AC.lib-ICO v2.100

by Christian Treber

Package
com.ctreber.aclib

Home of ACproductions libraries.

com.ctreber.aclib
Class DemoApp

```
java.lang.Object
   |
   +-com.ctreber.aclib.DemoApp
```

public class **DemoApp**
extends java.lang.Object

AC.lib ICO demo application. Loads a single ICO file or searches a directory recursively for ICO files.
Author:
© 2004 Christian Treber, ct@ctreber.com

Constructor Summary

public	DemoApp()

Method Summary

static void	main(java.lang.String[] pArgs) See class comment.

Methods inherited from class `java.lang.Object`

`clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait`

Constructors

DemoApp

```
public DemoApp()
```

Methods

main

```
public static void main(java.lang.String[] pArgs)
```

See class comment.

Parameters:
`pArgs` - CLI args.

com.ctreber.aclib
Class DemoAppSPI

```
java.lang.Object
   |
   +-com.ctreber.aclib.DemoAppSPI
```

public class **DemoAppSPI**
extends java.lang.Object

AC.lib ICO demo application. Uses the ICO SPI.
Author:
© 2004 Christian Treber, ct@ctreber.com (08.08.2004)

Constructor Summary

public	DemoAppSPI()

Method Summary

static void	main(java.lang.String[] pArgs) Main!

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructors

DemoAppSPI

```
public DemoAppSPI()
```

Methods

main

```
public static void main(java.lang.String[] pArgs)
  throws java.io.IOException
```

Main!

Parameters:
pArgs - CLI args.

Throws:
IOException

Package
com.ctreber.aclib.codec

Binary decoders and encoders, i.e. for reading and writing various file formats.

com.ctreber.aclib.codec
Class AbstractDecoder

```
java.lang.Object
   |
   +-com.ctreber.aclib.codec.AbstractDecoder
```

Direct Known Subclasses:
ImageInputStreamDecoder, StreamDecoder

---

public abstract class **AbstractDecoder**
extends java.lang.Object

Byte stream decoder for 1, 2, and 4 byte values in big or little endian format.
Author:
© Christian Treber, ct@ctreber.com

Field Summary

protected	_pos
public static final	BIG_ENDIAN Highest order byte comes first. Value: **0**
public static final	LITTLE_ENDIAN Lowest order byte comes first. Value: **1**

Constructor Summary

public	AbstractDecoder()

Method Summary

abstract void	close() Call when done with decoder.
long	getPos()
abstract byte[]	readBytes(long pBytes, byte[] pBuffer) Implemented by a specific decoder.
short	readUInt1()
int	readUInt2()
long	readUInt4()
long	readValue(int pBytes)

abstract void	seek(long pPos)
void	setEndianess(int pEndianess)

Methods inherited from class `java.lang.Object`

`clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait`

Fields

BIG_ENDIAN

`public static final int` **`BIG_ENDIAN`**

Highest order byte comes first.
Constant value: **`0`**

LITTLE_ENDIAN

`public static final int` **`LITTLE_ENDIAN`**

Lowest order byte comes first.
Constant value: **`1`**

_pos

`protected long` **`_pos`**

Constructors

AbstractDecoder

`public` **`AbstractDecoder`**`()`

Methods

readUInt1

```
public short readUInt1()
  throws java.io.IOException
```

Returns:
A one byte value (aka BYTE, unsigned char)

Throws:
`java.io.IOException`

(continued from last page)

readUInt2

```
public int readUInt2()
  throws java.io.IOException
```

Returns:
A two byte value (aka WORD, unsigned short)

Throws:
`java.io.IOException`

---

readUInt4

```
public long readUInt4()
  throws java.io.IOException
```

Returns:
A four byte value (aka DWORD, unsigned long).

Throws:
`java.io.IOException`

---

setEndianess

```
public void setEndianess(int pEndianess)
```

Parameters:
`pEndianess` - The byte order

See Also:
`BIG_ENDIAN`
`LITTLE_ENDIAN`

---

getPos

```
public long getPos()
```

Returns:
Current position in file

---

seek

```
public abstract void seek(long pPos)
  throws java.io.IOException
```

Parameters:
`pPos` - Position to advance to. Nothing will happen if the position has already been passed.

Throws:

(continued from last page)

`java.io.IOException`

readBytes

```
public abstract byte[] readBytes(long pBytes,
         byte[] pBuffer)
  throws java.io.IOException
```

Implemented by a specific decoder.

Parameters:

`pBytes` - Bytes to read

`pBuffer` - The buffer to write the read bytes to. If null, a buffer is reserved.

Returns:

Array with the bytes read.

Throws:

`java.io.IOException`

readValue

```
protected long readValue(int pBytes)
  throws java.io.IOException
```

close

```
public abstract void close()
  throws java.io.IOException
```

Call when done with decoder.

Throws:

`IOException`

com.ctreber.aclib.codec
Class StreamDecoder

```
java.lang.Object
   |-com.ctreber.aclib.codec.AbstractDecoder
      |-com.ctreber.aclib.codec.StreamDecoder
```

public class **StreamDecoder**
extends AbstractDecoder

File decoder based on InputStream (Chris' implementation).
Author:
© Christian Treber, ct@ctreber.com

Fields inherited from class com.ctreber.aclib.codec.AbstractDecoder
_pos, BIG_ENDIAN, LITTLE_ENDIAN

Constructor Summary

public	StreamDecoder(java.io.InputStream pStream) Create a BIG_ENDIAN file decoder.

Method Summary

void	close()
byte[]	readBytes(long pBytes, byte[] pBuffer)
void	seek(long pBytes)

Methods inherited from class com.ctreber.aclib.codec.AbstractDecoder
close, getPos, readBytes, readUInt1, readUInt2, readUInt4, readValue, seek, setEndianess

Methods inherited from class java.lang.Object
clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructors

StreamDecoder

```
public StreamDecoder(java.io.InputStream pStream)
```

Create a BIG_ENDIAN file decoder. See AbstractDecoder.setEndianess(int) to change the default behavior.

(continued from last page)

Parameters:
`pStream`

Methods

seek

```
public void seek(long pBytes)
  throws java.io.IOException
```

---

readBytes

```
public byte[] readBytes(long pBytes,
         byte[] pBuffer)
  throws java.io.IOException
```

Implemented by a specific decoder.

