ISSN: 1391-8796
Proceedings of 8th Ruhuna International Science & Technology Conference
University of Ruhuna, Matara, Sri Lanka
February 17, 2021

Defining a Generic Service Description for RESTful Web Services

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A web service is a piece of software that facilitates communication between two devices through a machine processable interface over the Internet. There are two popular architectures of web services namely Simple Object Access Protocol (SOAP) and Representational State Transfer (RESTful) web services. The Web service description is a human and machine readable document that helps to find a web service published over the internet. Therefore web service description requires a generalized format. RESTful is one type of web service which has several ways of describing its description. Among those RESTful web service descriptions Swagger and RAML are popular languages. There are common features in both languages as well as specialized features to each category. However, there is no common format for web service description for RESTful web services. This research proposes generic web service description for RESTful web services. By following the design science research methodology thorough literature survey was conducted specifically to analyze Swagger 3.0 and RAML 1.0 languages. Then a generic mete-model was developed and it is enriched not only with common features of above two languages but also with several new attributes. The meta-model provides guidance for the generic service description. In the process of defining the generic model, meta-model for Swagger and RAML were created. The transformation rules were developed using Atlas Transformation Language (ATL) to transform the Generic Description to Swagger and RAML respectively and vice versa. Results were validated by mapping selected popular web service descriptions to the generic service description.

Key words: *Web service description, REST, Swagger, RAML, ATL*

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