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Manipulate[
(*by Nasser M. Abbasi, June,17,2014*)
tick;
Module[{y, data},
(*solution of eq=m y''[t]+c y'[t]+k y[t]= -m g;*)
y = Chop[
$$\frac{1}{2k\sqrt{c^2-4km}} gm \left( -c e^{\frac{(-c-\sqrt{c^2-4km})t}{2m}} + c e^{\frac{(-c+\sqrt{c^2-4km})t}{2m}} - \right. \\ \left. 2\sqrt{c^2-4km} + e^{\frac{(-c-\sqrt{c^2-4km})t}{2m}} \sqrt{c^2-4km} + e^{\frac{(-c+\sqrt{c^2-4km})t}{2m}} \sqrt{c^2-4km} \right)$$
;
If[y < -7,
If[wasHit,
wasHit = False;
y = -6.95,
wasHit = True;
y = -7]
];

data = rugo[-3, 0, -3, L0 + y - massThickness];
If[runningState == "RUNNING",
t = t + delta;
If[t > 999.9, t = 0];
tick = Not[tick]
];
Grid[{
{Row[{"Time ", padIt2[t, {5, 2}]}]},
{
Graphics[
{
{EdgeForm[Black], LightGray,
Rectangle[{-4, L0 + y - massThickness}, {4, L0 + y + massThickness}]},
Line[{{2, 0}, {2, 1}, {2.5, 1}, {2.5, 1.5}}],
Line[{{2, 1}, {1.5, 1}, {1.5, 1.5}}],
Line[{{1.6, 1.2}, {2.4, 1.2}}],
Line[{{1.6, 1.3}, {2.4, 1.3}}],
Line[{{2, 1.3}, {2, L0 + y - massThickness}}],
{Thick, Line[{{-6, 0}, {6, 0}}]},
Line[data]
}, PlotRange -> {{-5, 5}, {-1, 11}}, Axes -> False, ImageSize -> 300, ImagePadding -> 5
]
}
]
],
Grid[{
"damping",
Manipulator[Dynamic[c, {c = #, t = 0} &], {0, 1, 0.01}, ImageSize -> Small],
Style[Dynamic@padIt2[c, {3, 2}], 11]
}
]

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},
{"stiffness",
 Manipulator[Dynamic[k, {k = #, t = 0} &], {1, 100, 0.01}, ImageSize → Small],
 Style[Dynamic@padIt2[k, {5, 2}], 11]
},
{"mass",
 Manipulator[Dynamic[m, {m = #, t = 0} &], {1, 10, 0.01}, ImageSize → Small],
 Style[Dynamic@padIt2[m, {4, 2}], 11]
},
{Text@Style["slow", 11],
 Manipulator[Dynamic[delta, {delta = #} &], {0.01, .1, 0.01},
 ImageSize → Small, ContinuousAction → False], Text@Style["fast", 11]
},
{Grid[
 {
 Button[Style["run", 12], {runningState = "RUNNING";
 tick = Not[tick]}, ImageSize → {55, 35}],
 Button[Style["stop", 12], {runningState = "STOP";
 t = 0;
 tick = Not[tick]}, ImageSize → {55, 35}]
 }
 ]
 }
 ],
 {{wasHit, False}, None},
 {{m, 1}, None},
 {{k, 10}, None},
 {{c, 0}, None},
 {{runningState, "STOP"}, None},
 {{t, 0}, None},
 {{delta, 0.01}, None},
 {{tick, True}, None},
 TrackedSymbols → {tick},
 Initialization →
 (
 g = 9.8; L0 = 10; massThickness = 0.5;

 (*definitions used for parameter checking*)
 integerStrictPositive = (IntegerQ[#] && # > 0 &);
 integerPositive = (IntegerQ[#] && # ≥ 0 &);
 numericStrictPositive = (Element[#, Reals] && # > 0 &);
 numericPositive = (Element[#, Reals] && # ≥ 0 &);
 numericStrictNegative = (Element[#, Reals] && # < 0 &);
 numericNegative = (Element[#, Reals] && # ≤ 0 &);
 bool = (Element[#, Booleans] &);
 numeric = (Element[#, Reals] &);
 integer = (Element[#, Integers] &);
 padIt1[v_?numeric, f_List] := AccountingForm[Chop[v], f,
 NumberSigns → {"-", "+"}, NumberPadding → {"0", "0"}, SignPadding → True];
 padIt2[v_?numeric, f_List] := AccountingForm[Chop[v], f,

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NumberSigns → {"", ""}, NumberPadding → {"0", "0"}, SignPadding → True];
padIt2[v_?numeric, f_Integer] := AccountingForm[Chop[v], f,
NumberSigns → {"", ""}, NumberPadding → {"0", "0"}, SignPadding → True];

rugo[xkezd_, ykezd_, xveg_, yveg_] := Module[{step = 20, szel = 1
(*spring width*), hx, hy, veghossz = 0.3, hossz, dh, i}, {hx = xveg - xkezd;
hy = yveg - ykezd;
hossz = Sqrt[hx^2 + hy^2];
dh = (hossz - 2 * veghossz) / step;
{xkezd, ykezd}}~Join~
{{xkezd + hx * (dh + veghossz) / hossz, ykezd + hy * (dh + veghossz) / hossz}}~Join~
Table[If[OddQ[i], {xkezd + hx * (i * dh + veghossz) / hossz + hy * szel / hossz,
ykezd + hy * (i * dh + veghossz) / hossz - hx * szel / hossz},
{xkezd + hx * (i * dh + veghossz) / hossz - hy * szel / hossz,
ykezd + hy * (i * dh + veghossz) / hossz + hx * szel / hossz}], {i, 2, (step - 2)}]~
Join~{{xkezd + hx * ((step - 1) * dh + veghossz) / hossz,
ykezd + hy * ((step - 1) * dh + veghossz) / hossz}}~Join~{{xveg, yveg}}];
)
]

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damping  0.43

stiffness  065.86

mass  07.41

slow  fast

Time 000.00