---

close

```
public void close()
  throws java.io.IOException
```

Call when done with decoder.

Throws:
`IOException`

See Also:
`AbstractDecoder.close()`

Package
com.ctreber.aclib.image

Image related libraries.

com.ctreber.aclib.image
Class ImageInputStreamDecoder

```
java.lang.Object
   |-com.ctreber.aclib.codec.AbstractDecoder
      |-com.ctreber.aclib.image.ImageInputStreamDecoder
```

public class **ImageInputStreamDecoder**
extends AbstractDecoder

File decoder based on ImageInputStream (Chris' implementation).© 2001 Christian Treber, ct@ctreber.com
Author:
Christian Treber, ct@ctreber.com

Fields inherited from class com.ctreber.aclib.codec.AbstractDecoder
_pos, BIG_ENDIAN, LITTLE_ENDIAN

Constructor Summary

public	ImageInputStreamDecoder(javax.imageio.stream.ImageInputStream pStream) Create a BIG_ENDIAN file decoder.

Method Summary

void	close()
byte[]	readBytes(long pBytes, byte[] pBuffer)
void	seek(long pPos)

Methods inherited from class com.ctreber.aclib.codec.AbstractDecoder
close, getPos, readBytes, readUInt1, readUInt2, readUInt4, readValue, seek, setEndianess

Methods inherited from class java.lang.Object
clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructors

ImageInputStreamDecoder

```
public ImageInputStreamDecoder(javax.imageio.stream.ImageInputStream pStream)
```

Create a BIG_ENDIAN file decoder. See AbstractDecoder.setEndianess(int) to change the default behavior.

(continued from last page)

Parameters:

`pStream` - The image input stream to read from.

Methods

seek

```
public void seek(long pPos)
  throws java.io.IOException
```

---

readBytes

```
public byte[] readBytes(long pBytes,
         byte[] pBuffer)
  throws java.io.IOException
```

Implemented by a specific decoder.

---

close

```
public void close()
  throws java.io.IOException
```

Call when done with decoder.

Package
com.ctreber.aclib.image.ico

SPI and library for *reading* image files in ICO format.

com.ctreber.aclib.image.ico
Class AbstractBitmap

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.AbstractBitmap
```

Direct Known Subclasses:
AbstractBitmapIndexed, AbstractBitmapRGB

---

public abstract class **AbstractBitmap**
extends java.lang.Object

Parent class for all icon bitmaps, indexed or RGB.

Why is creation and read() not one thing? Because we might want to create the object, fill it step by step, and then write it.

Author:
© Christian Treber, ct@ctreber.com

See Also:
AbstractBitmapIndexed, AbstractBitmapRGB

Field Summary

protected	_descriptor Describes the bitmap.

Constructor Summary

public	AbstractBitmap(BitmapDescriptor pDescriptor)

Method Summary

abstract java.awt.image.BufferedImage	createImageRGB() Create an RGB image rendition of this bitmap.
int	getColorCount()
BitmapDescriptor	getDescriptor() Get the bitmap descriptor.
int	getHeight() The (manipulated height - read on).
int	getWidth() Get the bitmap width.
abstract void	read(AbstractDecoder pDec) Read bitmap from the decoder into class internal data structures.
void	setDescriptor(BitmapDescriptor pDescriptor)

java.lang.String	toString() Simply returns the class name which reflects the bitmap type.

Methods inherited from class java.lang.Object
clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Fields

_descriptor

```
protected com.ctreber.aclib.image.ico.BitmapDescriptor _descriptor
```

Describes the bitmap.

Constructors

AbstractBitmap

```
public AbstractBitmap(BitmapDescriptor pDescriptor)
```

Parameters:
pDescriptor - The image descriptor.

Methods

createImageRGB

```
public abstract java.awt.image.BufferedImage createImageRGB()
```

Create an RGB image rendition of this bitmap.

Returns:
A BufferedImage rendition (RGB) of this bitmap.

read

```
abstract void read(AbstractDecoder pDec)
  throws java.io.IOException
```

Read bitmap from the decoder into class internal data structures. Implemented by specific Bitmap classes.

Parameters:
pDec - The decoder.

Throws:
IOException

getHeight

```
protected int getHeight()
```

(continued from last page)

The (manipulated height - read on). I found that a) mostly (but not always) the height reported by the header is double the real size, and b) that the descriptor is usually correct.

Returns:
Returns the height.

getWidth

```
protected int getWidth()
```

Get the bitmap width.

Returns:
Returns the width.

getColorCount

```
protected int getColorCount()
```

getDescriptor

```
public BitmapDescriptor getDescriptor()
```

Get the bitmap descriptor.

Returns:
Returns the descriptor.

setDescriptor

```
void setDescriptor(BitmapDescriptor pDescriptor)
```

Parameters:
`pDescriptor` - The descriptor to set.

toString

```
public java.lang.String toString()
```

Simply returns the class name which reflects the bitmap type.

See Also:
`Object.toString()`

com.ctreber.aclib.image.ico
Class AbstractBitmapIndexed

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.AbstractBitmap
      |
      +-com.ctreber.aclib.image.ico.AbstractBitmapIndexed
```

Direct Known Subclasses:
BitmapIndexed1BPP, BitmapIndexed4BPP, BitmapIndexed8BPP

---

public abstract class **AbstractBitmapIndexed**
extends AbstractBitmap

Parent class for indexed bitmaps (1, 4, and 8 bits per pixel). The value of a pixel refers to an entry in the color palette. The bitmap has a mask which is a 1 BPP bitmap specifiying whether a pixel is transparent or opaque.

Author:
© Christian Treber, ct@ctreber.com

Field Summary

protected	_pixels The pixel values.

Fields inherited from class com.ctreber.aclib.image.ico.AbstractBitmap

_descriptor

Constructor Summary

public	AbstractBitmapIndexed(BitmapDescriptor pDescriptor) Create a bitmap with a color table and a mask.

Method Summary

java.awt.image.BufferedImage	createImageIndexed()
java.awt.image.BufferedImage	createImageRGB()
static int	getBytesPerScanLine(int pWidth, int pBPP) Return bytes per scan line rounded up to the next 4 byte boundary.
java.awt.Color	getColor(int pIndex) Get the color for the specified color palette index.
java.awt.Color	getColor(int pXPos, int pYPos) Get the color for the specified point.
int	getPaletteIndex(int pXPos, int pYPos) Index into the color palette for the specified point.

void	`read(AbstractDecoder pDec)` Needed to be replaced for indexed images because they contain a color palette and a mask which needs to be read as well.
abstract void	`readBitmap(AbstractDecoder pDec)` This functions is needed b/c all classes read the bitmap, but not always a color table and a mask.

