Testing and validation of the numerical prediction model is an important part of its usage for weather prediction. The simulations have been performed with model WRF (Weather Research and Forecasting), of which basic principles are described. The simulation was set up in reanalysis mode, i.e. with perfect boundary conditions, for one month, July of 2000. The simulation in hydrostatic approximation with 10 km resolution is compared to the simulation with one nested domain in non-hydrostatic mode with 2 km resolution. The study is aimed at the convective and stratiform precipitation in daily total amount of precipitation and compared to the total amount from observed data. In addition, a two-day weather forecast was validated. The forecast has been run daily since January 2016 at the Department of Atmospheric Physics. Standard deviation of 24 and 48 hour forecast is compared with GFS global model analysis.