

## **ABSTRACT**

This bachelor thesis covers mostly practical modes of digital terrain model creation and its editing by Geoinformatics.

The first part of the thesis is focused on an overview of 3D visualization options, digital terrain model types and also coordinate systems, an area this thesis is concerned with.

The second - practical - part is the main one and it focuses on the creation of a hybrid digital terrain model of "Pravčická brána" surroundings that consists of three-dimensional structure objects and 2,5D modified TIN model of surrounding terrain with integrated 3D paths in the area. At first, problems with the inconsistency of entry data are solved and consequently, the process of 3D path and terrain model (which is later edited by deleting those parts colliding with paths) creation is described. In the end, the process of structure modelling and their integration into the edited terrain model is outlined.

The outcomes of the thesis are topographic database that can be further used, final scene visualization of the digital model with all its components previews.

**Keywords:** 2,5D, 3D model, SketchUp, ArcScene, DTM, integration