Methods inherited from class `com.ctreber.aclib.image.ico.AbstractBitmap`

`createImageRGB`, `getColorCount`, `getDescriptor`, `getHeight`, `getWidth`, `read`, `setDescriptor`, `toString`

Methods inherited from class `java.lang.Object`

`clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait`

Fields

_pixels

`protected int **_pixels**`

The pixel values. The value refers to an entry in the color palette.

Constructors

AbstractBitmapIndexed

`public **AbstractBitmapIndexed**(BitmapDescriptor pDescriptor)`

Create a bitmap with a color table and a mask.

Parameters:

`pDescriptor` - The descriptor.

Methods

read

```
void read(AbstractDecoder pDec)
  throws java.io.IOException
```

Needed to be replaced for indexed images because they contain a color palette and a mask which needs to be read as well.

Parameters:

`pDec` - The decoder.

Throws:

`IOException`

readBitmap

```
abstract void readBitmap(AbstractDecoder pDec)
  throws java.io.IOException
```

(continued from last page)

This functions is needed b/c all classes read the bitmap, but not always a color table and a mask.

Parameters:
`pDec` - The decoder.

Throws:
`IOException`

getBytesPerScanLine

```
protected static int getBytesPerScanLine(int pWidth,
         int pBPP)
```

Return bytes per scan line rounded up to the next 4 byte boundary.

Parameters:
`pWidth` - The image width.
`pBPP` - Bytes per pixel.

Returns:
Bytes per scan line rounded up to the next 4 byte boundar.

createImageIndexed

```
public java.awt.image.BufferedImage createImageIndexed()
```

Returns:
BufferedImage (palette) created from the indexed bitmap.

createImageRGB

```
public java.awt.image.BufferedImage createImageRGB()
```

Create an RGB image rendition of this bitmap.

Returns:
BufferedImage (ARGB) from the indexed bitmap.

getColor

```
public java.awt.Color getColor(int pXPos,
         int pYPos)
```

Get the color for the specified point.

Parameters:
`pXPos` - The x position.
`pYPos` - The y position.

Returns:
Color of the selected point.

getPaletteIndex

```
public int getPaletteIndex(int pXPos,
         int pYPos)
```

(continued from last page)

Index into the color palette for the specified point.

Parameters:

`pXPos` - The x position.
`pYPos` - The y position.

Returns:

Palette index for pixel x, y

---

getColor

```
public java.awt.Color getColor(int pIndex)
```

Get the color for the specified color palette index.

Parameters:

`pIndex` - of the color requested.

Returns:

Requested color.

com.ctreber.aclib.image.ico
Class AbstractBitmapRGB

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.AbstractBitmap
      |
      +-com.ctreber.aclib.image.ico.AbstractBitmapRGB
```

Direct Known Subclasses:
BitmapRGB24BPP, BitmapRGB32BPP

---

public abstract class **AbstractBitmapRGB**
extends AbstractBitmap

Parent class for RGB (16, 24, and 32 bits per pixel) bitmaps.
Author:
© Christian Treber, ct@ctreber.com

Field Summary

protected	_samples

Fields inherited from class com.ctreber.aclib.image.ico.AbstractBitmap

_descriptor

Constructor Summary

public	AbstractBitmapRGB(BitmapDescriptor pDescriptor) Create a RGB bitmap.

Methods inherited from class com.ctreber.aclib.image.ico.AbstractBitmap

createImageRGB, getColorCount, getDescriptor, getHeight, getWidth, read, setDescriptor, toString

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

---

Fields

_samples

```
protected int _samples
```

Constructors

(continued from last page)

AbstractBitmapRGB

```
public AbstractBitmapRGB(BitmapDescriptor pDescriptor)
```

Create a RGB bitmap.

Parameters:
`pDescriptor`

com.ctreber.aclib.image.ico
Class BitmapDescriptor

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.BitmapDescriptor
```

public class **BitmapDescriptor**
extends java.lang.Object

ICO file entry descriptor. Describes an embedded bitmap, and points to the header/bitmap pair. I found that the descriptor often "lies" about size, number of colors etc., hence the bitmap header should be used for reference.

Author:

Constructor Summary

public	BitmapDescriptor(AbstractDecoder pDec) Read the descriptor with the decoder (16 Bytes in total).

Method Summary

AbstractBitmap	getBitmap() Bitmap this descriptor refers to.
int	getBPP() Bits per pixel.
int	getBPPRaw() The original bits per pixel count.
int	getColorCount() The actual color count.
int	getColorCountRaw() The original color count (note "0" means "256").
BitmapHeader	getHeader() The header of the bitmap this descriptor refers to.
int	getHeight() Bitmap height.
java.awt.Image	getImageIndexed() Image with indexed colors.
java.awt.Image	getImageRGB() Image with ARGB colors.
BitmapMask	getMask() The mask of the bitmap this descriptor refers to.
long	getOffset() Offset of header in ICO file.

int	getPlanes() Number of planes ("1" for bitmaps, as far as I know).
int	getReserved() Reserved value in the descriptor.
long	getSize() Hm - the size of the header and bitmap maybe?
int	getWidth() Bitmap width.
void	setBitmap(AbstractBitmap pBitmap)
void	setHeader(BitmapHeader pHeader)
java.lang.String	toString()

Methods inherited from class `java.lang.Object`

`clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait`

Constructors

BitmapDescriptor

`public BitmapDescriptor(AbstractDecoder pDec)`

Read the descriptor with the decoder (16 Bytes in total).

Parameters:
`pDec` - The decoder.

Throws:
`IOException`

Methods

toString

`public java.lang.String toString()`

Returns:
Provides some information on the descriptor.

getImageIndexed

`public java.awt.Image getImageIndexed()`

Image with indexed colors. Returns null if an indexed image can't be created (like, from an RGB icon - color mapping and dithering is a bit much for the time being). Transparency information that might be present in the ICO file is lost. See `getImageRGB()`.

