BRIEF INTRODUCTION TO SIMULINK

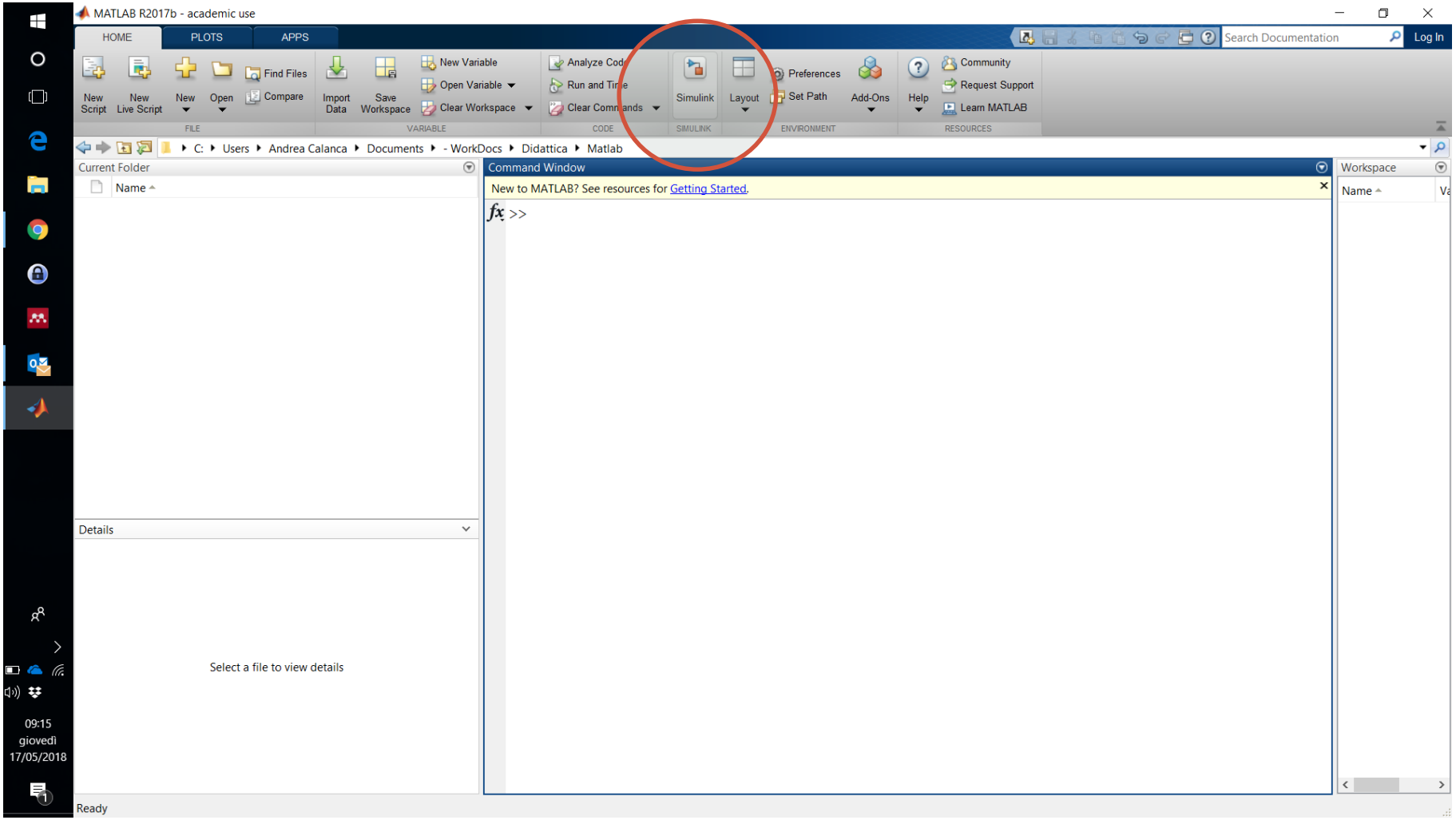
Andrea Calanca

Introduction to Simulink

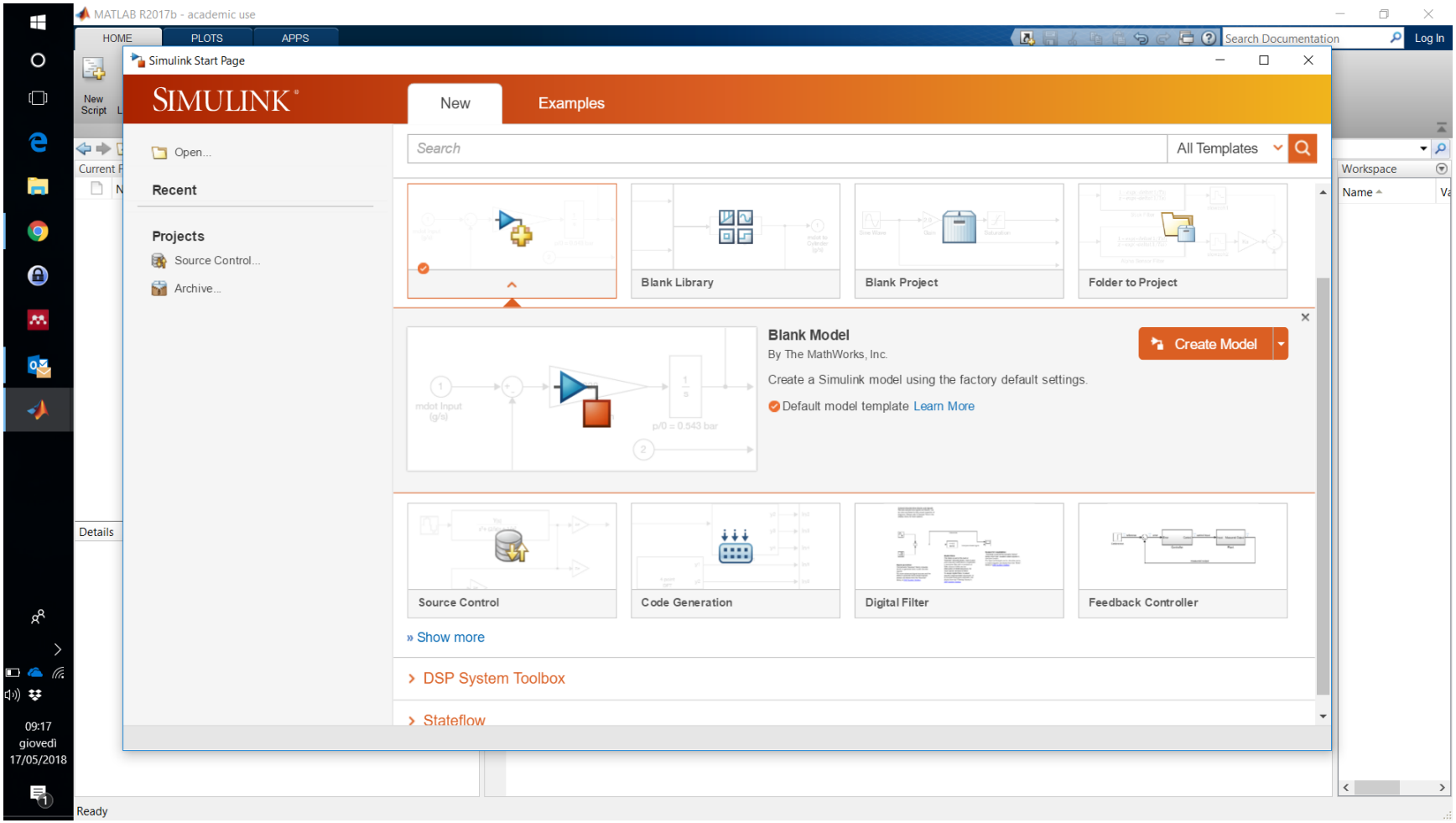
- Simulink is a commercial tool for modeling, simulating and analyzing dynamic systems.
- Its primary interface is a graphical block diagramming tool and a customizable set of block libraries.
- It offers tight integration with the rest of the MATLAB environment and can either drive MATLAB or be scripted from it.
- Simulink is widely used in control theory and digital signal processing for simulation and design.

