DEVELOPING A MODEL TO PREDICT MATHEMATICS PERFORMANCE USING NEURAL NETWORK

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ABSTRACT

This study aims to use neural network to develop a model to predict mathematics performance of Universiti Teknologi MARA Kampus Melaka (UiTMKM) students. This model allows the system administrator to train and normalize data as well as trains. Once the model has been established, the system can be used to forecast mathematics achievement of a future UiTMKM student based on his or her academic background and performance in certain subjects in the Sijil Pelajaran Malaysia (SPM) examination. A neural network technique, using Multi Layer Perceptron (MLP) and back propagation algorithm is employed. A total of 391 data samples of diploma students were collected, trained and tested using this model. The input variables consist of SPM results in modern mathematics, additional mathematics, sciences, physics and English as well as several factors like age, gender, school location and subject stream. Analysis of data shows a reasonably strong correlation between the input variables and the targeted output variables, which are mathematics grades obtained at UiTMKM.

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