

**INSTITUT SAINS MATEMATIK  
UNIVERSITI MALAYA  
SIRI KOLOKIUUM**

- Tajuk:** Outlier Labeling with Boxplot Constructed Based on Skewness and Kurtosis\*
- Penceramah :** Prof. Sim Chiaw Hock  
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- Tarikh :** 27 Februari 2008 (Rabu)  
**Masa :** 3.00 pm – 4:00 pm
- Tempat :** MM3, INSTITUT SAINS MATEMATIK

**Abstract**

The conventional boxplot is a popular and useful graphical tool for labeling possible outliers in a set of univariate data. A drawback of the conventional boxplot in detecting outliers is that it is constructed without taken into consideration the number of observations and the shape of the dataset under study. We focus on the detection of multiple outliers by constructing a modified boxplot with its lower fence  $LF$  and upper fence  $UF$  evaluated under the requirement that for an outlier-free sample of  $n$  observations taken from an hypothesized distribution, the probability that one or more observations in the sample would fall outside the region  $(LF, UF)$  is equal to a prescribed small value. However, in practice, the distribution of the dataset under study is usually unknown. We thus construct our modified boxplot based on the distribution fitted to the shape of the given dataset in terms of its coefficients of robust skewness and kurtosis when its underlying distribution is unknown. Examples are given to illustrate the proposed outliers labeling procedure.

\* This talk is in fulfillment of receiving a grant from Univ. Malaya to attend the 7 th Annual Hawaii International Conference on Statistics, Mathematics and Related Fields, 17-19 2008.

**SEMUA DIJEMPUT HADIR**