Introduction to Simulink

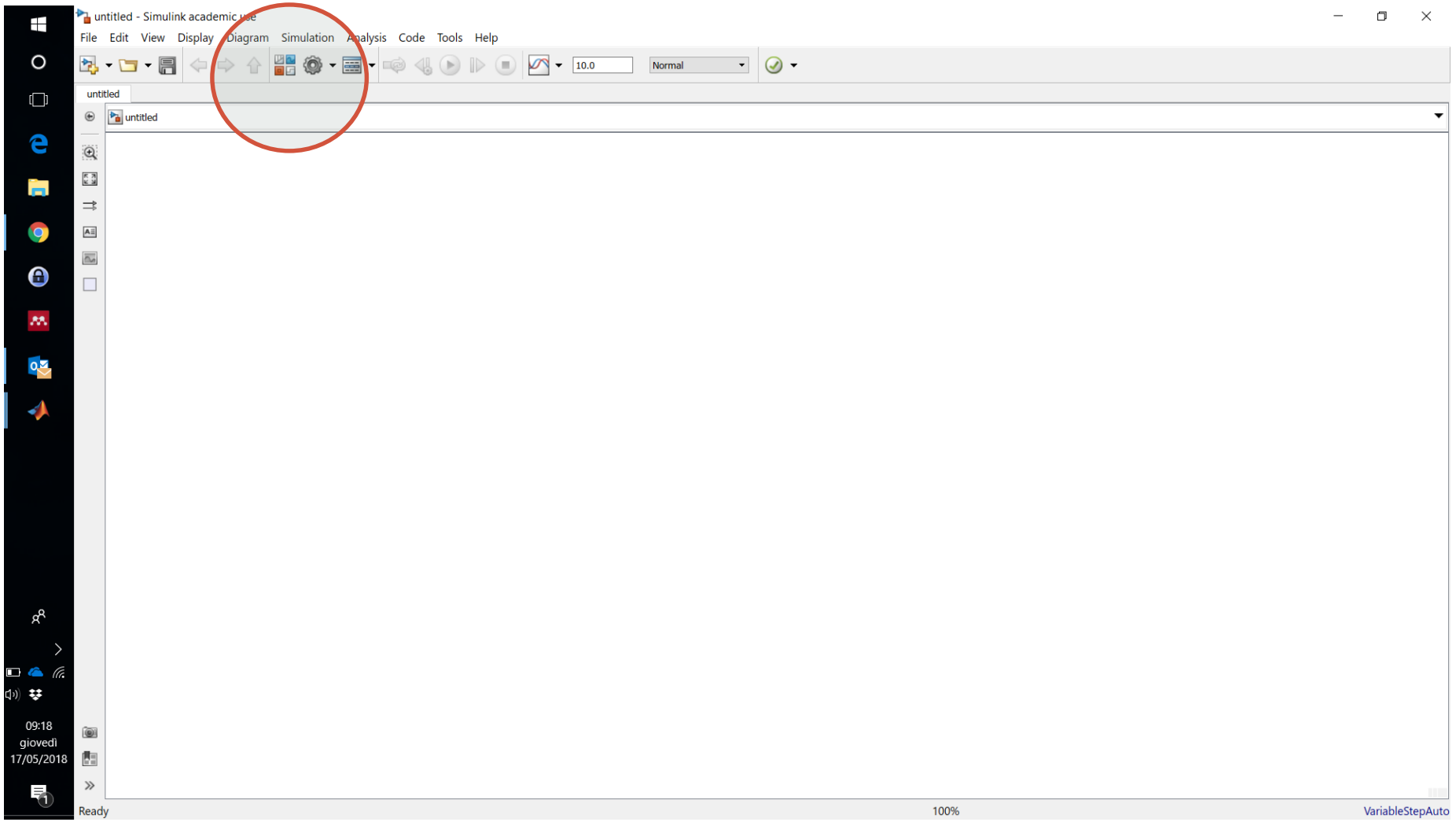
Running Simulink



Introduction to Simulink

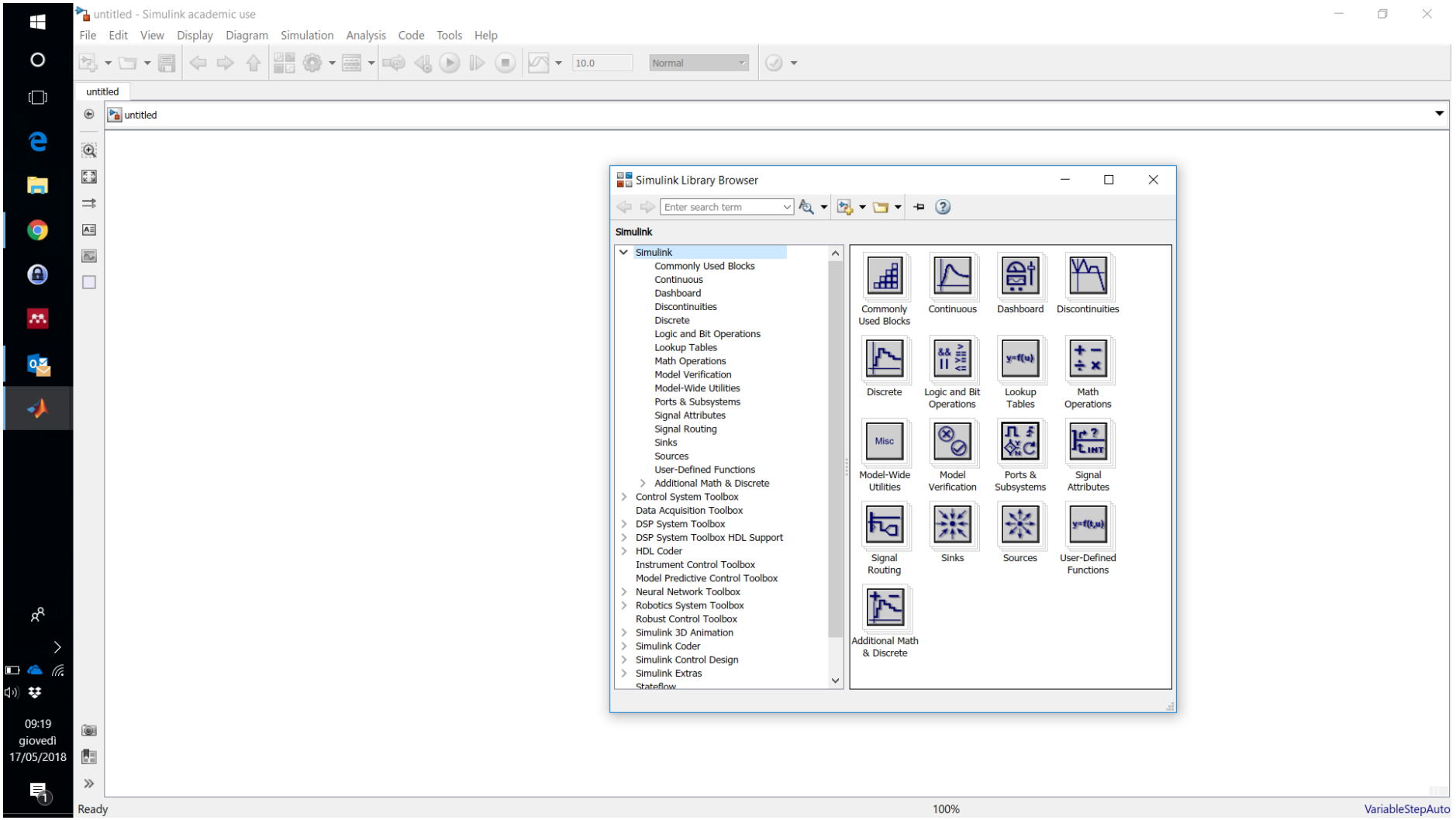


