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Constructing applied Database System of Early Earthquake Warning information

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To make Earthquake Early Warning (EEW) more valuable, evaluation and verification of information are essential, as we all know. However, there is not any easy-to-use EEW dataset of alerted information up to now. We studied data structure of EEW information and constructed a new dataset suitable for evaluation, to accelerate EEW improvement process.

The EEW information has features such as:
○ one earthquake makes multiple (and variable) EEW informations
○ each data size of information is variable
○ data itself has a layer structure
Such features indicate that the table structure (or "conventional" Relational Database System) is not suitable to contain EEW information.

Emphasizing on simplicity, we chose to use JSON to write down our data format, and to utilize MongoDB to contain them. Our compilation resulted in 14.8MB data from EEW information of 7124 earthquakes from Oct. 2009 to Feb. 2014.

Keywords: Earthquake Early Warning, database, JSON, NoSQL, MongoDB