search

Object Inspector

btnStartCamera TButton

Properties Events

Search

Action Align Anchors AutoTranslate Cancel CanFocus CanParentFocus ClipChildren ClipParent ControlType Cursor Default DisableFocusEffect DragMode Enabled EnableDragHigh Height HelpContext HelpKeyword

Top [akLeft,akTop,akRight] True False True False False False Styled crDefault False False dmManual True True 44 0

Style: iOS View: Master

Welcome Page uMain

Tool Palette

Standard Additional System Dialogs Data Access dbExpress Datasnap Client Datasnap Server FireDAC FireDAC UI FireDAC Links FireDAC Services FireDAC ETL LiveBindings Gestures LiveBindings Misc Sensors Internet WebServices Xml FireDAC NoSQL

Start Camera CameraComponent Stop Camera

Camera Type:

Front Back

Camera Resolutions:

Priorize Resolution

Low Medium High Photo

lblCurrentResolution

Camera Torch Type:

The screenshot shows the RAD Studio 10 Seattle IDE interface with the title bar "CameraComponent - RAD Studio 10 Seattle - uMain". The menu bar includes File, Edit, Search, View, Refactor, Project, Run, Component, Tools, Window, Help, and a search bar with the text "victory". The main workspace displays a form titled "uMain" with a "Welcome Page" tab selected. The form contains several components: a TButton labeled "Start Camera" with a video camera icon, a TButton labeled "Stop Camera", a TPanel labeled "Camera Type:" containing two radio buttons "Front" and "Back", a TPanel labeled "Camera Resolutions:" containing four radio buttons "Low", "Medium", "High", and "Photo", and a TLabel labeled "lblCurrentResolution". The left side features the Object Inspector showing the "btnStartCamera" component and its properties like Align, Anchors, and Style. The right side shows the Tool Palette with various component categories.

[Camera]

CameraComponent - RAD Studio 10 Seattle - uMain

File Edit Search View Refactor Project Run Component Tools Window Help

victory

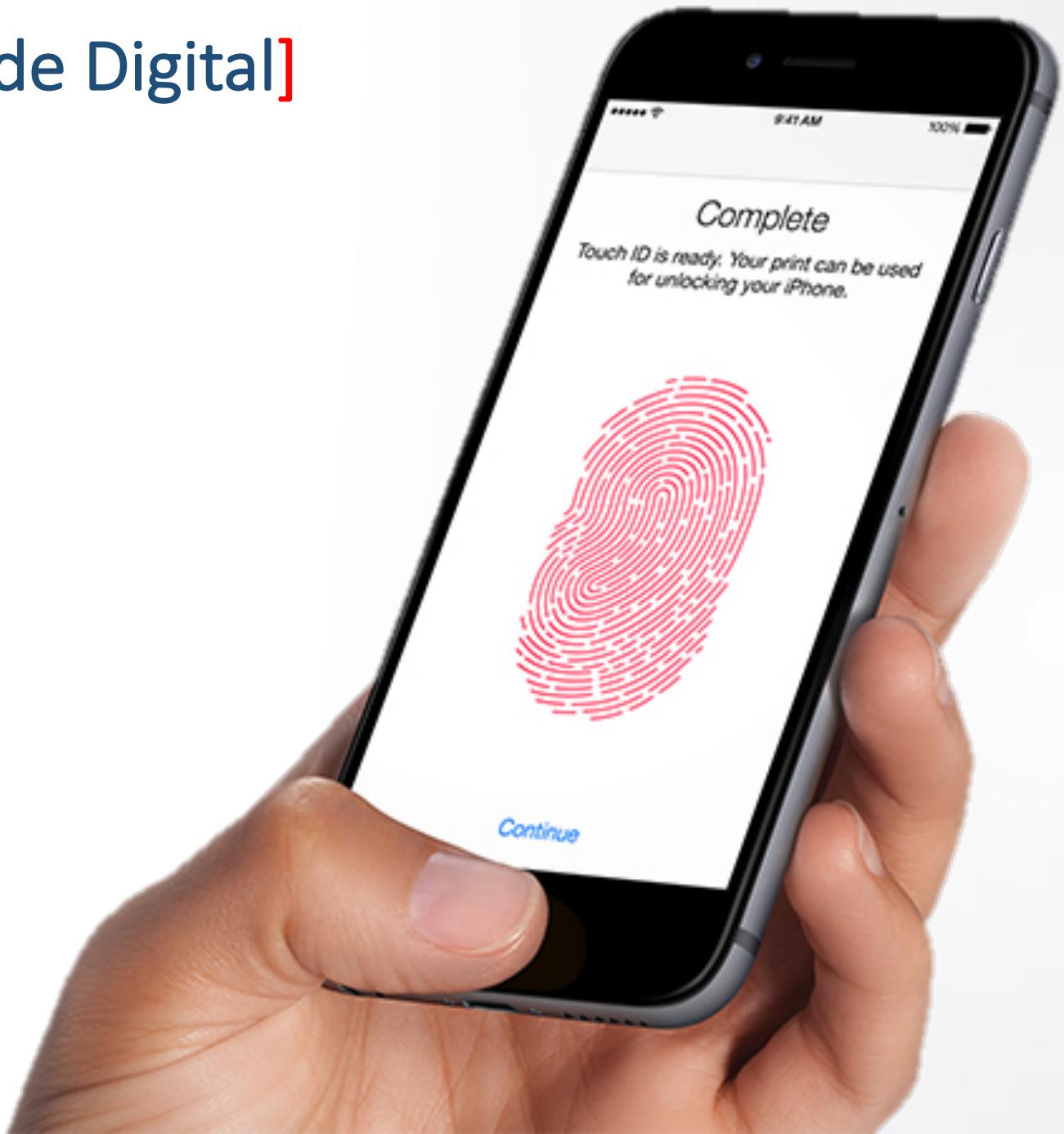
32-bit Windows

Welcome Page uMain

TCameraComponentForm

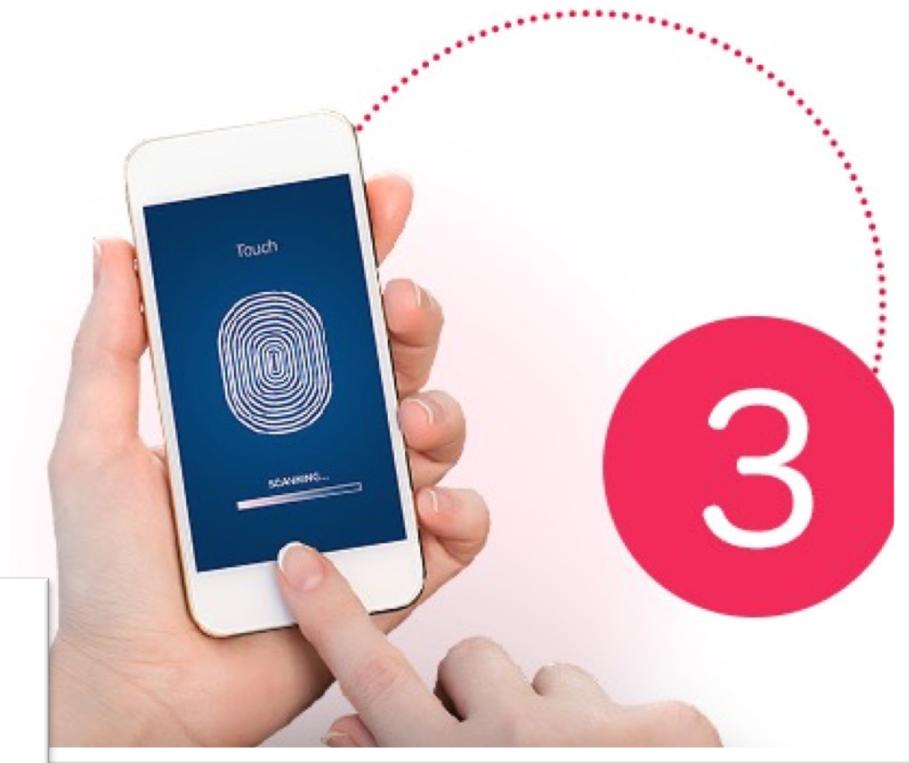
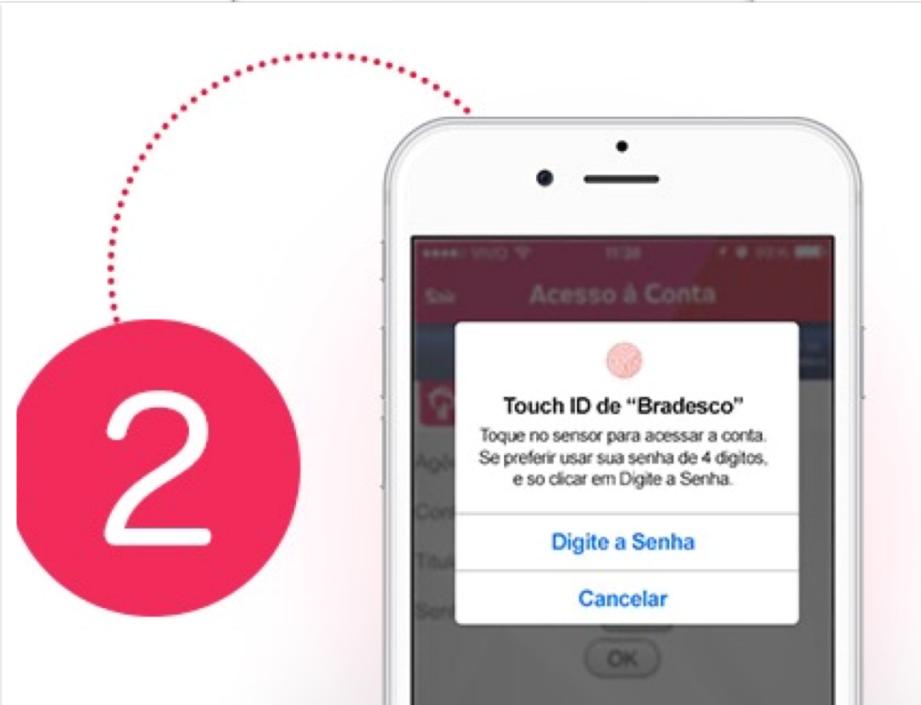
```
procedure TCameraComponentForm.btnFrontCameraClick(Sender: TObject);
var
  LActive: Boolean;
begin
  { Select Front Camera }
  LActive := CameraComponent.Active;
  try
    CameraComponent.Active := False;
    CameraComponent.Kind := TCameraKind.FrontCamera;
  finally
    CameraComponent.Active := LActive;
    FillResolutions;
  end;
end;
```

[Biometria de Digital]



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[Biometria de Digital]



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[Biometria de Digital]

- 2011: Motorola Mobility Atrix, primeiro celular com o recurso
- 2012: Apple adquire AuthenTec por \$356 milhões
- 2013: Lançamento do iPhone5s com recurso TouchID
- 2015: Samsung Galaxy Alpha
- 2014: iPhone 6s tem versão 2nd geração duas vezes mais rápida
- <http://www.tecmundo.com.br/biometria/104634-padro-industria-21-smartphones-possuem-leitor-digitais.htm>

[Apple TouchID]

- Cristal de safira que não arranha
- Anel metálico detecta o dedo sem pressionar
- Sensor capacitivo com resolução de 500 pixel/in
- Permite armazenar até 5 digitais lidas em qualquer posição



[Apple TouchID]

- <https://bitbucket.org/allesbeste/delphi-touchid-wrapper-for-delphi/overview>
- <http://community.embarcadero.com/blogs/blog-menu/entry/delphi-touchid-wrapper-for-ios>

[Apple TouchID]

TouchID - RAD Studio 10 Seattle - Unit1

File Edit Search View Refactor Project Run Component Tools Window Help

victory

Search

Object Inspector

Form1 TForm1

Search

Properties Events

Action
ActiveControl
BiDiMode
Border
BorderIcons
BorderStyle
Caption
ClientHeight
ClientWidth
Cursor
Fill
FormFactor
FormFamily
FormStyle
FullScreen
Height
Left
LiveBindings Des

bdLeftToRight
(TFormBorder)
[biSystemMenu,biMinim
Sizeable
Form1
480
640
crDefault
(Brush)
(TFormFactor)
Normal
 False
480
0
LiveBindings Designer

Autenticar Usuário

Status...

