SUMMARY

Bachelor thesis "IoT based small greenhouse monitoring system" solves the problem for the potential user of monitoring and collecting continious data that describes the environment conditions and its changes over the long-term period inside a small greenhouse. This data helps a gardener to expose and prevent possible root causes for unsuccessfull growth of plants.

The aim of this work was to create a reliable system for continious monitoring of environment conditions in a comfortable way for the end user. As a result, all of the stated goals were achieved – system is easy and intuitive to use, its deployment and utilization does not require advanced knowledge or special skills, it collects data for period up to two years with efficient precision and does not contain any short lifecycle consumables.

System total price is not greater than potential competitors products – its prime cost for prototype is 34.30 €.

During the process of prototype development and creation many unexpected obstacles were met – Core processing unit architecture does not support newer versions of Java and JDBC, thus software had to be rebuild in accordance to older versions, reading analog signal on Raspbery Pi required additional customization of the system with analog-to-digital signal converter, system testing and gathering of test data took a lot of additional time.

However, we managed to overcome these obstacles and the resulting prototype fulfills the stated goals and requirements.