# **Spring Damper Project:**

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In the figure the variables and parameters have the following meaning:

* 𝑚 = mass (kg)
* 𝑐 = damping constant (kg/s) - proportional to the speed of 𝑚m
* 𝑘 = spring constant (N/s/s) - proportional to the distance 𝑚m is from it's
* 𝑥(𝑡) = position of 𝑚m as a function of time
* 𝐹(𝑡) = A force applied to 𝑚m as a function of time

In the background notebook, we determined that:

Text

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In the first part of our experiment, we set and we get a homogeneous linear equation. The different case below shows the codes we used to represent the overdamped, underdamped and critically damped of our linear equation.

Overdamped case code in python:

Graphical user interface, text, application, email

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Graphical user interface, text, application, email

Description automatically generated

Chart, line chart

Description automatically generated

Critically Damped coded in Python:

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Graphical user interface, text, application

Description automatically generated

Underdamped case coded in Python:

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Graphical user interface, text, application

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