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## Development of an IoT system for sensing monitoring of soil properties

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In the age of big data, constructing a database plays a vital role in various fields. Especially, in the agricultural and environmental fields, real-time databases are useful because the fields are easily affected by dynamic nature phenomena. To construct a real-time database in these fields, various sensors and an Internet of Things (IoT) system have been widely used. In this study, an IoT system was developed to construct soil properties database on a real-time basis and aim to a big data system analysis that can assess ecosystem services provided from soil resources. The IoT system consisted of three types of soil sensors, main devices, sensor connectors, and subsidiary devices. The IoT system can measure soil temperature, moisture, and electrical conductivity (EC) data on a five-minute interval. Also, the devices were applied to two test-beds near Chuncheon city in South Korea and have been testing for the stability and availability of the system. In a further study, we will add various soil sensors and functions into the developed IoT system to improve their availability. If the developed IoT system becomes to be stable and functional, it can contribute to constructing soil properties database on a real-time basis and a big data system that assesses soil ecosystem services.