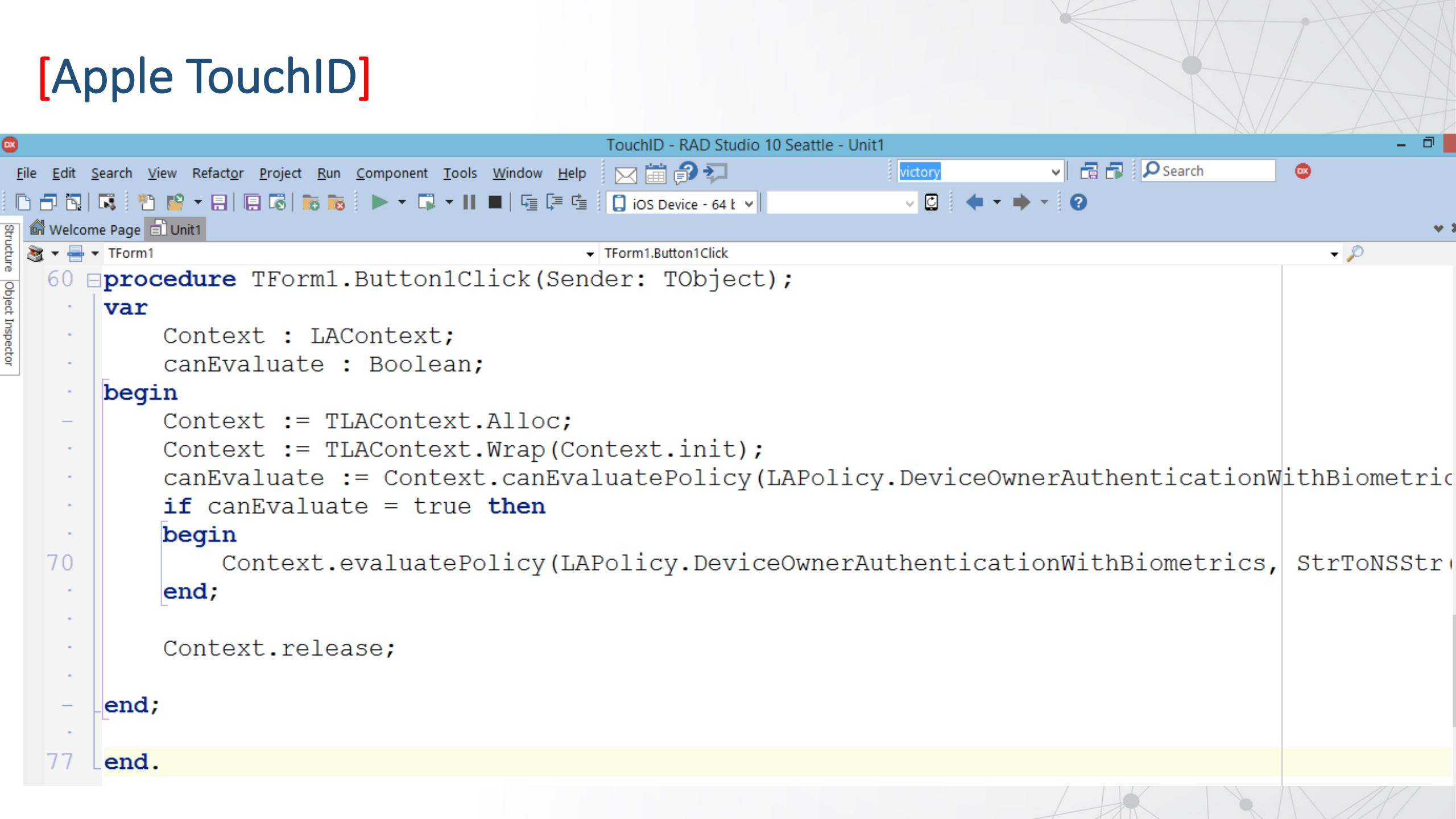
Style: iOS

View: Master

Tool Palette

- Standard
- Additional
- System
- Dialogs
- Data Access
- dbExpress
- Datasnap Client
- Datasnap Server
- FireDAC
- FireDAC UI
- FireDAC Links
- FireDAC Services
- FireDAC ETL
- LiveBindings
- Gestures
- LiveBindings Misc
- Sensors
- Internet
- WebServices
- Xml

[Apple TouchID]



The screenshot shows the RAD Studio 10 Seattle IDE interface. The title bar reads "TouchID - RAD Studio 10 Seattle - Unit1". The menu bar includes File, Edit, Search, View, Refactor, Project, Run, Component, Tools, Window, Help. The toolbar has various icons for file operations like Open, Save, Print, and a search bar with the text "victory". The status bar at the bottom shows "TForm1.Button1Click" and "iOS Device - 64 t".

The code editor displays Delphi-style Pascal code:

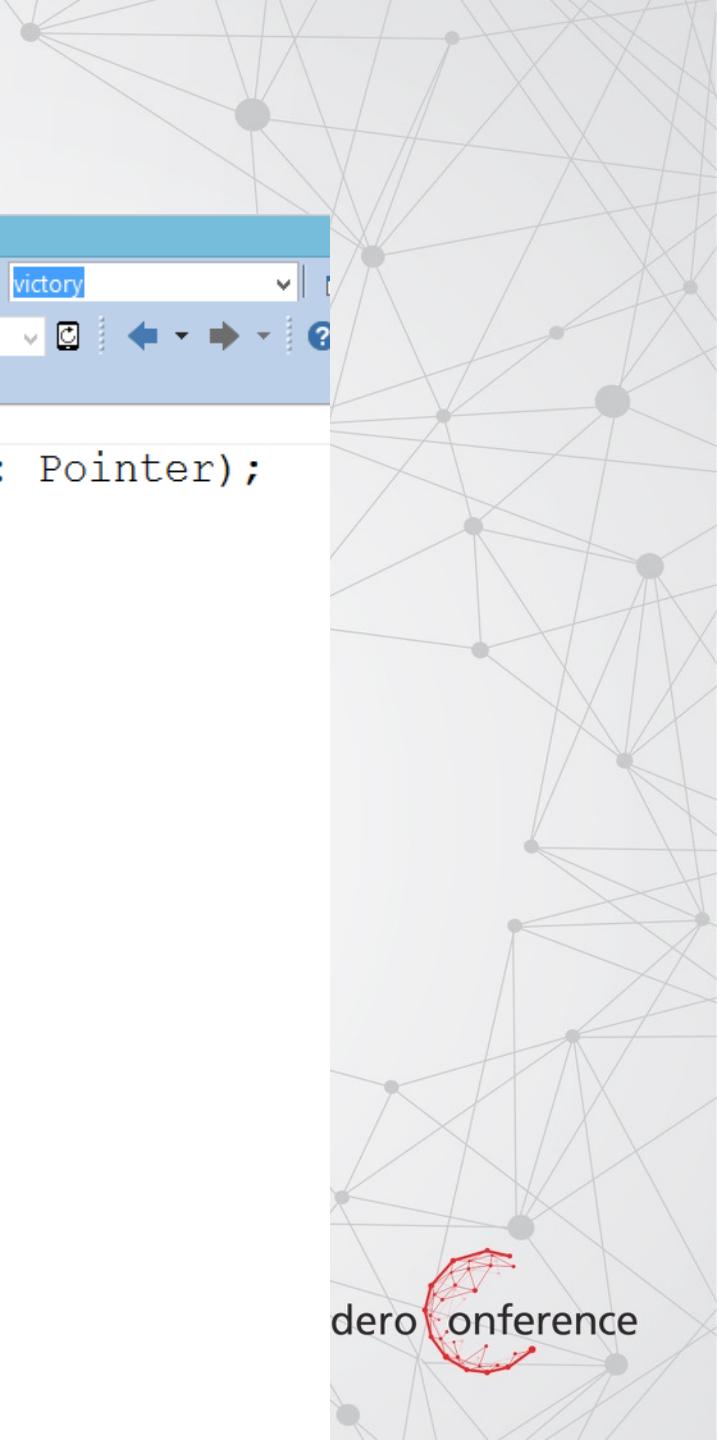
```
procedure TForm1.Button1Click(Sender: TObject);
var
  Context : LAContext;
  canEvaluate : Boolean;
begin
  Context := TLAContext.Alloc;
  Context := TLAContext.Wrap(Context.init);
  canEvaluate := Context.canEvaluatePolicy(LAPolicy.DeviceOwnerAuthenticationWithBiometrics);
  if canEvaluate = true then
  begin
    Context.evaluatePolicy(LAPolicy.DeviceOwnerAuthenticationWithBiometrics, StrToNSstr);
  end;

  Context.release;

end;
end.
```

The code is annotated with line numbers 60, 70, and 77. The "Object Inspector" panel on the left is visible, showing "TForm1" selected. The "Structure" panel on the far left shows the project structure with "Welcome Page" and "Unit1".

[Apple TouchID]



A screenshot of the RAD Studio 10 Seattle IDE interface. The title bar reads "TouchID - RAD Studio 10 Seattle - Unit1". The menu bar includes File, Edit, Search, View, Refactor, Project, Run, Component, Tools, Window, Help. The toolbar has various icons for file operations and project management. The status bar shows "iOS Device - 64 bit". The code editor displays Delphi/Pascal code for handling TouchID responses:

```
procedure TForm1.TouchIDReply(success: Pointer; error: Pointer);
var
  iSuccess : Integer;
  bSuccess : Boolean;
begin
  TThread.Synchronize(nil,
    procedure begin
      bSuccess := false;
      if not Assigned(error) then
        begin
          if Assigned(success) then
            begin
              iSuccess := Integer(success);
              bSuccess := (iSuccess = 1);
            end;
        end;
      if bSuccess then
        begin
          // Success code
          Label1.Text := 'Usuario Autenticado!';
        end;
    end);
end;
```

[Acelerômetro e Giroscópio]

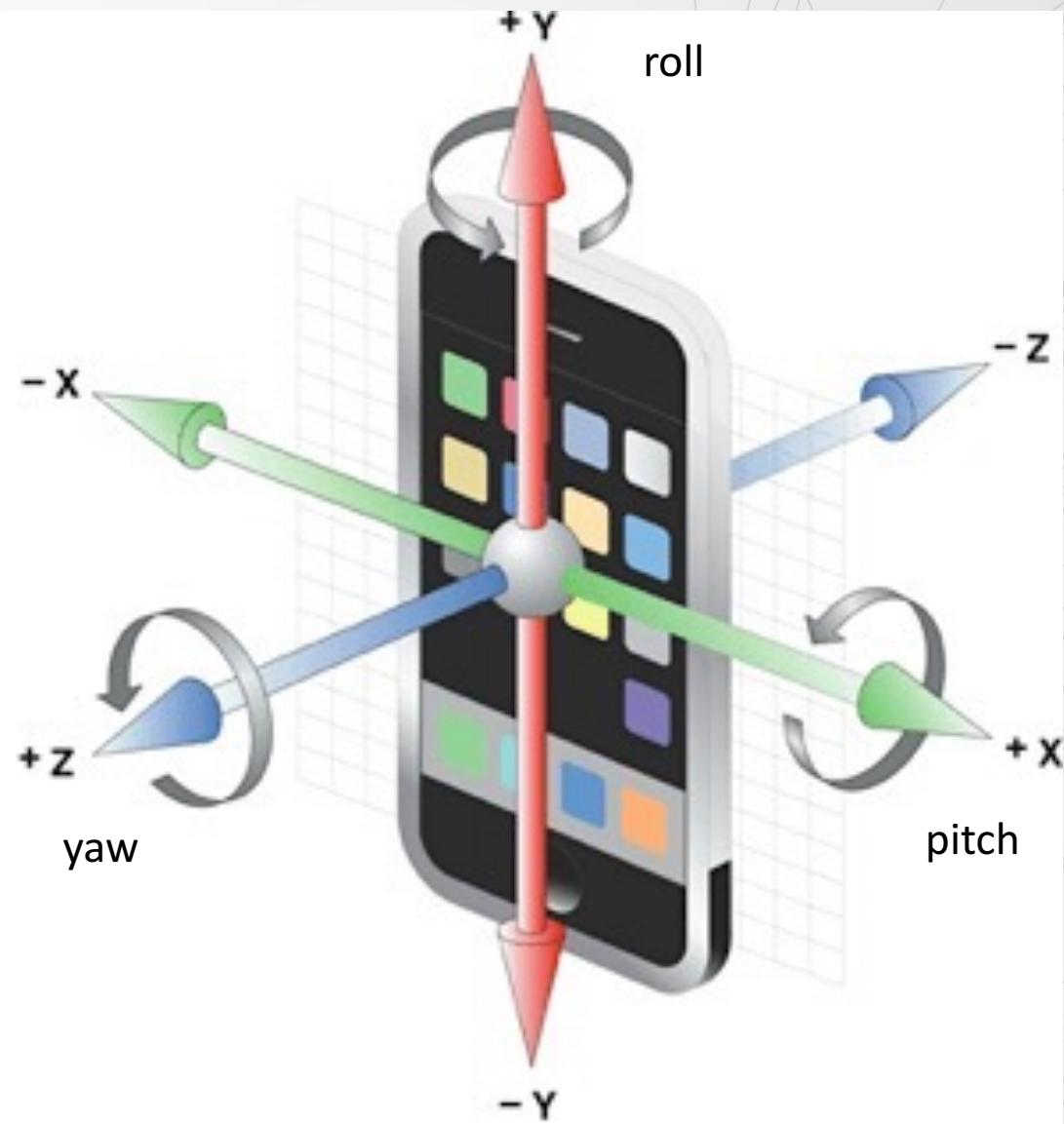
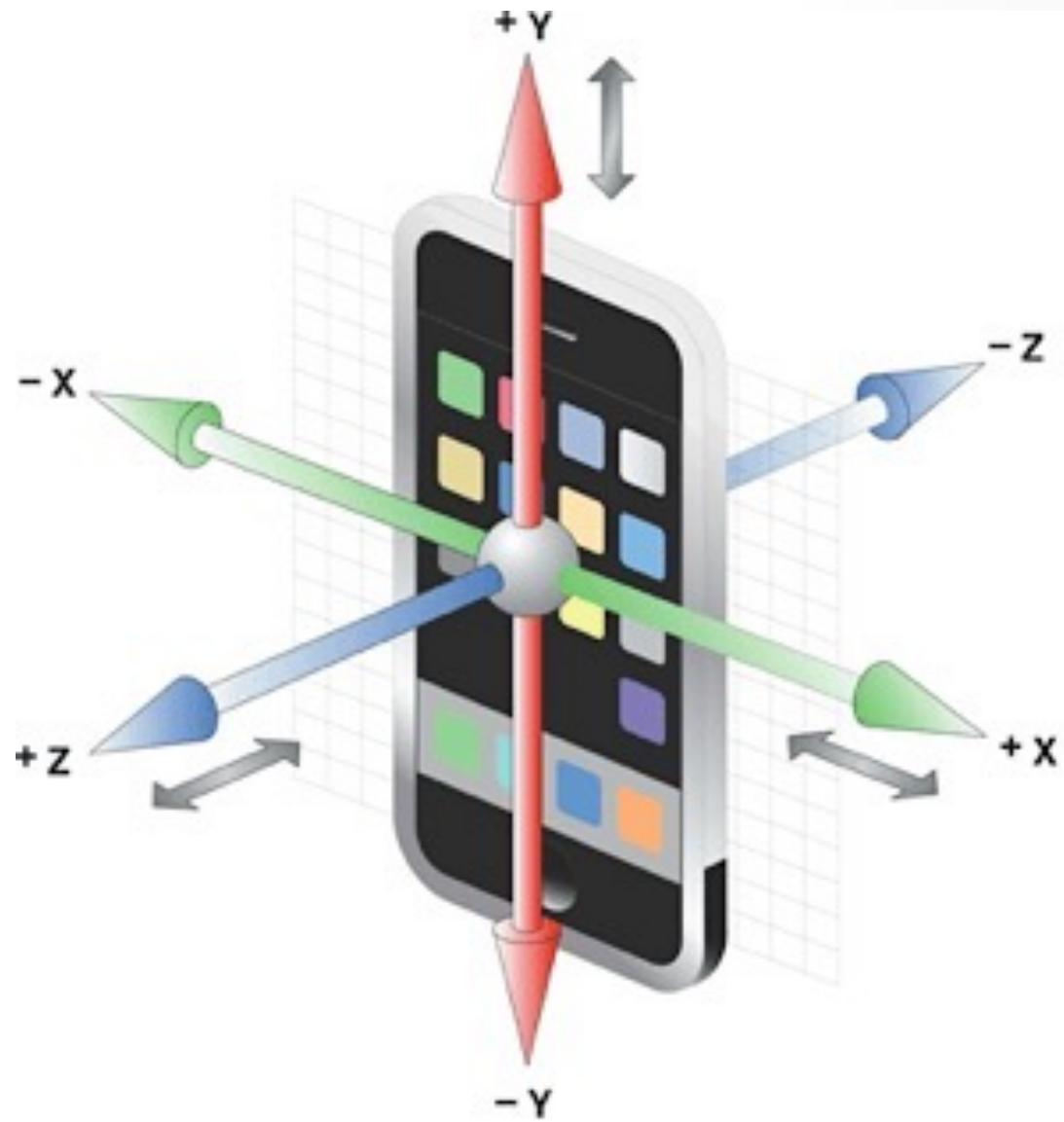