Introduction to Simulink

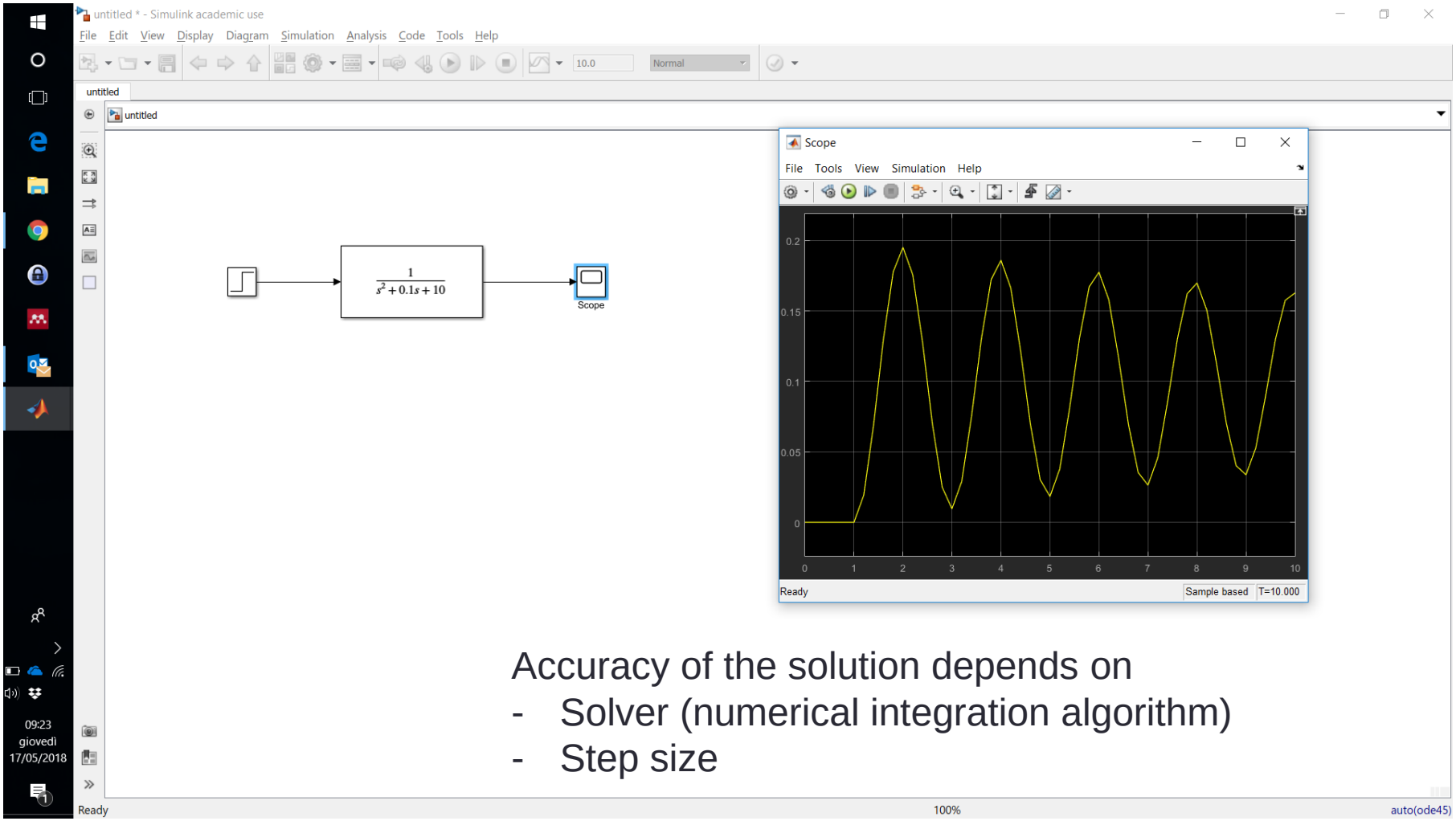


Introduction to Simulink

Library Browser



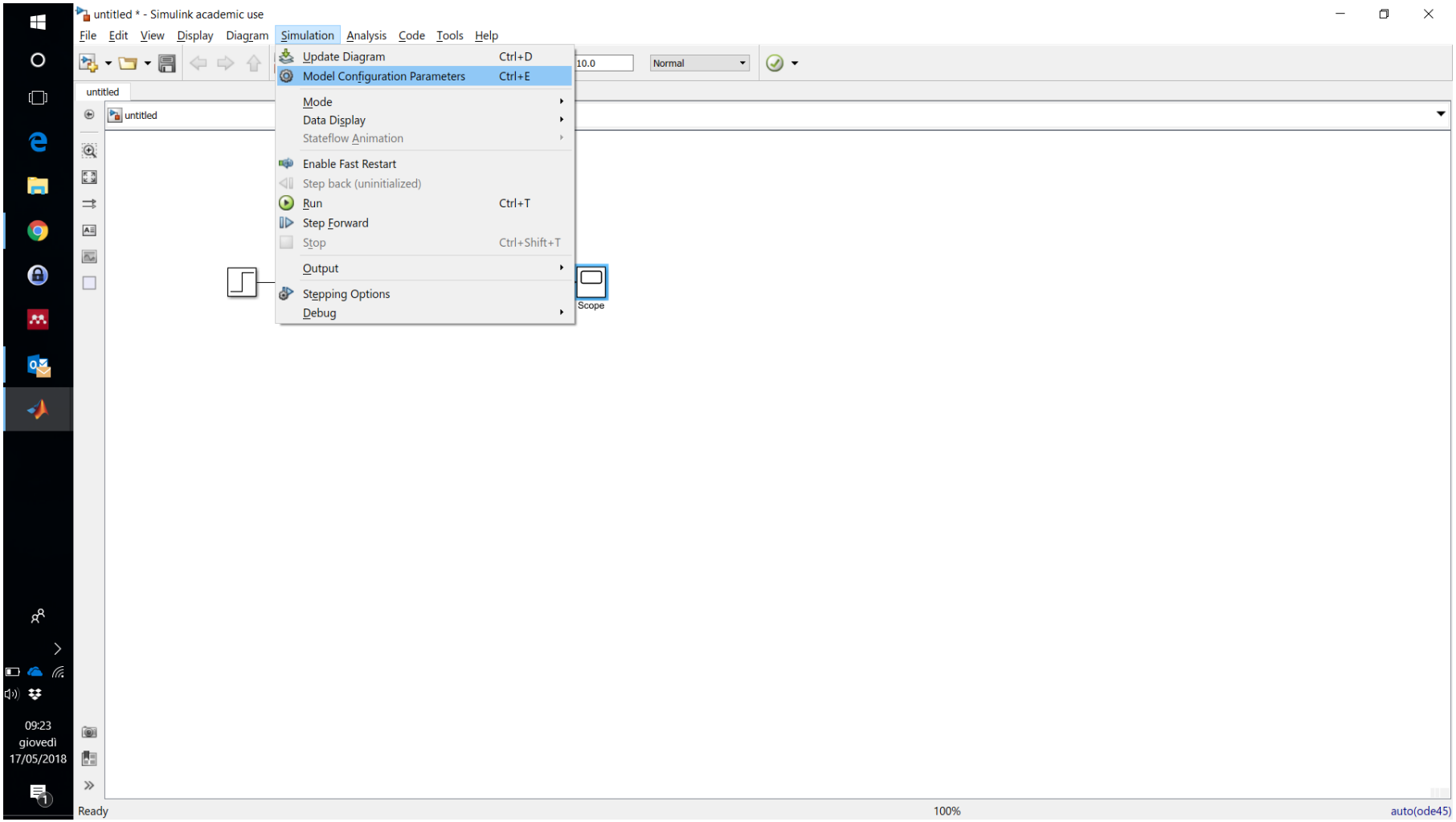
Introduction to Simulink