(continued from last page)

Returns:
Image.

getBPP

`public int getBPP()`

Bits per pixel. If the bit count of the entry is 0, the bit count of the header is returned. See `getBPPRaw()`.

Returns:
Bits per pixel (fudged).

getBPPRaw

`public int getBPPRaw()`

The original bits per pixel count. See `getBPP()`.

Returns:
Bits per pixel (raw).

getImageRGB

`public java.awt.Image getImageRGB()`

Image with ARGB colors. This method works for indexed color and RGB ICO files. Transparency information that might be present in the ICO is used. See `getImageIndexed()`.

Returns:
Image created from the bitmap.

getColorCountRaw

`public int getColorCountRaw()`

The original color count (note "0" means "256"). See `getColorCount()`.

Returns:
Color count (raw).

getColorCount

`public int getColorCount()`

The actual color count. See `getColorCountRaw()`.

Returns:
Color count (cooked).

getHeight

`public int getHeight()`

Bitmap height.

Returns:
Height.

getOffset

`public long getOffset()`

Offset of header in ICO file.

Returns:
Offset.

getPlanes

`public int getPlanes()`

Number of planes ("1" for bitmaps, as far as I know).

Returns:
Planes.

getReserved

`public int getReserved()`

Reserved value in the descriptor.

Returns:
Reserved value.

getSize

`public long getSize()`

Hm - the size of the header and bitmap maybe?

Returns:
Size.

getWidth

`public int getWidth()`

Bitmap width.

Returns:
Width.

getHeader

`public BitmapHeader getHeader()`

The header of the bitmap this descriptor refers to.

Returns:
Header.

setHeader

`void setHeader(BitmapHeader pHeader)`

(continued from last page)

Parameters:
pHeader

getMask

`public BitmapMask getMask()`

The mask of the bitmap this descriptor refers to. Null for RGB bitmaps.

Returns:
Mask.

getBitmap

`public AbstractBitmap getBitmap()`

Bitmap this descriptor refers to.

Returns:
Bitmap.

setBitmap

`void setBitmap(AbstractBitmap pBitmap)`

com.ctreber.aclib.image.ico
Class BitmapHeader

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.BitmapHeader
```

public class **BitmapHeader**
extends java.lang.Object

Icon header. Describes the dimensions and properties of the icon.

Author:
© Christian Treber, ct@ctreber.com

Constructor Summary

public	BitmapHeader(AbstractDecoder pDec) Create a header from decoded information.

Method Summary

long	getBitmapSize() Bitmap size in bytes.
int	getBPP() Bits per pixel.
int	getColorCount() The number of colors (based on BPP).
long	getColorsImportant() Number of important colors (0: All).
long	getColorsUsed() Number of colors used (often not set properly).
TypeCompression	getCompression() The bitmap compression type.
long	getHeaderSize() Header size (40 + 4 * color count, right?).
long	getHeight() Bitmap height.
int	getPlanes() Number of planes (always 1 in bitmaps, right?).
long	getWidth() Bitmap width.
long	getXPixelsPerM() I'm not sure what this is.

long	getYPixelsPerM() I'm not sure what this is.
java.lang.String	toString()

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructors

BitmapHeader

public **BitmapHeader**(AbstractDecoder pDec)

Create a header from decoded information.

Parameters:
pDec - The decoder.

Throws:
IOException

Methods

toString

public java.lang.String **toString**()

getBPP

public int **getBPP**()

Bits per pixel.

Returns:
Bits per pixel.

getColorsImportant

public long **getColorsImportant**()

Number of important colors (0: All).

Returns:
Important colors.

getColorsUsed

public long **getColorsUsed**()

Number of colors used (often not set properly).

(continued from last page)

Returns:
Colors used.

getCompression

`public TypeCompression getCompression()`

The bitmap compression type.

Returns:
Compression type.

See Also:
`TypeCompression`

getHeight

`public long getHeight()`

Bitmap height. Note: It seems the mask gets reported as well, so divide this number by two.

Returns:
Height.

getBitmapSize

`public long getBitmapSize()`

Bitmap size in bytes.

Returns:
Bitmap size.

getPlanes

`public int getPlanes()`

Number of planes (always 1 in bitmaps, right?).

Returns:
Planes.

getHeaderSize

`public long getHeaderSize()`

Header size (40 + 4 * color count, right?).

Returns:
Hease size.

getWidth

`public long getWidth()`

Bitmap width.

(continued from last page)

Returns:
Width.

getXPixelsPerM

`public long getXPixelsPerM()`

I'm not sure what this is.

Returns:
???

getYPixelsPerM

`public long getYPixelsPerM()`

I'm not sure what this is.

Returns:
???

getColorCount

`public int getColorCount()`

The number of colors (based on BPP).

Returns:
Colors.

com.ctreber.aclib.image.ico
Class BitmapIndexed1BPP

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.AbstractBitmap
      |
      +-com.ctreber.aclib.image.ico.AbstractBitmapIndexed
         |
         +-com.ctreber.aclib.image.ico.BitmapIndexed1BPP
```

public class **BitmapIndexed1BPP**
extends AbstractBitmapIndexed

Bitmap with 2 color palette (black and white icon). Not tested, but seems to work.

Author:
© Christian Treber, ct@ctreber.com

Fields inherited from class com.ctreber.aclib.image.ico.AbstractBitmapIndexed
_pixels

Fields inherited from class com.ctreber.aclib.image.ico.AbstractBitmap
_descriptor

Constructor Summary

public	BitmapIndexed1BPP(BitmapDescriptor pDescriptor) Create a 1BPP bitmap.

Method Summary

void	readBitmap(AbstractDecoder pDec)

Methods inherited from class com.ctreber.aclib.image.ico.AbstractBitmapIndexed
createImageIndexed, createImageRGB, getBytesPerScanLine, getColor, getColor, getPaletteIndex, read, readBitmap

Methods inherited from class com.ctreber.aclib.image.ico.AbstractBitmap
createImageRGB, getColorCount, getDescriptor, getHeight, getWidth, read, setDescriptor, toString

Methods inherited from class java.lang.Object
clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructors

(continued from last page)

BitmapIndexed1BPP

```
public BitmapIndexed1BPP(BitmapDescriptor pDescriptor)
```

Create a 1BPP bitmap.

