

Software Development Kit
Recogniform Layout Analysis

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COME CONTATTARCI

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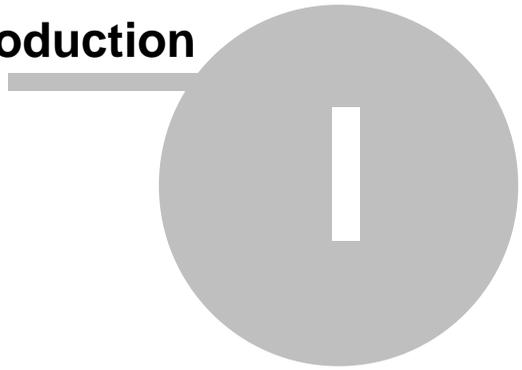
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Introduction



1 Introduction

1.1 Copyright

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1.3 Overview

The Recogniform Layout Analysis Library 1.0 allows to automatically analyze the layout of images detecting zones of:

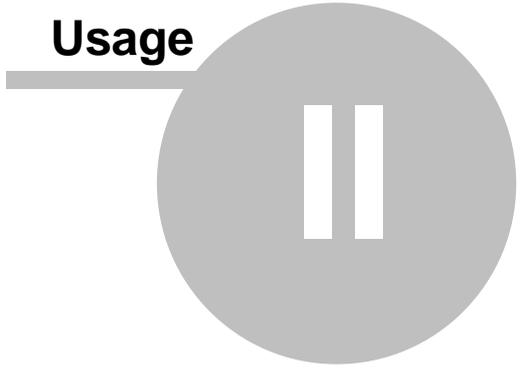
- normal text
- inverted text (white on dark background)
- images and graphics
- lines (horizontal and vertical)

- tables
- table columns
- table cells
- noise

It can work on bitonal images passed as DIB (Device Independent Bitmap)

For each zone are returned the coordinates of rectangle circumscribing the zone as well as the zone type.

Usage



2 Usage

2.1 Visual C++

You have to include the RECOLA.C in your program. Before to execute your application make sure the *RECOLA.DLL* is available in your same .exe directory or in windows\system directory.

2.2 C#

You have to include the RECOLA.CS in your program. Before to execute your application make sure the *RECOLA.DLL* is available in your same .exe directory or in windows\system directory.

2.3 Visual Basic

You have to include the RECOLA.BAS in your program. Before to execute your application make sure the *RECOLA.DLL* is available in your same .exe directory or in windows\system directory.

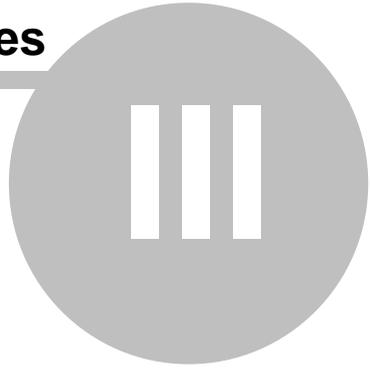
2.4 Visual Basic .NET

You have to include the RECOLA.VB in your program. Before to execute your application make sure the *RECOLA.DLL* is available in your same .exe directory or in windows\system directory.

2.5 Delphi

You have to include the RECOLA.PAS in your program. Before to execute your application make sure the *RECOLA.DLL* is available in your same .exe directory or in windows\system directory.

API References



3 API References

3.1 LoadLALibrary

```
RECOIO_API void LoadLALibrary(void)
```

Description

Load the Layout Analysis DLL library: you have to use this function one time before to use other API functions from Visual C++
This function is not required using the API from other languages.

3.2 FreeLALibrary

```
RECOIO_API void FreeLALibrary(void)
```

Description

Unload the Layout Analysis DLL library: you have to use this function one time before to exit from your Visual C++ application.
This function is not required using the API from other languages.

3.3 LA_Init

```
RECOLA_API long LA_Init(char *User, char *Password);
```

Description

This is the first function to call: initialize the library and returns a session handle to use in next calls. When you buy the library you receive an "user" and a "password" string necessary to initialize the library in normal mode: without this value or with wrong values the library is initialized in evaluation mode. The evaluation mode works exactly as normal mode but some time, when you call a function, is displayed a warning dialog box remembering the evaluation state: you can close it and continue to work with no problems.

Parameters

User (in) - then user name string
Passwors (in) - then password string

Return values

The session handle if the library is initialized, 0 otherwise.

3.4 **LA_Done**

```
RECOLA_API void LA_Done(long SessionHandle);
```

Description

This is the last function to call when you don't need more services from the library: deinitialize the library and free all used resources.

Parameters

SessionHandle (in) - the session handle to free

Return values

n/a

3.5 **LA_Execute**

```
RECOLA_API long LA_Execute(long SessionHandle,  
long DIBHandle);
```

Description

This is the function performing the layout analysis processing on an image.

Parameters

SessionHandle (in) - the session handle to use

DIBHandle(in) - the memory handle of the bitonal DIB (Device Independent Bitmap) to process

Return values

"0" if all goes ok else an error code.

