Ontology Development for Sri Lankan Medicinal Plants: A Knowledge Representation

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Abstract

Our ancestors consumed medicinal plants through their day to day activities which leads them to a long and healthy life. It plays an important role in their life. But in this fast moving world the value of these plants are gradually going down. As they take comparably long time to give relief from the disease, the people are not interested in these medicines. Fast and modern foods are replaced our traditional food system which lessen the intake of herbs through foods. We have responsibility to aware our future generation about this medicinal plants and their usage, because they are in danger of extinct. The knowledge about these plants are scattered over the web and some experts are still here to carry this knowledge to our future. This research aims to collect all these knowledge from different places and build a knowledge base system for Sri Lankan medicinal plants. This knowledge base consist plants parts, diseases, preparation method and mixtures if any. Ontology is the technique used to develop the knowledge base. To develop the ontology, Protégé which is an open source is used. SPARQL is the language used to query over this knowledge base.

1. Introduction

Sri Lanka is a country of rich history and heritage. An important one among them is the indigenous system of Medicine. The traditional medical practices were developed over generations enriched with the Ayurveda system of medicine from North India, the Siddha system of medicine from South India and the Unani system of medicine of Arabs and presently known as the Indigenous system of medicine in Sri Lanka. Sri Lanka is blessed with a large variety of flora in which many of them have some medicinal properties. Each part of a plant as leaves, flowers, roots, seeds and barks have different properties and plays a vital role in indigenous medicine as well as for home remedies many Sri Lankans commonly practice for centuries. Due to fast-phased life style indigenous medical practices became unpopular and the knowledge of these valuable plants is in danger of being lost forever. Our ancestors consumed various plants through their daily meals and used them in their day to day household tasks from brushing the teeth to sleeping. These practices and the knowledge are mostly forgotten now. Because of the lack of awareness these plants are often destroyed as weeds or unwanted plants and in danger of extinct.

These issues motivated to create an information system to store the details of the medicinal plants, their properties and details of indigenous practices related to the plants in such a way to retrieve the correct details for partial and vaguely detailed queries. Methods will be identified to retrieve details by providing pictures as well. The system will be modeled to store the details appropriately such that it can be used as a decision support system for indigenous medical practices to know, protect and use plants for a healthy and environmental friendly living.