Parameters:
`pDescriptor`

Methods

readBitmap

```
void readBitmap(AbstractDecoder pDec)
  throws java.io.IOException
```

This functions is needed b/c all classes read the bitmap, but not always a color table and a mask.

com.ctreber.aclib.image.ico
Class BitmapIndexed4BPP

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.AbstractBitmap
      |
      +-com.ctreber.aclib.image.ico.AbstractBitmapIndexed
         |
         +-com.ctreber.aclib.image.ico.BitmapIndexed4BPP
```

public class **BitmapIndexed4BPP**
extends AbstractBitmapIndexed

Bitmap with 16 color palette (4 bits per sample).
Author:
© Christian Treber, ct@ctreber.com

Fields inherited from class com.ctreber.aclib.image.ico.AbstractBitmapIndexed
_pixels

Fields inherited from class com.ctreber.aclib.image.ico.AbstractBitmap
_descriptor

Constructor Summary

public	BitmapIndexed4BPP(BitmapDescriptor pDescriptor) Create a 4 BPP bitmap.

Method Summary

void	readBitmap(AbstractDecoder pDec)

Methods inherited from class com.ctreber.aclib.image.ico.AbstractBitmapIndexed
createImageIndexed, createImageRGB, getBytesPerScanLine, getColor, getColor, getPaletteIndex, read, readBitmap

Methods inherited from class com.ctreber.aclib.image.ico.AbstractBitmap
createImageRGB, getColorCount, getDescriptor, getHeight, getWidth, read, setDescriptor, toString

Methods inherited from class java.lang.Object
clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructors

(continued from last page)

BitmapIndexed4BPP

```
public BitmapIndexed4BPP(BitmapDescriptor pDescriptor)
```

Create a 4 BPP bitmap.

Parameters:
`pDescriptor`

Methods

readBitmap

```
void readBitmap(AbstractDecoder pDec)
  throws java.io.IOException
```

This functions is needed b/c all classes read the bitmap, but not always a color table and a mask.

com.ctreber.aclib.image.ico
Class BitmapIndexed8BPP

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.AbstractBitmap
      |
      +-com.ctreber.aclib.image.ico.AbstractBitmapIndexed
         |
         +-com.ctreber.aclib.image.ico.BitmapIndexed8BPP
```

public class **BitmapIndexed8BPP**
extends AbstractBitmapIndexed

Bitmap with 256 color palette (8 bits per sample).
Author:
© Christian Treber, ct@ctreber.com

Fields inherited from class com.ctreber.aclib.image.ico.AbstractBitmapIndexed
_pixels

Fields inherited from class com.ctreber.aclib.image.ico.AbstractBitmap
_descriptor

Constructor Summary

public	BitmapIndexed8BPP(BitmapDescriptor pDescriptor) Create a 8 BPP bitmap.

Method Summary

void	readBitmap(AbstractDecoder pDec)

Methods inherited from class com.ctreber.aclib.image.ico.AbstractBitmapIndexed
createImageIndexed, createImageRGB, getBytesPerScanLine, getColor, getColor, getPaletteIndex, read, readBitmap

Methods inherited from class com.ctreber.aclib.image.ico.AbstractBitmap
createImageRGB, getColorCount, getDescriptor, getHeight, getWidth, read, setDescriptor, toString

Methods inherited from class java.lang.Object
clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructors

(continued from last page)

BitmapIndexed8BPP

```
public BitmapIndexed8BPP(BitmapDescriptor pDescriptor)
```

Create a 8 BPP bitmap.

Parameters:
`pDescriptor`

Methods

readBitmap

```
void readBitmap(AbstractDecoder pDec)
  throws java.io.IOException
```

This functions is needed b/c all classes read the bitmap, but not always a color table and a mask.

com.ctreber.aclib.image.ico
Class BitmapMask

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.BitmapMask
```

public class **BitmapMask**
extends java.lang.Object

Transparency mask, which is a 1 Bit per pixel information whether a pixel is transparent (1) or opaque (0).
Author:
© Christian Treber, ct@ctreber.com

Constructor Summary

public	BitmapMask(BitmapDescriptor pDescriptor)

Method Summary

int	getPaletteIndex(int pXPos, int pYPos)
boolean	isOpaque(int pXPos, int pYPos)
void	read(AbstractDecoder pDec)
void	setDescriptor(BitmapDescriptor pDescriptor)

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructors

BitmapMask

public **BitmapMask**(BitmapDescriptor pDescriptor)

Parameters:
pDescriptor

Methods

(continued from last page)

read

```
void read(AbstractDecoder pDec)
  throws java.io.IOException
```

Parameters:
pDec - The decoder.

Throws:
IOException

---

getPaletteIndex

```
public int getPaletteIndex(int pXPos,
         int pYPos)
```

Parameters:
pXPos
pYPos

Returns:

---

setDescriptor

```
void setDescriptor(BitmapDescriptor pDescriptor)
```

Parameters:
pDescriptor

---

isOpaque

```
public boolean isOpaque(int pXPos,
         int pYPos)
```

Parameters:
pXPos
pYPos

Returns:

com.ctreber.aclib.image.ico
Class BitmapRGB24BPP

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.AbstractBitmap
      |
      +-com.ctreber.aclib.image.ico.AbstractBitmapRGB
         |
         +-com.ctreber.aclib.image.ico.BitmapRGB24BPP
```

public class **BitmapRGB24BPP**
extends AbstractBitmapRGB

RGB bitmap with 8 bits per color (24 bits per sample).
Author:
© Christian Treber, ct@ctreber.com

Fields inherited from class com.ctreber.aclib.image.ico.AbstractBitmapRGB
_samples

Fields inherited from class com.ctreber.aclib.image.ico.AbstractBitmap
_descriptor

Constructor Summary

public	BitmapRGB24BPP(BitmapDescriptor pDescriptor)

Method Summary

java.awt.image.BufferedImage	createImageRGB()
void	read(AbstractDecoder pDec)

Methods inherited from class com.ctreber.aclib.image.ico.AbstractBitmap
createImageRGB, getColorCount, getDescriptor, getHeight, getWidth, read, setDescriptor, toString

Methods inherited from class java.lang.Object
clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructors

(continued from last page)

BitmapRGB24BPP

```
public BitmapRGB24BPP(BitmapDescriptor pDescriptor)
```

Parameters:
pDescriptor

Methods

read

```
void read(AbstractDecoder pDec)
  throws java.io.IOException
```

Read bitmap from the decoder into class internal data structures. Implemented by specific Bitmap classes.

