1. Measuring Performance
   1. Introduction

It measures some performance related statistics for message-based communications between a sender and receiver.

* 1. Description
* The extension logs following performance related statistics:
  + Total numbers of conversations, which occurred in the system where a conversation can be defined with any combinations of, sends or receives. Different types of conversations are one-way send, one-way receive, request-reply and multi-step conversations
  + Total time for all conversations
  + Average turnaround time for a request to be processed where average turn-around time is the average of a timespan from conversation start time to conversation end time
  + Maximum turnaround time for any conversations
  + Minimum turnaround time for any conversation
* The program logs the time when a conversation starts
* It logs and calculates the above statistics when the conversation ends
* Note that a conversation can be a simple request-reply type exchange of messages or a complex combination of send and receive events. We are defining the conversations for sample applications as follow:
  + *Levenshtein Edit-Distance Calculator:* A conversation is when a client sends a request and receives a response from the calculator
  + *File Transfer Protocol:* A conversation is when a client sends a request for a file download and when it receives the last response of data chunk for that file from the server
  + *Weather Station Simulator:* A conversation is when a receiver sends a request to get weather related data readings and receives the first response from the transmitter
  1. Application Material
* Developers would be provided with the following classes:
* *Stats:* A data structure containing elements to measure performance
* *PerformanceMeasure:* It logs performance measure using sliding window