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**MathQ -
Answer Generator for Sinhala Arithmetic Problems**

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Abstract

Natural Language Processing(NLP) has given the opportunity of letting the machines understand and perform various tasks over text and speech data involving different languages. The research is also based on Natural Language Processing. Generating answers for Sinhala Arithmetic Problems that contains multiplication and division. Sinhala language is only used in Sri Lanka as the first language. Sinhala arithmetic problems have a different way of expressing the characteristics of the problem comparing to other languages. Sinhala domain is a less explored area since it's a less resource domain. Answer generation for arithmetic problems that contains multiplication and division is the research area that would be discussed in this research.

As for the approach of the system MathQ has used Logistic regression for the question classification part. With that the related work the research will build the solution for generating answers for Sinhala arithmetic problems that contains multiplication and division. From identifying the keywords in the problem after identifying the operator then for the calculation of the answer using the NLP model. The NLP model will be trained and tested with the suitable data sets to get better accuracy and to get better performance.

The solution has an improvement comparing to the related work that has made in the same domain. The system has been tested over many times and have shown great results and have been optimized to get the better performance and higher accuracy. The model can optimize for further developments that may increase the scope of the system.

Keywords : Natural Language Processing, Machine Learning, Question Answering, Sinhala Mathematical Problems