Multimedia Programming 2004

Advanced Assignment No. 1

December 15th 2004

Due: 11.00h December 22nd 2004

Goals of the assignments:

- Learn how to analyze and use skeleton code for your own image projects.

Preparations:

1. Download the advanced code from the MMP2004 web-site and unzip it to a local directory All further directories mentioned in the assignments can be found in this local directory

Posting Your Work

See the last page of Assignment Set 1 for the procedure for posting your work.

Assignment: Thumbnail Ordering

In the ImageTool directory you will find code that enables a user to browse directories for images. The images are shown in a thumbnail view. By clicking a thumbnail a preview of the image appears. The original code is from L. Birjega and can also be found on the following project page http://codeproject.com/vcpp/gdiplus/GdiPThumbnailsViewer.asp.
In this assignment you have to do the following:

Analyze the code and change the code such that image browsing starts in the local (to this project) directory *Images*. Thus on start up it should immediately show the 21 thumbnails of the images in this directory.

By default the thumbnails are arranged by name. This is an example of ordering images based on their annotation. Images can also be automatically ordered based on their contents. There is a vivid research area called content-based image retrieval, in which all kind of content-based ordering methods are studied. A basic content based ordering method is the ordering of the images by their brightness.
Add to the <View> menu the options <Arrange Thumbnails by><Name> and <Arrange Thumbnails by><Brightness>. If the first option is selected the default thumbnail arrangement should be used in the thumbnail window. If the second option, <Arrange Thumbnails by><Brightness> is selected, the thumbnails should be arranged such that the brightest pictures appear on top, while the dimmer images appear gradually to the bottom of the thumbnail view.
Note, the brightness of an RGB-pixel $p = (R, G, B)$ can be calculated as $brightness(p) = R+G+B$.