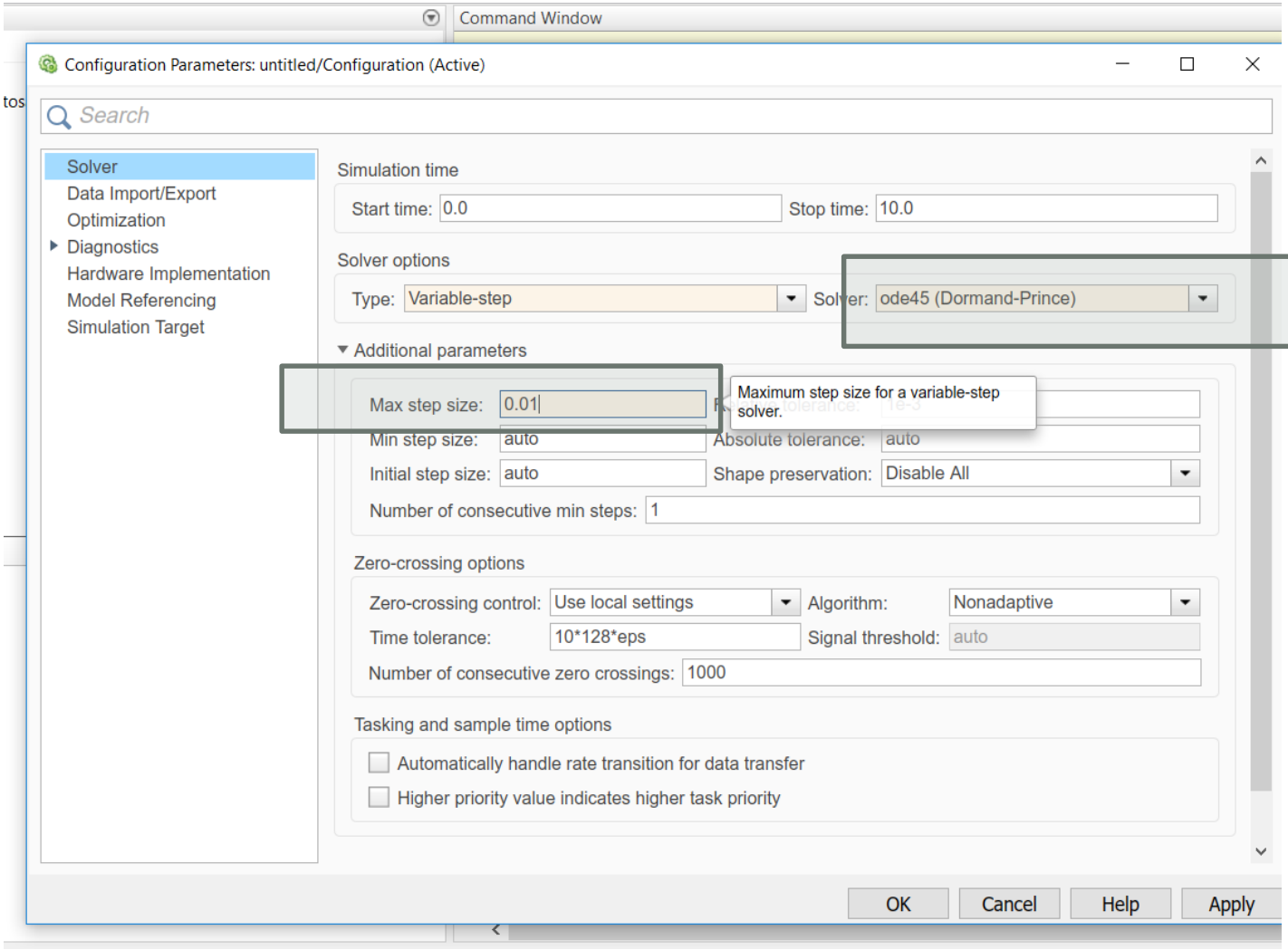
Accuracy of the solution depends on

- Solver (numerical integration algorithm)
- Step size