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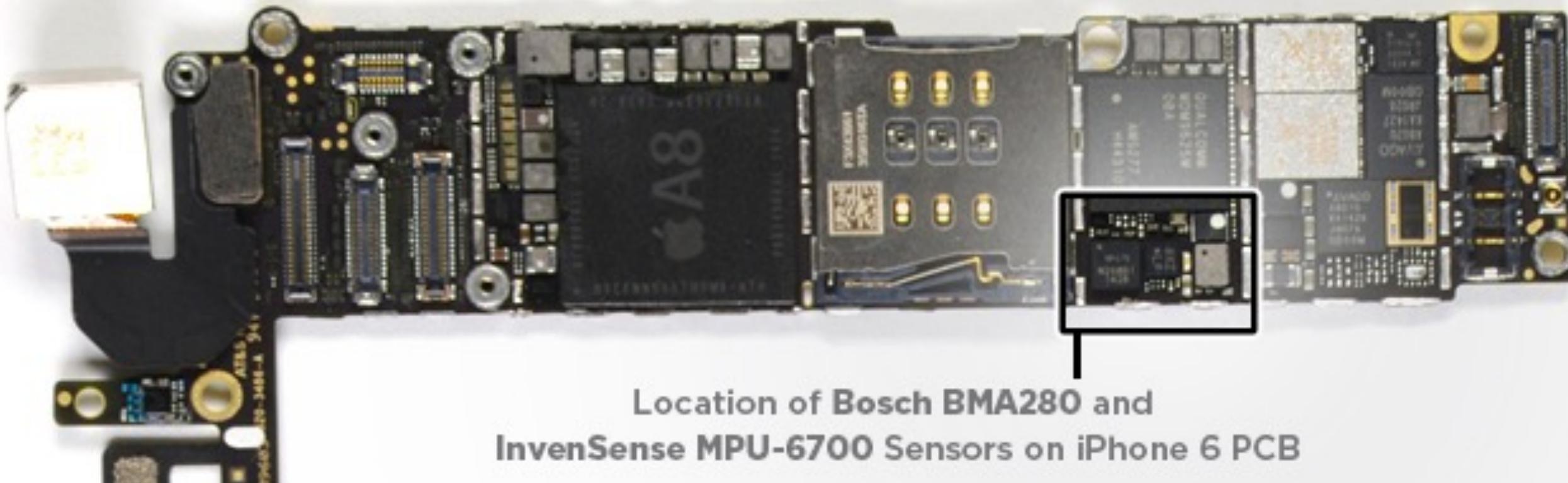
[Acelerômetro e Giroscópio]



[Acelerômetro e Giroscópio]



[Acelerômetro e Giroscópio]



[Acelerômetro e Giroscópio]

Parameter	Bosch BMA280	InvenSense MPU-6500	Units
ADC range	14	16	bit
Acceleration range	$\pm 2, \pm 4, \pm 8, \pm 16$	$\pm 2, \pm 4, \pm 8, \pm 16$	g
Maximum sensitivity	4096	16684	LSB/g
Temperature sensitivity	0.015	0.026	%/K
Cross axis sensitivity	1	2	%
Nonlinearity	0.5	0.5	%
Output data rate	2000	4000	Hz
Cold start up time	3	30	ms
Sleep mode start up time	1	20	ms
Accelerometer start up time from sleep mode	1.3	20	ms
Accelerometer supply current in normal mode	130	450	μA

[Acelerômetro]

- C:\Users\Public\Documents\Embarcadero\Studio
 \VERSAO\Samples\MobileSnippets\Accelerome
ter
- [http://docwiki.embarcadero.com/CodeExamples/
Berlin/en/FMX.Accelerometer_Sample](http://docwiki.embarcadero.com/CodeExamples/Berlin/en/FMX.Accelerometer_Sample)

[Acelerômetro]

Accelerometer - RAD Studio 10 Seattle - uMain

File Edit Search View Refactor Project Run Component Tools Window Help

victory

Android

Object Inspector

ListBox1 TListBox

Search

Properties Events

Enabled True

EnableDragHigh True

GroupingKind Grouped

Height 509

HelpContext 0

HelpKeyword

HelpType htContext

Hint

HitTest True

Images

ItemHeight 0

ItemIndex -1

Items (TStrings)

ItemWidth 0

ListStyle Vertical

LiveBindings LiveBindings

LiveBindings Designer LiveBindings Designer

Locked False

Margins (TBounds)

MultiSelectStyle None

Tool Palette

Standard

Additional

System

Dialogs

Data Access

dbExpress

Datasnap Client

Datasnap Server

FireDAC

FireDAC UI

FireDAC Links

FireDAC Services

FireDAC ETL

LiveBindings

Gestures

LiveBindings Misc

Sensors

Internet

WebServices

Xml

FireDAC NoSQL

Net

Accelerometer

Accelerometer Sensor:

Acceleration X:

Acceleration Y:

Acceleration Z:

Angle X:

Angle Y:

Angle Z: Timer1 MotionSensor1

Motion:

Speed:

[Acelerômetro]

Accelerometer - RAD Studio 10 Seattle - uMain

```
File Edit Search View Refactor Project Run Component Tools Window Help | victory | Search | DX
Welcome Page uMain
TAccelerometerForm TAccelerometerForm.Timer1Timer
procedure TAccelerometerForm.Timer1Timer(Sender: TObject);
var
  LProp: TCustomMotionSensor.TProperty;
begin
  for LProp in MotionSensor1.Sensor.AvailableProperties do
  begin
    { get the data from the sensor }
    case LProp of
      TCustomMotionSensor.TProperty.AccelerationX:
      begin
        lbAccelerationX.Visible := True;
        lbAccelerationX.Text := Format('Acceleration X: %6.2f', [MotionSensor1.Sensor.Accel
      end;
      TCustomMotionSensor.TProperty.AccelerationY:
      begin
        lbAccelerationY.Visible := True;
        lbAccelerationY.Text := Format('Acceleration Y: %6.2f', [MotionSensor1.Sensor.Accel
      end;
    end;
  end;
end;
```

[Giroscópio]

- C:\Users\Public\Documents\Embarcadero\Studio
 \VERSAO\Samples\MobileSnippets\Gyroscope
- [http://docwiki.embarcadero.com/CodeExamples/
Berlin/en/FMX.Gyroscope_Sample](http://docwiki.embarcadero.com/CodeExamples/Berlin/en/FMX.Gyroscope_Sample)

[Giroscópio]

Gyroscope - RAD Studio 10 Seattle - uMain

File Edit Search View Refactor Project Run Component Tools Window Help

victory

Search

Object Inspector

GyroscopeForm TGyroscopeForm

Properties Events

BiDiMode bdLeftToRight
Border (TFormBorder)
BorderIcons [biSystemMenu,biMinim
BorderStyle Sizeable
Camera
Caption
ClientHeight 567
ClientWidth 384
Color White
Cursor crDefault
FormFactor (TFormFactor)
FormFamily
FormStyle Normal
Height 567
Left 0
LiveBindings Designer LiveBindings Designer
Multisample FourSamples
Name GyroscopeForm
Padding (TBounds)
Position DefaultPosOnly
StyleBook

Tool Palette

Standard Additional System Dialogs Data Access dbExpress Datasnap Client Datasnap Server FireDAC FireDAC UI FireDAC Links FireDAC Services FireDAC ETL LiveBindings Gestures LiveBindings Misc Sensors Internet WebServices Xml FireDAC NoSQL Net REST Client

Style: Android View: Master

Welcome Page uMain

Gyro

The image shows the RAD Studio 10 Seattle IDE interface. The title bar reads "Gyroscope - RAD Studio 10 Seattle - uMain". The menu bar includes File, Edit, Search, View, Refactor, Project, Run, Component, Tools, Window, and Help. A search bar at the top right contains the text "victory". The main workspace displays a form titled "Gyro" with a 3D gyroscope component. The properties panel on the left lists various form properties like ClientHeight, ClientWidth, and FormStyle. The tool palette on the right is expanded, showing categories such as Standard, Additional, System, Dialogs, Data Access, dbExpress, Datasnap Client, Datasnap Server, FireDAC, FireDAC UI, FireDAC Links, FireDAC Services, FireDAC ETL, LiveBindings, Gestures, LiveBindings Misc, Sensors, Internet, WebServices, Xml, FireDAC NoSQL, Net, and REST Client.

[Giroscópio]

Gyroscope - RAD Studio 10 Seattle - uMain

```
File Edit Search View Refactor Project Run Component Tools Window Help | victory | Search | DX
Welcome Page uMain
TGyrosopeForm
procedure TGyrosopeForm.Timer1Timer(Sender: TObject);
begin
  { check for sensor assignment }
  if Length(FSensors) > 0 then
    if Assigned(FSensor) then
      begin
        { and rotate the cube }

        {$IFDEF ANDROID} //In Android, Tilt property is returned as vector
        Rectangle3D1.RotationAngle.X := FSensor.TiltX * 360;
        Rectangle3D1.RotationAngle.Y := FSensor.TiltY * 360;
        Rectangle3D1.RotationAngle.Z := FSensor.TiltZ * 360;
        {$ELSE} //In other platforms, Tilt property is returned as degree
        Rectangle3D1.RotationAngle.X := FSensor.TiltX;
        Rectangle3D1.RotationAngle.Y := FSensor.TiltY;
        Rectangle3D1.RotationAngle.Z := FSensor.TiltZ;
        {$ENDIF}

        Label1.Text := Format('Gyro: %3.1f %3.1f %3.1f', [Rectangle3D1.RotationAngle.X,
        Rectangle3D1.RotationAngle.Y,
```

[Bússula e Nível]



Embarcadero Conference

[Bússula e Nível]

- `C:\Users\Public\Documents\Embarcadero\Studio
\VERSAO\Samples\MobileSnippets\OrientationSe-
nsor`
- [http://docwiki.embarcadero.com/CodeExamples/
Berlin/en/FMX.OrientationSensor_Sample](http://docwiki.embarcadero.com/CodeExamples/Berlin/en/FMX.OrientationSensor_Sample)

[Bússula e Nível]

OrientationSensor - RAD Studio 10 Seattle - uMain

File Edit Search View Refactor Project Run Component Tools Window Help

victory

Search

Object Inspector

TiltButton TSpeedButton

Search

Properties Events

Action Align Center
Anchors
AutoTranslate True
CanFocus False
CanParentFocus False
ClipChildren False
ClipParent False
ControlType Styled
Cursor crDefault
DragMode dmManual
Enabled True
EnableDragHigh True
GroupName
Height 42
HelpContext 0
HelpKeyword
HelpType htContext
Hint

Style: Android View: Master

Welcome Page uMain

Tool Palette

Standard Additional System Dialogs Data Access dbExpress Datasnap Client Datasnap Server FireDAC FireDAC UI FireDAC Links FireDAC Services FireDAC ETL LiveBindings Gestures LiveBindings Misc Sensors Internet WebServices Xml FireDAC NoSQL

Orientation Sensor

Tilt Heading

Orientation Sensor:

Tilt X:

Tilt Y:

Tilt Z:

Heading X:

Heading Y: OrientationSensor1 Timer1

Heading Z:

[Bússula e Nível]