Notes

Refer to Microsoft documentation for additional info about Device Independent Bitmaps. If you don't know how to handle DIB you can evaluate our Recogniform Imaging Library allowing to load images from file obtaining a DIB handle to use in other SDKs.

3.6 LA_GetZonesCount

```
RECOLA_API long LA_GetZonesCount(long  
SessionHandle);
```

Description

This is the function returning the number of zones found after analysis. You can call this function upon a LA_Execute.

Parameters

SessionHandle (in) - the session handle to use

Return values

The number of zones found.

3.7 LA_GetZoneRect

```
RECOLA_API long LA_GetZoneRect(long SessionHandle,  
long ZoneIndex, long *Left, long *Top, long  
*Right, long *Bottom);
```

Description

This is the function to call to obtain the rectangle coordinates of one of zones found. You can call this function upon a LA_Execute.

Parameters

SessionHandle (in) - the session handle to use

ZoneIndex(in) - the index of the zone to retrieve the coordinates. First value is 0 while last value is the result of LA_GetZonesCount less 1.

Left(out) - the left coordinate of zone rectangle

Top(out) - the top coordinate of zone rectangle

Right(out) - the right coordinate of zone rectangle

Bottom(out) - the bottom coordinate of zone rectangle

Return values

"0" if all goes ok else an error code.

3.8 LA_GetZoneContent

```
RECOLA_API long LA_GetZoneContent(long  
SessionHandle, long ZoneIndex, long *ContentCode);
```

Description

This is the function to call to obtain the content type of one of zones found. You can call this function upon a LA_Execute.

Parameters

SessionHandle (in) - the session handle to use

ZoneIndex(in) - the index of the zone to retrieve the coordinates. First value is 0 while last value is the result of LA_GetZonesCount less 1.

ContentCode(out) - the code indicating the zone content.

Possible values are:

0 = line

1 = table

2 = column inside a table

3 = cell inside a table

4 = inverse text

5 = image

6 = text

7 = noise

Return values

"0" if all goes ok else an error code.

3.9 LA_GetParameter

```
RECOLA_API long LA_GetParameter(long  
SessionHandle, long ParameterIndex, long *Value);
```

Description

This is the function to get the value of user parameters changing the analysis mode.

Parameters

SessionHandle (in) - the session handle to use

ParameterIndex(in) - the index of parameter to retrieve the value

Value(out) - the buffer to store the retrieved parameter value

Return values

"0" if all goes ok else an error code.

3.10 LA_SetParameter

```
RECOLA_API long LA_SetParameter(long  
SessionHandle, long ParameterIndex, long Value);
```

Description

This is the function to set the value of user parameters changing the analysis mode.

Parameters

SessionHandle (in) - the session handle to use

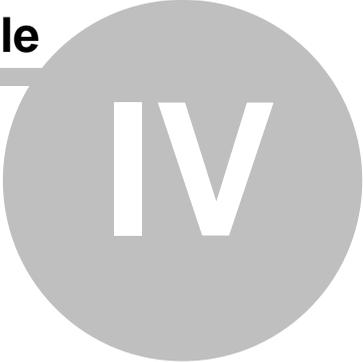
ParameterIndex(in) - the index of parameter to set the value

Value(in) - the parameter new value

Return values

"0" if all goes ok else an error code.

Sample



IV

4 Sample

4.1 Code Sample

```

#include "stdafx.h"
#include <stdio.h>
#include "recola.c"
int APIENTRY WinMain(HINSTANCE hInstance,HINSTANCE
hPrevInstance, LPSTR lpCmdLine,int nCmdShow)
{
    // Load dynamically the library
    LoadLALibrary();
    // Init the session
    int Session= LA_Init("demo", "demo");
    long hBitmap;
    // Check if a DIB is available in clipboard
    bool bAvail=IsClipboardFormatAvailable(CF_DIB);
    hBitmap = 0;
    if (bAvail)
    {
        // Open the Clipboard
        ::OpenClipboard(NULL);
        // Retrieve the DIB from clipboard
        hBitmap = (long)
        GetClipboardData(CF_DIB);
        // Perorm layout analysis long RemovedPoints=
        LA_Execute(Session, (long) hBitmap);
        // Close the Clipboard
        ::CloseClipboard();
        long i, Zones, Left, Top, Right, Bottom, ZoneType;
        Zones=LA_GetZonesCount(Session);
        for (i=0;i<Zones;i++)
        {
            LA_GetZoneRect(Session, i, &Left, &Top, &Right, &Bottom);
            LA_GetZoneContent(Session, i, &ZoneType);
            char buffer[200]
            sprintf( buffer, "Zone %d - Left=%d, Top=%d, Right=%d,
            Bottom=%d - Content=%d", i, Left, Top, Right, Bottom,
            ZoneType)
            MessageBox(NULL, buffer, "RESULT", MB_OK);
        }
        // Show an error message
        else MessageBox(NULL, "Unable to paste DIB", "ERROR", MB_OK);
        // Close the session
        LA_Done(Session);
        // Unload the library
        FreeLALibrary();
        return 0;
    }
}

```

Annotazioni

