In this work we create a computer simulation of the astrolabe of the Prague astronomical clock. The result of this work will by a didactic instrument which will help users discover and understand the astronomical clock. The task is to create a realistic three-dimensional computer model of the astronomical clock and also to implement all movement of the clock. The application will offer three-dimensional realistic visualization of the astronomical clock, description of the clock's parts, and projection of the celestial sphere on the astronomical dial and information which can be read from the dial. The application will provide a possibility to see animation of the astronomical clock and also to set the clock to an arbitrary time during the year.