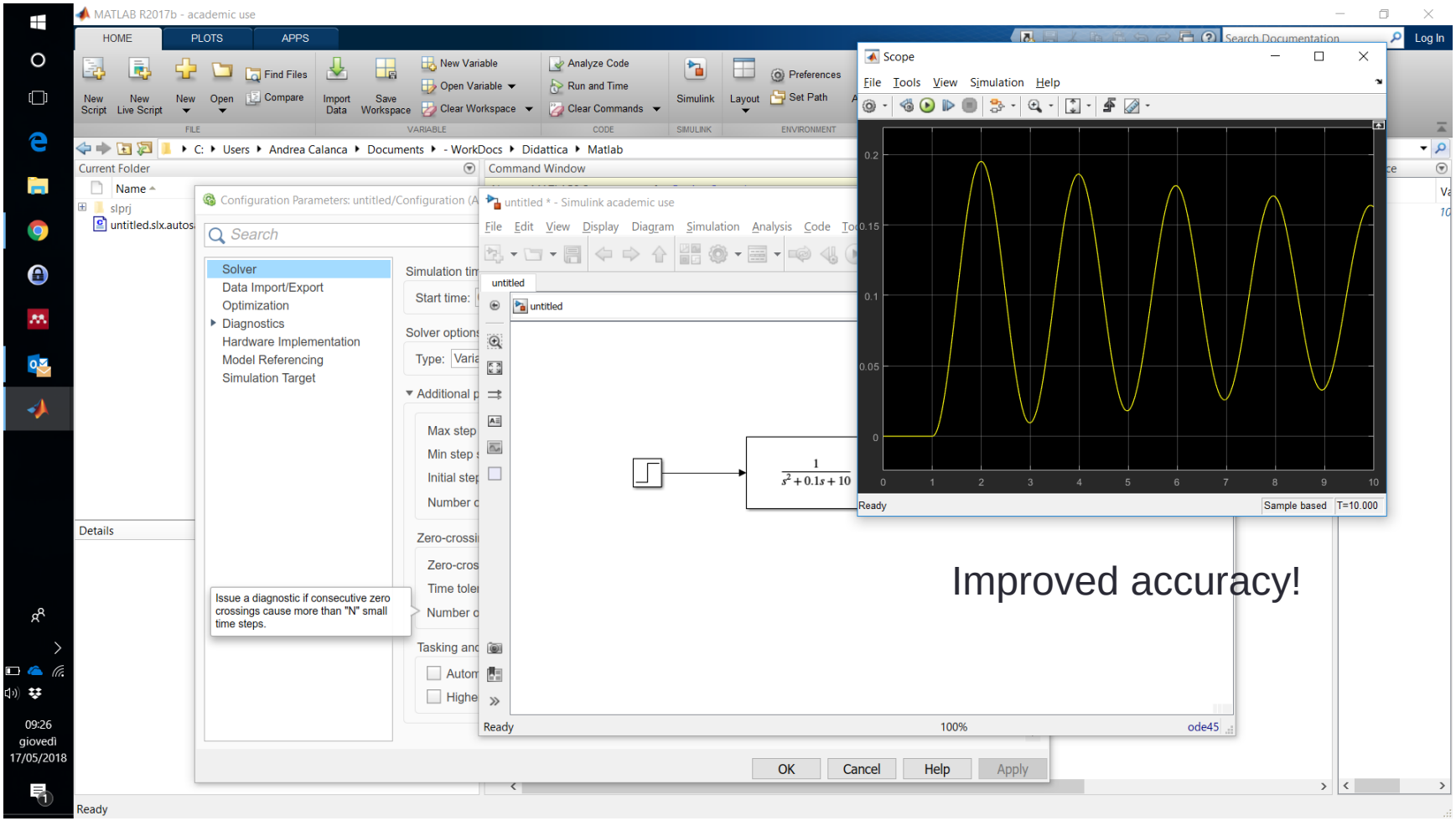
Introduction to Simulink



Introduction to Simulink



Introduction to Simulink



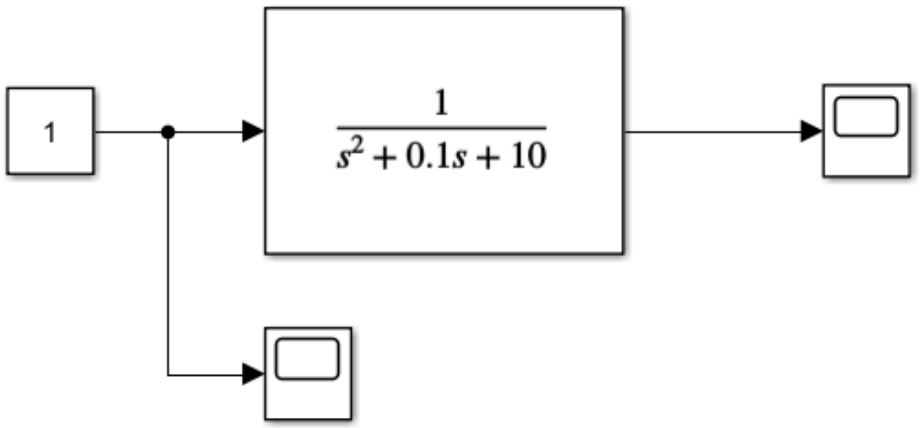
Introduction to Simulink

Exercise 1

Simulate a mass-spring-damper system using the block transfer function

m = 1, d = 0.1, k =10

This block do no accept initial conditions!