OrientationSensor - RAD Studio 10 Seattle - uMain

```
File Edit Search View Refactor Project Run Component Tools Window Help | victory | Search | DX
[File] [Edit] [Search] [View] [Refactor] [Project] [Run] [Component] [Tools] [Window] [Help] | [victory] | [Search] | [DX]
[Welcome Page] [uMain]
Structure Object Inspector
TOrientationSensorForm.TOrientationSensorForm
  - procedure TOrientationSensorForm.Timer1Timer(Sender: TObject);
    begin
      { get the data from the sensor }
      lbTiltX.Text := Format('Tilt X: %f', [OrientationSensor1.Sensor.TiltX]);
      lbTiltY.Text := Format('Tilt Y: %f', [OrientationSensor1.Sensor.TiltY]);
      lbTiltZ.Text := Format('Tilt Z: %f', [OrientationSensor1.Sensor.TiltZ]);
      lbHeadingX.Text := Format('Heading X: %f', [OrientationSensor1.Sensor.HeadingX]);
      lbHeadingY.Text := Format('Heading Y: %f', [OrientationSensor1.Sensor.HeadingY]);
      lbHeadingZ.Text := Format('Heading Z: %f', [OrientationSensor1.Sensor.HeadingZ]);
    end;

  - procedure TOrientationSensorForm.FormActivate(Sender: TObject);
    begin
      {$ifdef IOS}
      {$ifndef CPUARM}
        lbOrientationSensor.Text := 'Simulator - no sensors';
        swOrientationSensorActive.Enabled := False;
      {$endif}
      {$endif}
```

[GPS]



[GPS]

- C:\Users\Public\Documents\Embarcadero\Studio
 \VERSAO\Samples\MobileSnippets\Location
- [http://docwiki.embarcadero.com/CodeExamples/
Berlin/en/FMX.Location_Sample](http://docwiki.embarcadero.com/CodeExamples/Berlin/en/FMX.Location_Sample)

[GPS]

Location - RAD Studio 10 Seattle - uMain

File Edit Search View Refactor Project Run Component Tools Window Help

victory

Search

Object Inspector

WebBrowser1 TWebBrowser

Search

Properties Events

Align Client [akLeft,akTop,akRight,akBottom]
Anchors CanFocus True
EnableCaching True
Height 262
Hint
LiveBindings LiveBindings
LiveBindings Designer LiveBindings Designer
Margins (TBounds)
Name WebBrowser1
Position (TPosition)
Size (TControlSize)
StyleName
Tag 0
Touch (TTouchManager)
URL
Visible True
Width 384

Tool Palette

Standard Additional System Dialogs Data Access dbExpress Datasnap Client Datasnap Server FireDAC FireDAC UI FireDAC Links FireDAC Services FireDAC ETL LiveBindings Gestures LiveBindings Misc Sensors Internet WebServices Xml FireDAC NoSQL

Style: Android View: Master

Location

Location Sensor

Trigger Distance 0 - +

Accuracy 0 - +

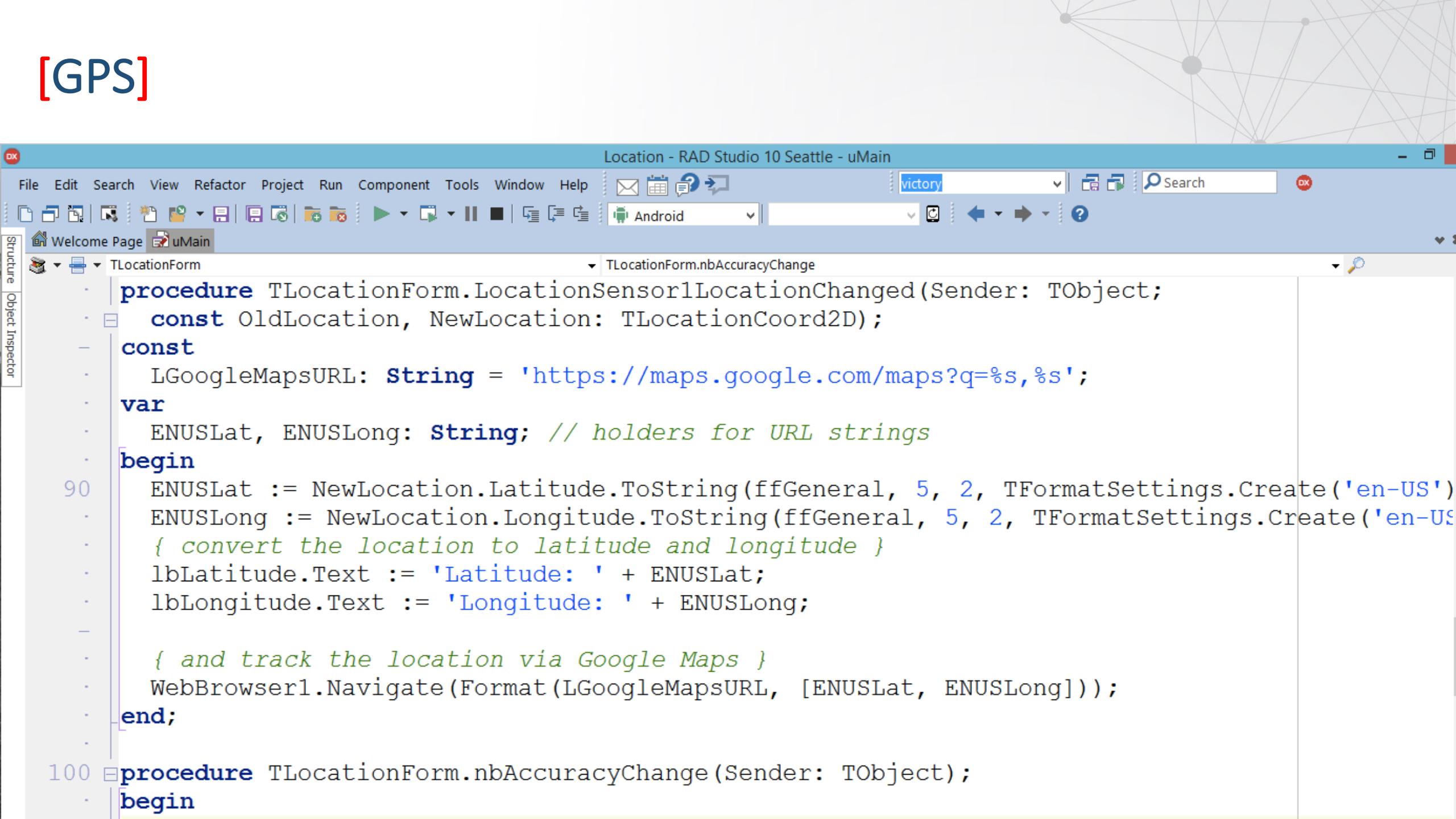
Latitude

Longitude

LocationSensor1

The screenshot shows the RAD Studio 10 Seattle IDE interface. The main window displays a 'Location' configuration dialog with fields for 'Location Sensor' (checkbox), 'Trigger Distance' (0, -, + buttons), 'Accuracy' (0, -, + buttons), 'Latitude', and 'Longitude' (with a location pin icon). The 'Longitude' field is currently active, showing 'LocationSensor1'. The 'Object Inspector' panel on the left lists properties for 'WebBrowser1' (TWebBrowser), including 'Align' (Client: [akLeft,akTop,akRight,akBottom]), 'CanFocus' (True), 'EnableCaching' (True), 'Height' (262), and 'Visible' (True). The 'Tool Palette' on the right is open, showing categories like Standard, Additional, System, Dialogs, Data Access, dbExpress, Datasnap Client, Datasnap Server, FireDAC, FireDAC UI, FireDAC Links, FireDAC Services, FireDAC ETL, LiveBindings, Gestures, LiveBindings Misc, Sensors, Internet, WebServices, Xml, and FireDAC NoSQL.

[GPS]



The screenshot shows the RAD Studio 10 Seattle IDE interface. The title bar reads "Location - RAD Studio 10 Seattle - uMain". The menu bar includes File, Edit, Search, View, Refactor, Project, Run, Component, Tools, Window, Help. The toolbar has various icons for file operations like Open, Save, Print, and a search bar with the text "victory". The main editor window displays Delphi Pascal code for a form named TLocationForm. The code handles location sensor changes and tracks the location via Google Maps. The code uses string interpolation and TFormatSettings for localization.

```
procedure TLocationForm.LocationSensor1LocationChanged(Sender: TObject);
var
  OldLocation, NewLocation: TLocationCoord2D;
begin
  LGoogleMapsURL: String = 'https://maps.google.com/maps?q=%s,%s';
  ENUSLat, ENUSLong: String; // holders for URL strings
  begin
    ENUSLat := NewLocation.Latitude.ToString(ffGeneral, 5, 2, TFormatSettings.Create('en-US'));
    ENUSLong := NewLocation.Longitude.ToString(ffGeneral, 5, 2, TFormatSettings.Create('en-US'));
    { convert the location to latitude and longitude }
    lbLatitude.Text := 'Latitude: ' + ENUSLat;
    lbLongitude.Text := 'Longitude: ' + ENUSLong;

    { and track the location via Google Maps }
    WebBrowser1.Navigate(Format(LGoogleMapsURL, [ENUSLat, ENUSLong]));
  end;
end;

procedure TLocationForm.nbAccuracyChange(Sender: TObject);
begin
```



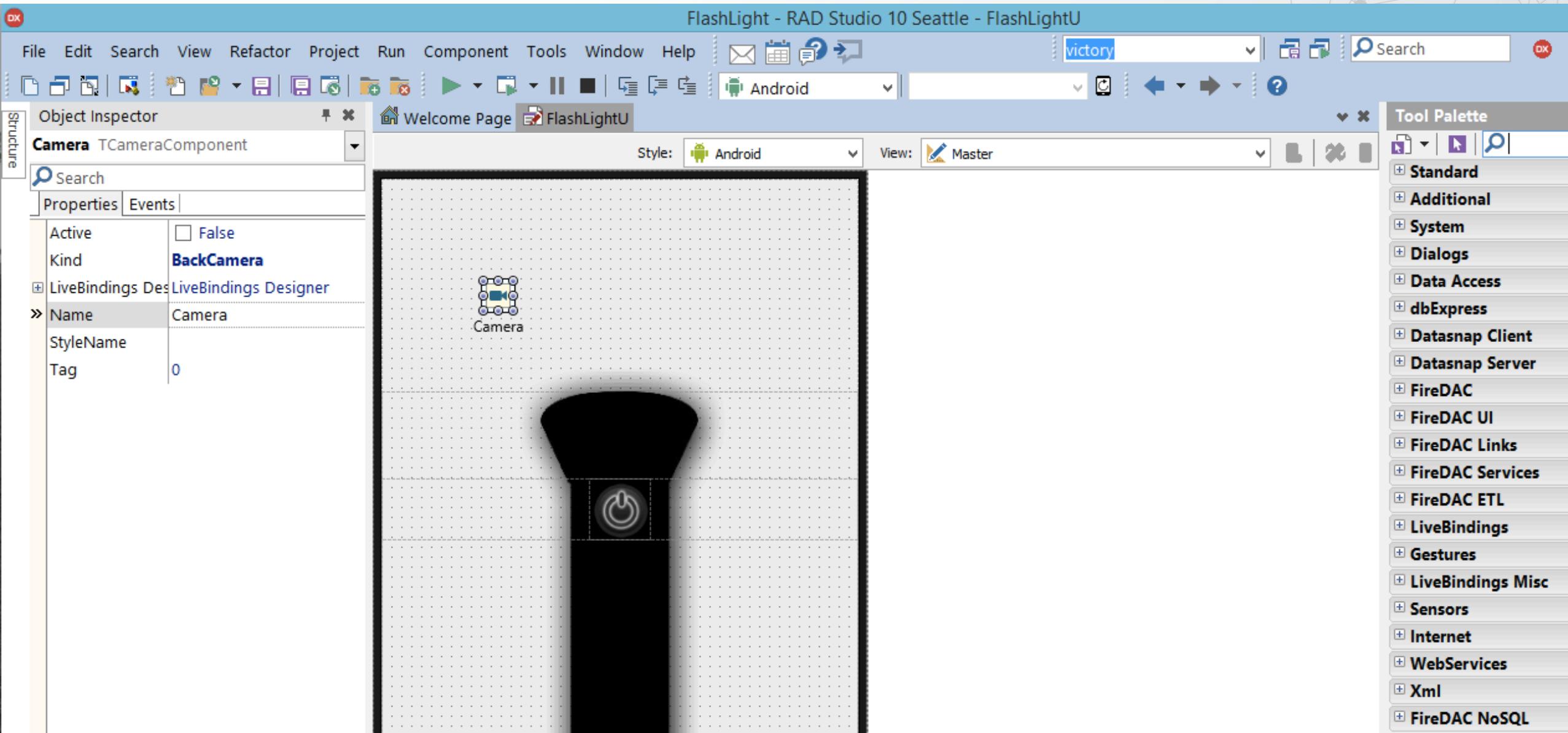
[Flash]



[Flash]

- C:\Users\Public\Documents\Embarcadero\Studio
 \VERSAO\Samples\Multi-Device Samples\Device
 Sensors and Services\FlashLight
- [http://docwiki.embarcadero.com/CodeExamples/
Berlin/en/FMX.FlashLight_Sample](http://docwiki.embarcadero.com/CodeExamples/Berlin/en/FMX.FlashLight_Sample)

[Flash]



[Flash]

FlashLight - RAD Studio 10 Seattle - FlashLightU

File Edit Search View Refactor Project Run Component Tools Window Help

victory

Search

Welcome Page FlashLightU

Android

TFlashLightForm

```
procedure TFlashLightForm.SetFlashlightState(Active : Boolean);
begin
  if Active then
    begin
      Camera.TorchMode := TTorchMode.ModeOn;
    end else
      begin
        Camera.TorchMode := TTorchMode.ModeOff;
      end;

procedure TFlashLightForm.ImageOffClick(Sender: TObject);
begin
  ImageOff.Visible := False;
  ImageOn.Visible := True;
  SetFlashlightState(True);
  Light.Visible := True;
end;
```

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