How to create a magnifying lens application in Asha platform

This article explains how to create a magnifying lens application for the Asha platform.

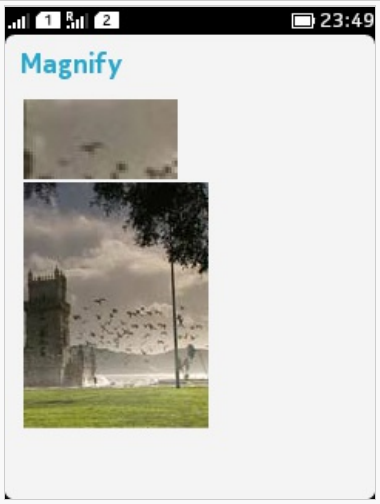
Note: This article was an entry in the Nokia Asha Wiki Competition 2013H2.

09 Feb 2014

Introduction

We will use the Asha platform's excellent image processing capabilities to make a magnifying glass application.

We will create an application that magnifies a portion of a still image by applying cropping and scaling techniques. Note that the platform does not permit magnification of a live feed from the camera.



Magnification application

Coding

The core of the magnification logic is in the following code.

This is the pointer pressed method of an image added to a Form.

Whenever the user clicks on a particular location in an image, we create a fixed size rectangle that includes the selected pixel. We use the transform control in the Advanced Multimedia Supplements (AMMS) APIs to crop the image. That gives us a rectangular area that surrounds the selected pixel.

We then use the AMMS APIs again to scale the rectangular region to the required magnification level.

```
                int sub_value_x = this.getAbsoluteX() +
this.getStyle().getPadding(Component.LEFT);
                 int sub_value_y = this.getAbsoluteY() +
this.getStyle().getPadding(Component.TOP);

                 // We are choosing a point that is diagonally across from the pointer
pressed location.

                 sourceX = ((2 * (x) - length_rect) / 2) - sub_value_x;
                 sourceY = ((2 * (y) - breadth_rect) / 2) - sub_value_y;

                 int targetWidth = breadth_rect;
                 int targetHeight = length_rect;

                 //Transforming to required size
                 transformControl.setSourceRect(sourceX, sourceY, breadth_rect,
length_rect);
```


(C) Copyright Nokia 2014. All rights reserved.

```
                transformControl.setTargetSize(targetWidth, targetHeight, 0);

                // Setting input
                try
                {
                    mp.setInput(m.getFinal_image());
                } catch (MediaException ex)
                {
                    ex.printStackTrace();
                }
                //Setting output
                ByteArrayOutputStream bos = new ByteArrayOutputStream();
                mp.setOutput(bos);

                // Performing the scale for the first time
                transformControl.setEnabled(true);
                try
                {
                    mp.complete();
                } catch (MediaException ex)
                {
                    ex.printStackTrace();
                }
                byte[] b = bos.toByteArray();

                // Higher levels of scale for zoom factor greater than one.
                if (zoomfactor > 1)
                {
                    try
                    {
                        mp.setInput(javax.microedition.lcdui.Image.createImage(b, 0,
b.length));
                        bos = new ByteArrayOutputStream();
                        mp.setOutput(bos);
                        transformControl.setSourceRect(0, 0, length_rect, breadth_rect);

                        // The target width and height is in multiples of the zoom
factor.
                        int targetW = (int) (zoomfactor * breadth_rect);
                        int targetH = (int) (zoomfactor * length_rect);

                        transformControl.setTargetSize(targetW, targetH, 0);
                        transformControl.setEnabled(true);
                        mp.complete();
                        b = bos.toByteArray();

                    } catch (MediaException ex)
                    {
                        ex.printStackTrace();
                    }

                }

                // Creating the scaled(Magnified) image.
                magnified_image = Image.createImage(b, 0, b.length);
                top.removeAll();
                top.addComponent(new Label(magnified_image));
```


(C) Copyright Nokia 2014. All rights reserved.

```
                    top.repaint();
```

Summary

This article demonstrates how to use the Asha Platform's camera as a magnifying lens.

(C) Copyright Nokia 2014. All rights reserved.