---

createImageRGB

```
public java.awt.image.BufferedImage createImageRGB()
```

Create an RGB image rendition of this bitmap.

Returns:
Create an RGB image.

com.ctreber.aclib.image.ico
Class BitmapRGB32BPP

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.AbstractBitmap
      |
      +-com.ctreber.aclib.image.ico.AbstractBitmapRGB
         |
         +-com.ctreber.aclib.image.ico.BitmapRGB32BPP
```

public class **BitmapRGB32BPP**
extends AbstractBitmapRGB

ARGB bitmap with 8 bits per color (32 bits per sample).
Author:
© Christian Treber, ct@ctreber.com

Fields inherited from class com.ctreber.aclib.image.ico.AbstractBitmapRGB
_samples

Fields inherited from class com.ctreber.aclib.image.ico.AbstractBitmap
_descriptor

Constructor Summary

public	BitmapRGB32BPP(BitmapDescriptor pDescriptor)

Method Summary

java.awt.image.BufferedImage	createImageRGB()
void	read(AbstractDecoder pDec) According to Microsoft, the topmost byte simply is not used, but I found the fourth byte seems to be the alpha channel.

Methods inherited from class com.ctreber.aclib.image.ico.AbstractBitmap
createImageRGB, getColorCount, getDescriptor, getHeight, getWidth, read, setDescriptor, toString

Methods inherited from class java.lang.Object
clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructors

(continued from last page)

BitmapRGB32BPP

```
public BitmapRGB32BPP(BitmapDescriptor pDescriptor)
```

Parameters:
`pDescriptor` - The image descriptor.

Methods

read

```
void read(AbstractDecoder pDec)
  throws java.io.IOException
```

According to Microsoft, the topmost byte simply is not used, but I found the fourth byte seems to be the alpha channel.

Parameters:
`pDec` - The decoder.

Throws:
`IOException`

---

createImageRGB

```
public java.awt.image.BufferedImage createImageRGB()
```

Create an RGB image rendition of this bitmap.

Returns:
Create an ARGB image.

com.ctreber.aclib.image.ico
Class ICOFile

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.ICOFile
```

All Implemented Interfaces:
java.lang.Comparable

---

public class **ICOFile**
extends java.lang.Object
implements java.lang.Comparable

ICO file with one or more embedded bitmaps representing icons in various resolutions. An ICO file essentially is a format that glues together a couple of bitmaps into a single file.

This code uses file format information gleaned from:

winicontoppm.c - read a MS Windows .ico file and write portable pixmap(s)

Addendum for Java code by Christian Treber:

The rules for the Java adaption are the same as stated above for the C version.

Notes: All code in 1:10h. Realized stuff is little endian. At 2:30h: Debugged, got stuck on wrong determination of row length in 8 BPP images. Got black images until I set the alpha channel... Put some more effort into supporting mask; all in all I would say this took me 4:00h. Had to add another 4:00h for research into 24 and 32 BPP.

Author:
© Christian Treber, ct@ctreber.com

Constructor Summary

public	`ICOFile(java.lang.String pFileName)` Create ICOFile object from an ICO file.
public	`ICOFile(java.io.InputStream pInput)` Create ICO file from an input stream.
public	`ICOFile(java.net.URL pURL)` Create ICO file from an URL.
public	`ICOFile(byte[] pBuffer)` Create ICOFile from a byte array.
public	`ICOFile(java.lang.String pFileName, AbstractDecoder pFileDecoder)` Create ICO file.

Method Summary

int	compareTo(java.lang.Object pOther)
BitmapDescriptor	getDescriptor(int pDescriptorNo) Get the speicified BitmapDescriptor.
java.util.List	getDescriptors() Get the list of BitmapDescriptors contained in the ICO file.
java.lang.String	getFileName()
int	getImageCount() Get the number of contained images.
java.util.List	getImages() Get all contained images (comfort method).
int	getReserved()
int	getType() Get the image type.
java.lang.String	toString()

Methods inherited from class java.lang.Object
clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Methods inherited from interface java.lang.Comparable
compareTo

Constructors

ICOFile

```
public ICOFile(java.lang.String pFileName)
```

Create ICOFile object from an ICO file. Use getDescriptors() to access the icon(s). Yes, ICO files might contain more than one icon).

Parameters:
pFileName - Name of the file to read.

Throws:
IOException

ICOFile

```
public ICOFile(java.io.InputStream pInput)
```

Create ICO file from an input stream.

Parameters:
pInput

(continued from last page)

Throws:
`IOException`

ICOFile

```
public ICOFile(java.net.URL pURL)
```

Create ICO file from an URL.

Parameters:
`pURL`

Throws:
`IOException`

ICOFile

```
public ICOFile(byte[] pBuffer)
```

Create ICOFile from a byte array.

Parameters:
`pBuffer`

Throws:
`IOException`

ICOFile

```
public ICOFile(java.lang.String pFileName,
               AbstractDecoder pFileDecoder)
```

Create ICO file.

Parameters:
`pFileName` - Just serves as information for toString() output; input is obtained through pFileDecoder.
`pFileDecoder` - Decoder to read from.

Throws:
`IOException` - If anything goes wrong with reading from the decoder.

Methods

compareTo

```
public int compareTo(java.lang.Object pOther)
```

toString

```
public java.lang.String toString()
```

(continued from last page)

getImages

`public java.util.List getImages()`

Get all contained images (comfort method).

Returns:
Images (type Image).

getDescriptors

`public java.util.List getDescriptors()`

Get the list of BitmapDescriptors contained in the ICO file.

Returns:
List of `BitmapDescriptor` in same order as in the ICO file (use methods on ICOEntry to get the actual images).

getDescriptor

`public BitmapDescriptor getDescriptor(int pDescriptorNo)`

Get the speicified BitmapDescriptor.

Parameters:
`pDescriptorNo` - Number of the descriptor to get.

Returns:
BitmapDescriptor.

getType

`public int getType()`

Get the image type.

Returns:
The image type (any ideas what that is?).

getImageCount

`public int getImageCount()`

Get the number of contained images.

Returns:
Number of contained images.

getFileName

`public java.lang.String getFileName()`

Returns:
Source file name.