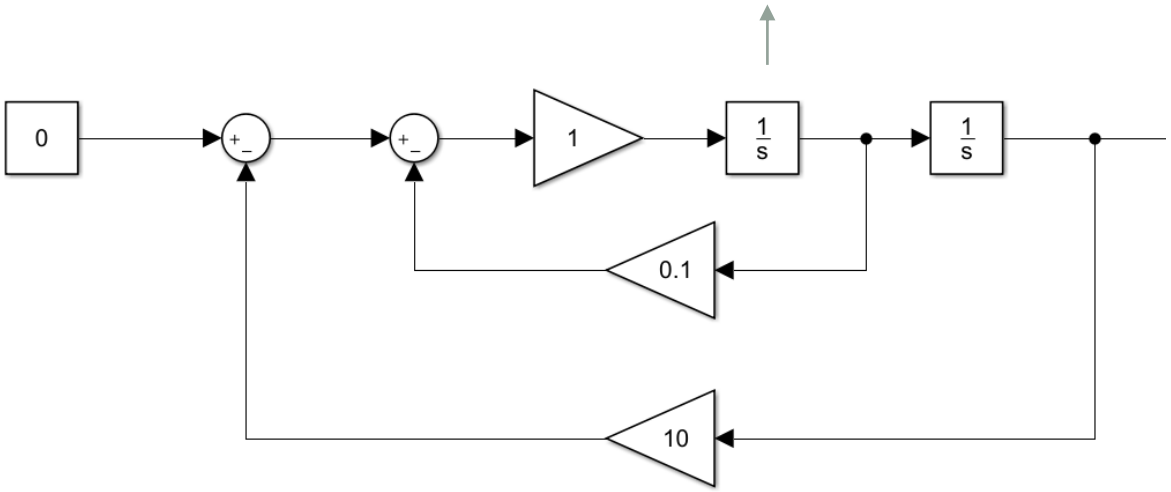
Introduction to Simulink

Exercise 2

Simulate a mass-spring-damper system using the block integrator

m = 1, d = 0.1, k =10

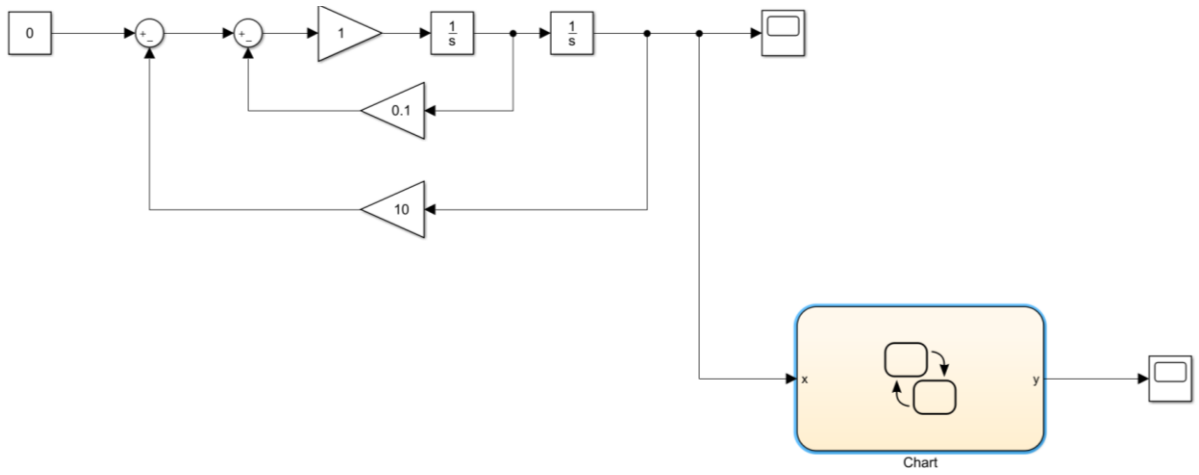
This block accepts initial conditions!



Introduction to Simulink

Exercise 3

Use stateflow to implement a FSM which accept the mass position as input



Introduction to Simulink