

Abstract: Graphical hardware acceleration support is currently integral part of all computer platforms. Its implementation to the JaGrLib project, which serves for testing and improvement of graphical algorithms and structures as well as for educational purposes, is propitious given its purposes. This thesis deals with the implementation of hardware acceleration especially in the context of JaGrLib. The thesis strives for optimal connection between the library and graphical acceleration, the interface for other library tasks has been developed as well as modules needed to achieve basic functionality. Furthermore example library compositions have been developed. Second part of thesis deals with CSG scene projection using graphical accelerator in JaGrLib by converting such scene into b-rep using new algorithm. The algorithm is based on set operation of two solids by walking their vertices, similar to set operation of two polygons in plane.