

not yet formed a distinctive brand of recreation and recreation. 5. Although the number of nursing homes is large, the overall facilities are obsolete and the supporting facilities are not perfect. 4. There are only a few township hospitals and dozens of clinics in the area. The lack of high-end medical facilities and equipment affects the development of health care industry.

**Conclusions:** 1. Combining regional advantages, positioning to build a world-class health destination. 2. Accelerate the development of industrial linkage, make full use of the advantages of regional tourism resources, highlight cultural specialties, and build an integrated tourism and health industry 3. Accelerate the cultivation of enterprises within the health industry and the introduction of external, focusing on the need to build high-end medical institutions.

## 087 | An exploration and reasoning tool for linked open data

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**Backgrounds:** The Semantic Web is an extension of the WWW and it expresses data as a triple structure that consists of ‘subject, predicate, object’. Linked Data consists of a lot of triples that represent knowledge about various subject domains and the number of triples keeps increasing. We present a system by which non-expert users can access the information available in the form of Linked Open Data (LOD). The goal of the research is to provide non-expert users with a simple-to-use system by which lay users can utilize or create Linked Data without difficulties.

**Methods:** We developed a system that allows users to search information based on entered keywords and supports a reasoning service based on Euler EYE engine (<http://eulersharp.sourceforge.net/>). To make the user-friendly interface, this system provides keyword search, shows searching results as a graph format and is based on node.js, jQuery, D3.js, and AJAX technologies. When a user wants to add an inference rule in the system, the user needs to set a premise and an inference result. The premise is a trigger for reasoning and by using a question mark, the user can set a universal quantifier with the name of it. For an existential quantifier, ‘[]’ or ‘\_:’ can be used. We have evaluated the proposed system against 12 non-expert users. Each participant accessed the system using Chrome Web browser and spent about two hours to search various types of information. Most of them found the system useful in

accessing the vast amount of information stored in the form of LOD. The system and its tutorial are available at <https://bit.ly/2Rxfige>.

**Results:** After experiments, detailed comments were reported about advantages and disadvantages of the system. As a positive side of the system, most participants mentioned that the system shows an intuitive view of the results as a graph. They liked both keyword-based search as well as a search based on a property. On the other hand, some participants found reasoning services difficult to use. At least, they commented that as non-expert users, writing rules for themselves were very difficult. There were a few participants who mentioned that they would plan to use the system for their research.

**Conclusions:** The system supports two types of functions: (1) keyword-based search (2) reasoning over Linked Open Data based on inference rules. Specifically, the reasoning service can help users understand the importance of machine-readable form used in the Link Open Data since it can compute derived results by executing inference rules provided by users. While our system is targeted for novice users, it can be also used by domain experts who have knowledge on SPARQL so that they can make inferences over the data that they can find by executing SPARQL queries.

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## 088 | Portable device for visual performance examination and visual training

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**Objectives:** Most of the information sensed by human comes from visual sense. Myopia, amblyopia, etc. affect the perception of the outside world greatly. The project aims at the design of a portable device for visual performance examination and visual training based on machine vision and virtual reality (VR) technology. By showing images with specific parallax to both eyes, VR can deceive the brain to make it feel like a 3D scene. Some specially designed plane or stereo pictures and videos can be displayed to the human eyes through VR. The response of eyes to the visual stimulation can be detected through machine vision measurement, and the next stimulation can be performed according to the response.

**Methods:** Using the ray tracing method, a single-piece eyepiece is designed using the K26R material. The eyepiece images the smartphone screen to a virtual image in front of the eyes. The distance between the virtual image and human eyes can be easily adjusted by moving the eyepiece or the smartphone. Two micro-cameras are installed before each eye,