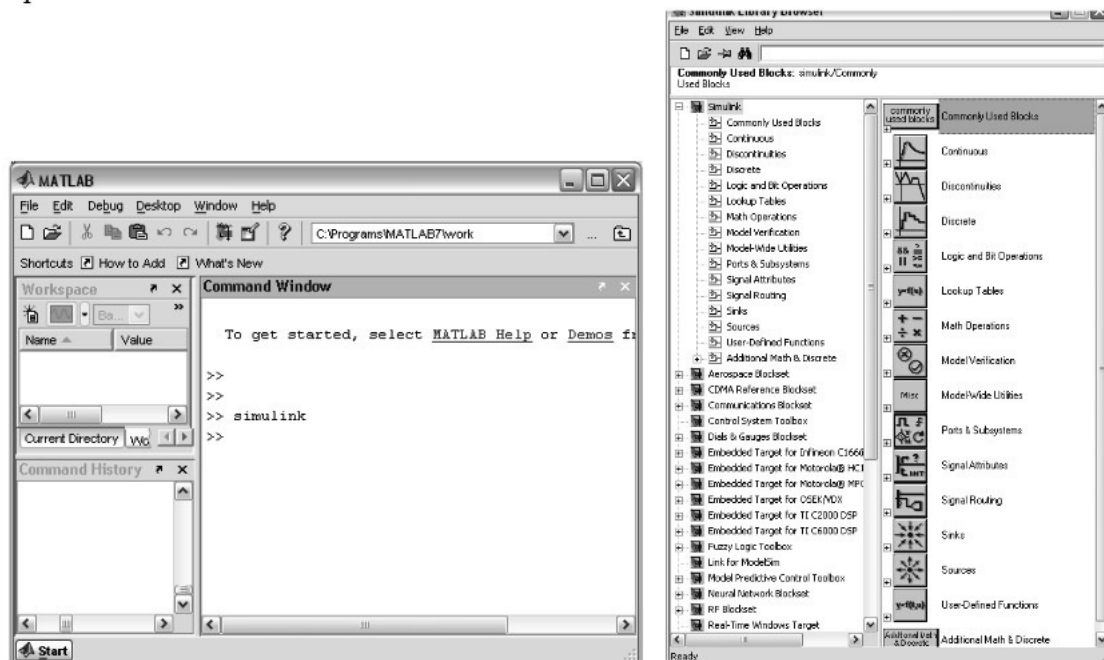


# SIMULINK for Process Control

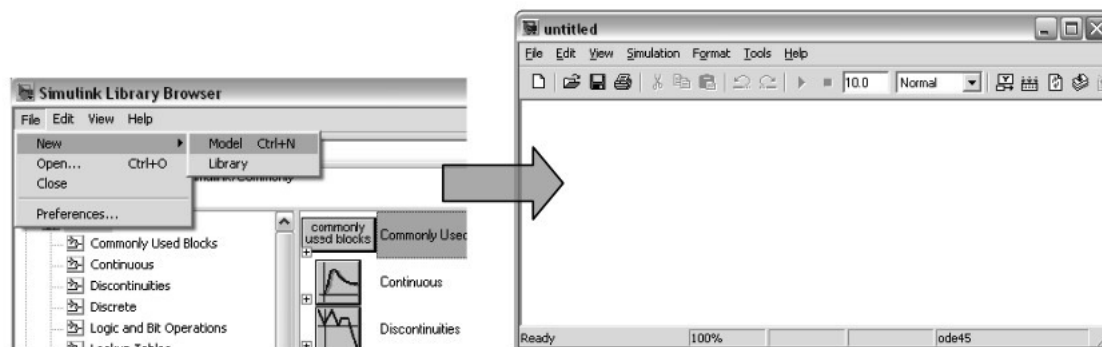
MATLAB, which stands for MATrix LABoratory, is a technical computing environment for high-performance numeric computation and visualization.

SIMULINK is a part of MATLAB that can be used to simulate dynamic systems. To facilitate model definition, SIMULINK adds a new class of windows called block diagram windows. In these windows, models are created and edited primarily by mouse-driven commands. Part of mastering SIMULINK is to become familiar with manipulating model components within these windows.

