Welcome to Visualib

1. Introduction

Visualib is Visual Tech Co.'s state of the art Windows graphics library for graphics programmers and application developers. Visualib is a Dynamic Linking Library (DLL) of C functions for two and three dimensional graphics and animation under Microsoft Windows 3.1. With Visualib, the application developer can get high quality graphics output on display, hard copy, and image files with minimum effort on computer graphics algorithms and output devices. The high level functions of Visualib make the display of complicated geometry simple and easy. Therefore, the application developers like you can concentrate on your field with your application specialty.

In the following of this document, the major advantages of Visualib are briefly described. The contents of this free trial package are listed. The environment requirement of running and developing Visualib based application is specified. Then different type of license arrangement of using Visualib is described.

2. Advantages

1. Distinguished Sets of 2D and 3D Functions:
Visualib has distinguished sets of 2D and 3D functions to meet the needs of your application. Almost every 2D function has its 3D equivalent since the 3D functions is the super set of 2D functions,

2. Unlimited number of device independent viewers:
A viewer is a rectangular region as it viewport. Every graphics output is toward a particular viewer. The viewers can intersect and overlap each other and the same device context, such display and printer DC. Any number of viewers can be defined and a viewer can be used on any device context. Therefore, the 2D and 3D graphics can be merged on the same output.

3. Sophisticated Rendering Methods:
There are five rendering methods available for a 3D object: wire frame, solid fill, flat shading, Gouraud shading, and Phong shading. Unlimited numbers of most sophisticated light sources and materials can be defined and used. For instance, a light can be defined as a distant light, point light, or spot light. The position can be in the world coordinate, camera coordinate or the object coordinate. A material can have different ambient, diffuse, specular, and emission colors. The more detailed rendering features are described in the Visualib Reference Manual. There is a number of shading options available, such as Z-Buffering, back face removal, local light, local viewer, additional to the five rendering methods. All the color calculation is done for the three primary colors: R, G, and B,

respectively in floating point precission in order to get the best rendering result.

4. Advanced Geometry:
A complete set of NURBS (Non-Uniform Rational B-Spline) based 2D and 3D curve primitives as well as the surface primitives are provided to output complicated geometry easily. All the geometry is presented with homogeneous coordinates that means a position can be defined at infinite. All the linear transformations including translation, scaling, rotation, stretching, and shearing are supported in both 2D and 3D. Unlimited number of level transformation matrix stacks are supported to implement hierarchical geometry.

5. Solid Texture and Image Mapping:
Visualib has a few built in solid texture shaders, such as wood, marble, and granite. The feature of the solid texture is that the texture is continuous with any shape of the geometry. For the advanced developer, Visualib allows them to build their own shaders to do the rendering perturbation: material, geometry, and pixel perturbation. Please read Visualib reference manual and corresponding computer graphics books for detail. An image in Microsoft Windows bitmap format or Run Length Encoded (RLE) format can also be mapped to any four-side 2D or 3D polygon.

5. Solid Text with TrueType Fonts:
All the true type fonts available on the computer running Visualib based application can be utilized by that application automatically. Multiple-line text can be rendered in 2D and 3D space either flat or solid. The size of the text is defined in corresponding world coordinate system in floating point number. The basic text alignment is supported.

3. Package Content

1. Visualib based demonstration application:
VLIBDEMO.EXE is a Visualib based application to demonstrate the major functions of Visualib. It is executable under Windows 3.1. VISUALIB.DLL and DIALOGS.DLL are necessary to run VLIBDEMO.EXE. A few image files are associated for image mapping demonstration.

2. On line documents:
The on line reference manual for Visualib and the demonstration application are provided. It can be reviewed either from the demonstration application or with the windows help utility WINHELP. Corresponding cross references are available for your convenience. The names of the document files are VISUALIB.HLP and VLIBDEMO.HLP.

3. Source files of the demo application:
A complete set of source files for the demonstration application is provided as the example of building Visualib based application. The files include C source files, resource files, make file, and icon file.

4. Visualib development kit:
The import library and header file for Visualib is provided to allow you build your own Visualib based trial application. The environment needed to build Visualib based application is described in next section of this document.

4. Environment Requirement

Microsoft Windows 3.1 is required to run Visualib based applications. For best performance, 4 MB memory and Floating Point Unit (FPU) are recommended. A high color video card that can display more than 256 colors is necessary in order to get the best shading result. The display resolution is not quite important. The image quality on a hard copy, such as print out, rely on the quality of the device as well as the associated device driver. The best printer driver should support screen color match. However, a black-white dot matrix printer can also perform reasonably.

To develop a Visualib based application, you need Windows Software Development Kit (SDK) and a compatible C compiler, such as Microsoft C and Borland C. The application can written either in plain C or C++. If you are using Microsoft C 6.0 or 7.0, it is necessary to link with LIBENTRY.OBJ for creating VISUALIB.DLL. The file LIBENTRY.OBJ is provided with SDK. A make file compatible to Visual C++ is provided to rebuide the demo application VlibDemo. To do so, simply run NMAKE CLEAN then NMAKE.

License Arrangement

This Visualib evaluation copy provides you everything needed to develop Visualib based application. You may use this copy of Visualib for 45 days with no charge. After that period, this copy of Visualib may not work properly. You need a licensed copy for building your practical Visualib based application. There three types of license arrangement available:

1. Single user application:
With the single user application license, you can build Visualib based applications used by single user on a single computer. This means that only one user a time can your Visualib based application.

2. Multiple user application:
With the multiple user application license, you can build Visualib based applications used internally in your organization. Multiple copies of Visualib may be installed on different computers or networks, All the users belong to your organization may use the application anytime.

3. Distributable application:
With distributable application license, you can build Visualib based applications distributed to your customers. You may distribute Visualib along with your software product.

Each copy of Visualib will be built with the customer information and license type. Higher level technical support will be provided to the multiple user application licensed and the resallable application licensed customers. The customized version of Visualib is available for the resallable application licensed customer with specific requirement.

The single user licensed Visualib is priced at $399 plus $15 shipping and handling. Order now to build your own Visualib based application.

5. Further Information

Your order, inquiry, comment, problem report, and special requirement are equally important to Visual Tech Co. Feel free to write, call, or fax to:

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Now it is the time to try Visualib yourseft. Visual Tech wish you a great success in developing your graphics application with Visualib.