(continued from last page)

getReserved

```
public int getReserved()
```

Returns:

Returns the "reserved" value.

com.ctreber.aclib.image.ico
Class TypeCompression

```
java.lang.Object
   |
   +-com.ctreber.aclib.image.ico.TypeCompression
```

public final class **TypeCompression**
extends java.lang.Object

Enumeration class for bitmap compression types.
Author:
© Christian Treber, ct@ctreber.com

Field Summary

public static final	BI_BITFIELDS Uncompressed (16 & 32 BPP only).
public static final	BI_RGB Uncompressed (any BPP).
public static final	BI_RLE4 4 Bit RLE Compression (4 BPP only).
public static final	BI_RLE8 8 Bit RLE Compression (8 BPP only).

Method Summary

java.lang.String	getName() Get the symbolic name.
static TypeCompression	getType(long pValue) Get a type for the specified numerical value.
int	getValue() Get the numerical value.
java.lang.String	toString() Returns the name of the type and a comment.

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Fields

BI_RGB

public static final com.ctreber.aclib.image.ico.TypeCompression **BI_RGB**

(continued from last page)

Uncompressed (any BPP).

BI_RLE8

```
public static final com.ctreber.aclib.image.ico.TypeCompression BI_RLE8
```

8 Bit RLE Compression (8 BPP only).

BI_RLE4

```
public static final com.ctreber.aclib.image.ico.TypeCompression BI_RLE4
```

4 Bit RLE Compression (4 BPP only).

BI_BITFIELDS

```
public static final com.ctreber.aclib.image.ico.TypeCompression BI_BITFIELDS
```

Uncompressed (16 & 32 BPP only).

Methods

toString

```
public java.lang.String toString()
```

Returns the name of the type and a comment.

See Also:
`Object.toString()`

getName

```
public java.lang.String getName()
```

Get the symbolic name.

Returns:
Returns the name.

getValue

```
public int getValue()
```

Get the numerical value.

Returns:
Returns the value.

getType

```
public static TypeCompression getType(long pValue)
```

Get a type for the specified numerical value.

Parameters:
`pValue` - Compression type integer value.

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Returns:

Type for the value specified.

Package
com.ctreber.aclib.image.ico.spi

SPI adapter for ICO files. Note that writing ICO files is not supported (yet?).

com.ctreber.aclib.image.ico.spi
Class ICOImageReaderSPI

```
java.lang.Object
   |-javax.imageio.spi.IIOServiceProvider
      |-javax.imageio.spi.ImageReaderWriterSpi
         |-javax.imageio.spi.ImageReaderSpi
            |-com.ctreber.aclib.image.ico.spi.ICOImageReaderSPI
```

All Implemented Interfaces:
javax.imageio.spi.RegisterableService

---

public class **ICOImageReaderSPI**
extends javax.imageio.spi.ImageReaderSpi

Information for the ICO image service provider plugin.
Author:
© Christian Treber, ct@ctreber.com

Fields inherited from class `javax.imageio.spi.ImageReaderSpi`
`inputTypes`, `STANDARD_INPUT_TYPE`, `writerSpiNames`

Fields inherited from class `javax.imageio.spi.ImageReaderWriterSpi`
`extraImageMetadataFormatClassNames`, `extraImageMetadataFormatNames`, `extraStreamMetadataFormatClassNames`, `extraStreamMetadataFormatNames`, `MIMETypes`, `names`, `nativeImageMetadataFormatClassName`, `nativeImageMetadataFormatName`, `nativeStreamMetadataFormatClassName`, `nativeStreamMetadataFormatName`, `pluginClassName`, `suffixes`, `supportsStandardImageMetadataFormat`, `supportsStandardStreamMetadataFormat`

Fields inherited from class `javax.imageio.spi.IIOServiceProvider`
`vendorName`, `version`

Constructor Summary

public	`ICOImageReaderSPI()` Define the capabilities of this provider service.

Method Summary

boolean	`canDecodeInput(java.lang.Object pSource)`
javax.imageio.ImageReader	`createReaderInstance(java.lang.Object pExtension)`
java.lang.String	`getDescription(java.util.Locale pLocale)`

Methods inherited from class `javax.imageio.spi.ImageReaderSpi`

canDecodeInput, createReaderInstance, createReaderInstance, getImageWriterSpiNames, getInputTypes, isOwnReader

Methods inherited from class javax.imageio.spi.ImageReaderWriterSpi

getExtraImageMetadataFormatNames, getExtraStreamMetadataFormatNames, getFileSuffixes, getFormatNames, getImageMetadataFormat, getMIMETypes, getNativeImageMetadataFormatName, getNativeStreamMetadataFormatName, getPluginClassName, getStreamMetadataFormat, isStandardImageMetadataFormatSupported, isStandardStreamMetadataFormatSupported

Methods inherited from class javax.imageio.spi.IIOServiceProvider

getDescription, getVendorName, getVersion, onDeregistration, onRegistration

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Methods inherited from interface javax.imageio.spi.RegisterableService

onDeregistration, onRegistration

Constructors

ICOImageReaderSPI

public **ICOImageReaderSPI**()

Define the capabilities of this provider service.

Methods

canDecodeInput

public boolean **canDecodeInput**(java.lang.Object pSource)

createReaderInstance

public javax.imageio.ImageReader **createReaderInstance**(java.lang.Object pExtension)

Parameters:

pExtension - Not used by our reader.

See Also:

ImageReaderSpi.createReaderInstance(java.lang.Object)

(continued from last page)

getDescription

```
public java.lang.String getDescription(java.util.Locale pLocale)
```

Parameters:

`pLocale` - Ignored - one locale fits all.

See Also:

`IIOServiceProvider.getDescription(java.util.Locale)`

com.ctreber.aclib.image.ico.spi
Class ICOMetaData

```
java.lang.Object
   |
   +-javax.imageio.metadata.IIOMetadata
      |
      +-com.ctreber.aclib.image.ico.spi.ICOMetaData
```

public class **ICOMetaData**
extends javax.imageio.metadata.IIOMetadata

ICO image meta data. I have no idea whether what I'm doing here is what is expected from me!
Author:
© Christian Treber, ct@ctreber.com

Fields inherited from class `javax.imageio.metadata.IIOMetadata`
`controller`, `defaultController`, `extraMetadataFormatClassNames`, `extraMetadataFormatNames`, `nativeMetadataFormatClassName`, `nativeMetadataFormatName`, `standardFormatSupported`

Constructor Summary

public	ICOMetaData(BitmapDescriptor pEntry)

Method Summary

org.w3c.dom.Node	getAsTree(java.lang.String pFormatName)
boolean	isReadOnly()
void	mergeTree(java.lang.String pFormatName, org.w3c.dom.Node pRoot)
void	reset()

Methods inherited from class `javax.imageio.metadata.IIOMetadata`
activateController, getAsTree, getController, getDefaultController, getExtraMetadataFormatNames, getMetadataFormat, getMetadataFormatNames, getNativeMetadataFormatName, getStandardChromaNode, getStandardCompressionNode, getStandardDataNode, getStandardDimensionNode, getStandardDocumentNode, getStandardTextNode, getStandardTileNode, getStandardTransparencyNode, getStandardTree, hasController, isReadOnly, isStandardMetadataFormatSupported, mergeTree, reset, setController, setFromTree

Methods inherited from class `java.lang.Object`
clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

(continued from last page)

Constructors

ICOMetaData

```
public ICOMetaData(BitmapDescriptor pEntry)
```

Parameters:
pEntry

Methods

getAsTree

```
public org.w3c.dom.Node getAsTree(java.lang.String pFormatName)
```

---

isReadOnly

```
public boolean isReadOnly()
```

---

mergeTree

```
public void mergeTree(java.lang.String pFormatName,
        org.w3c.dom.Node pRoot)
```

---

reset

```
public void reset()
```

com.ctreber.aclib.image.ico.spi
Class ICOReader

```
java.lang.Object
   |
   +-javax.imageio.ImageReader
      |
      +-com.ctreber.aclib.image.ico.spi.ICOReader
```

public class **ICOReader**
extends javax.imageio.ImageReader

ICO image service provider plugin. Supports only the most basic ImageIO options (i.e., fires no events etc.).
Author:
© Christian Treber, ct@ctreber.com

Field Summary

protected	_icoFile
protected	_stream

Fields inherited from class javax.imageio.ImageReader

availableLocales, ignoreMetadata, input, locale, minIndex, originatingProvider, progressListeners, seekForwardOnly, updateListeners, warningListeners, warningLocales

Constructor Summary

public	ICOReader(javax.imageio.spi.ImageReaderSpi pProvider)

Method Summary

int	getHeight(int pImageIndex)
javax.imageio.metadata.IIOMetadata	getImageMetadata(int pImageIndex)
java.util.Iterator	getImageTypes(int pImageIndex)
int	getNumImages(boolean pAllowSearch)
javax.imageio.metadata.IIOMetadata	getStreamMetadata()
int	getWidth(int pImageIndex)
static void	listServiceProviders() List all formats supported by ImageIO, and show who provides support fir them.

static void	main(java.lang.String[] pArgs) Check this out on how to read all icons contained in an ICO file with ImageIO.
java.awt.image.BufferedImage	read(int pImageIndex, javax.imageio.ImageReadParam pParam)
void	setInput(java.lang.Object pInput, boolean pSeekForwardOnly, boolean pIgnoreMetadata)

Methods inherited from class `javax.imageio.ImageReader`

abort, abortRequested, addIIOReadProgressListener, addIIOReadUpdateListener, addIIOReadWarningListener, addToList, canReadRaster, checkReadParamBandSettings, clearAbortRequest, computeRegions, dispose, getAspectRatio, getAvailableLocales, getDefaultReadParam, getDestination, getFormatName, getHeight, getImageMetadata, getImageMetadata, getImageTypes, getInput, getLocale, getMinIndex, getNumImages, getNumThumbnails, getOriginatingProvider, getRawImageType, getSourceRegion, getStreamMetadata, getStreamMetadata, getThumbnailHeight, getThumbnailWidth, getTileGridXOffset, getTileGridYOffset, getTileHeight, getTileWidth, getWidth, hasThumbnails, isIgnoringMetadata, isImageTiled, isRandomAccessEasy, isSeekForwardOnly, processImageComplete, processImageProgress, processImageStarted, processImageUpdate, processPassComplete, processPassStarted, processReadAborted, processSequenceComplete, processSequenceStarted, processThumbnailComplete, processThumbnailPassComplete, processThumbnailPassStarted, processThumbnailProgress, processThumbnailStarted, processThumbnailUpdate, processWarningOccurred, processWarningOccurred, read, read, readAll, readAll, readAsRenderedImage, readerSupportsThumbnails, readRaster, readThumbnail, readTile, readTileRaster, removeAllIIOReadProgressListeners, removeAllIIOReadUpdateListeners, removeAllIIOReadWarningListeners, removeFromList, removeIIOReadProgressListener, removeIIOReadUpdateListener, removeIIOReadWarningListener, reset, setInput, setInput, setInput, setLocale

Methods inherited from class `java.lang.Object`

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Fields

_icoFile

```
protected com.ctreber.aclib.image.ico.ICOFile _icoFile
```

_stream

```
protected javax.imageio.stream.ImageInputStream _stream
```

Constructors

(continued from last page)

ICOReader

```
public ICOReader(javax.imageio.spi.ImageReaderSpi pProvider)
```

Parameters:

`pProvider` - Handle back to the provider.

Methods

getHeight

```
public int getHeight(int pImageIndex)
```

---

getImageMetadata

```
public javax.imageio.metadata.IIOMetadata getImageMetadata(int pImageIndex)
```

---

getImageTypes

```
public java.util.Iterator getImageTypes(int pImageIndex)
```

---

getNumImages

```
public int getNumImages(boolean pAllowSearch)
```

---

getStreamMetadata

```
public javax.imageio.metadata.IIOMetadata getStreamMetadata()
```

---

getWidth

```
public int getWidth(int pImageIndex)
```

---

read

```
public java.awt.image.BufferedImage read(int pImageIndex,
        javax.imageio.ImageReadParam pParam)
```

(continued from last page)

setInput

```
public void setInput(java.lang.Object pInput,
         boolean pSeekForwardOnly,
         boolean pIgnoreMetadata)
```

---

main

```
public static void main(java.lang.String[] pArgs)
  throws java.io.IOException
```

Check this out on how to read all icons contained in an ICO file with ImageIO.

Parameters:

`pArgs` - CLI arguments.

Throws:

`IOException`

---

listServiceProviders

```
public static void listServiceProviders()
```

List all formats supported by ImageIO, and show who provides support fir them.

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