1. Start Matlab and then the Simulink environment by typing `simulink` to the matlab prompt.

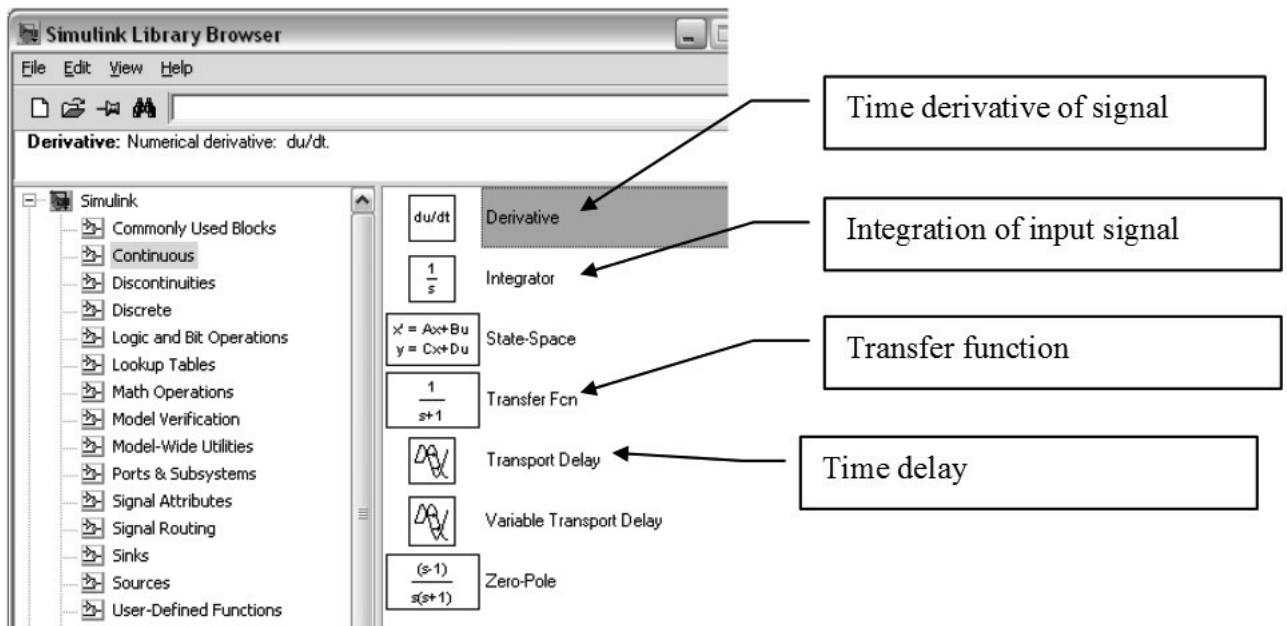
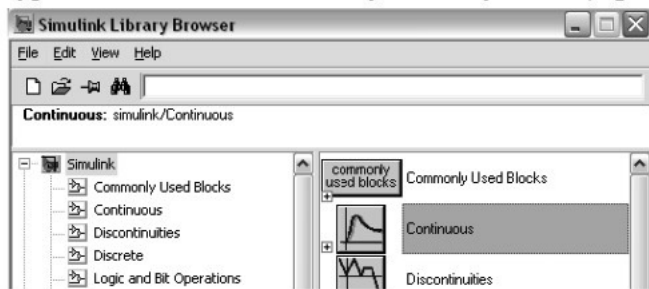


2. Open a new Simulink model window from File → New → Model

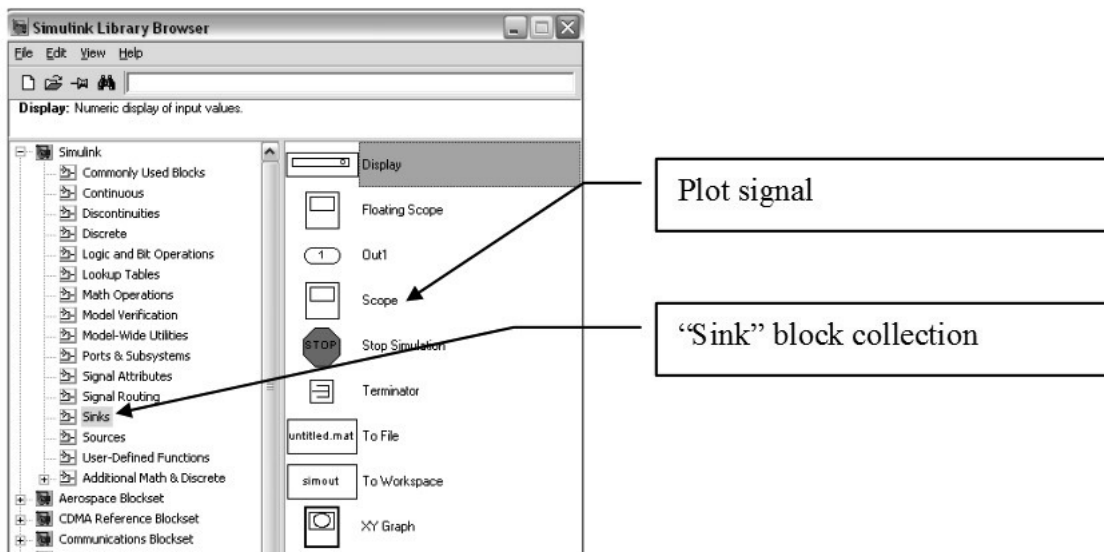


3. You can construct your block diagram by drag-and-dropping the appropriate blocks from the main Simulink window. Some of the most commonly used blocks:

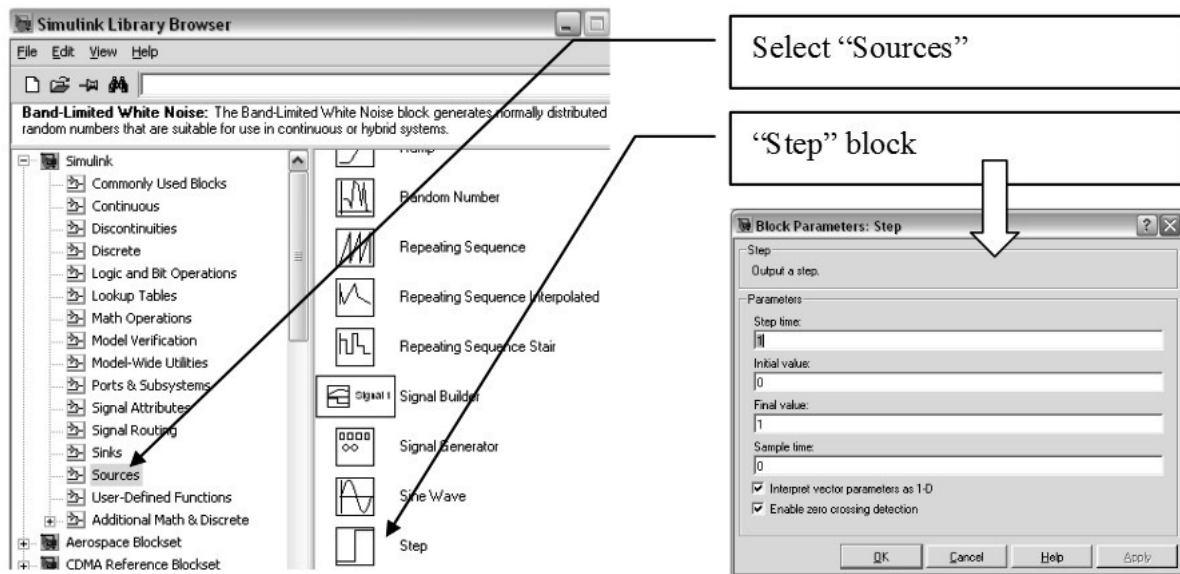
From the “Continuous” blocks (double click on the “Continuous” button) you can use the typical blocks to construct dynamic systems (e.g. transfer function, time delay, etc.).



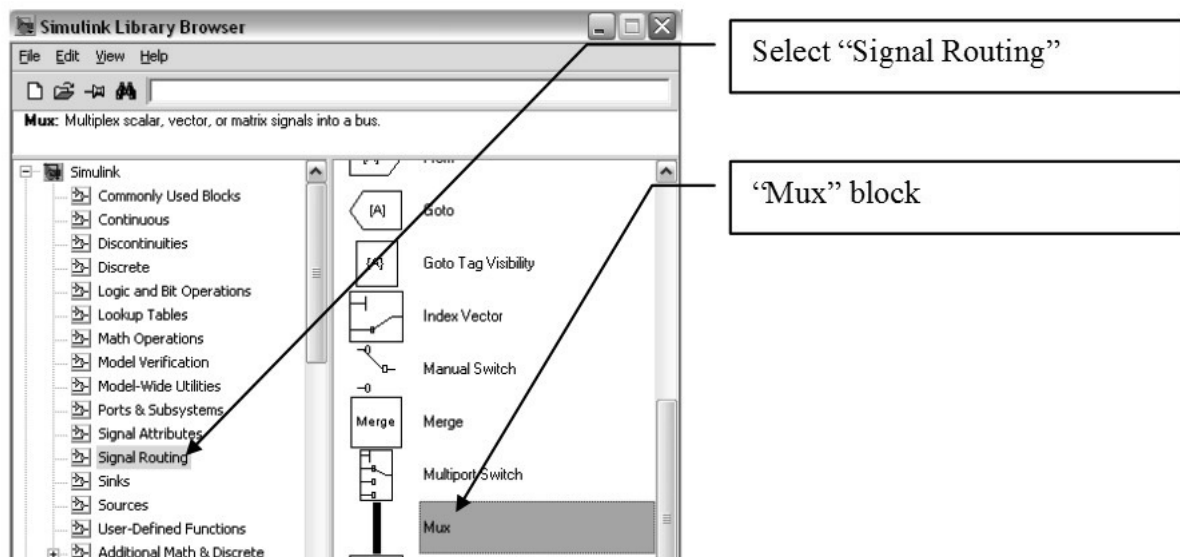
From the “Sink” we often use the “Scope” block to plot the results.



From the “Sources” the “Step” function is used to simulate step changes in the input:



From the “Signal Routing” blocks the “Mux” block is often used to concatenate signals into a “bus” e.g. for plotting multiple signals in “Scope”.



The “Math Operations” set of blocks provides the usual mathematical operations:

