Oral Presentation 1 (6-8 min) Coding Grading Form

Be aware, the final score indicated by this form may not be your actual score. Reduction for tardiness or lack of participation on data acquisition & presentation preparation days are not reflected on this form (but will be in the actual grade sheet).

Title slide with 1) cool image (citation if web image), 2) full names, & 3) date

Goal slide with screen shot of code questions we hope to use the code to answer
- Does code output match theoretical predictions?
- Does code output match experimental data?

Slide numbers 18 point font?

Theory – Applicable kinematics, force, and/or other theoretical equations (e.g., COR) clearly written using the equation editor. Variables in italics! Ensure coordinate system matches what was used in your code (workbook solutions often use a rotated coordinate system). State what we expect for the signs of position, velocity & acceleration.

Include a slide or two walking us through boring (but important stuff) such as constants, drawing objects, etc.
- Include screen shots of code (font size >18 point)
- Include screen shots of code output on same slide

Include a slide explaining the Euler-Cromer Method (ECM)
- List the steps of the ECM in pseudo code
- Screen shots of actual code implementing the ECM (font size >18 point)
- Show gif of code running (or run code live)

Include xt-, vt-, & at-plots.
- Plots fill >90% of the screen (but not all the way to the edge)
- Axis labels with correct units
- Units are NOT italicized
- Variables are italicized (and match variable names in theory)
- If using words (e.g., position) do *not* use italics
- Space between axis label and units: t (s) not $t(s)$
- 18 point font on all text (including numbers on axes)
- Major tick marks (cross) & minor tick marks (inside)
- Major *and minor* tick increments multiples of 1, 2, or 5
- Use prefixes to reduce excessive leading zeros
- Experimental points are dots (with no lines)
- Trendlines or theory curves are lines (with no dots)
- Include a legend if more than one curve on a plot
- Space between numbers and units: $m = 3.2$ g not $m = 3.2$g

xt-plot things to discuss
- Discuss when object is moving forwards or backwards while referring to slope.
- Discuss when speeding up/slowing down & refer to slope.
- *If air resistance:* emphasize final slope = v_T (provide value).
  - Your plots should have experimental and code
  - If you found $y_{th}(t)$ in the solutions, include a theoretical curve & equation (with parameters used). Use equation editor to make these look professional.
- *If spring:* show theoretical curve & equation (with parameters used). Use equation editor to make these look professional.
  - Code & exp are dots, smooth line for theory (include legend). If using small time steps, might use smooth lines for all but use different dash type for each.
  - If available, include experimental data as well (as dots).
  - Emphasize period & amplitude when showing the xt-plot.

vt-plot things to discuss
- Discuss when object is moving forwards or backwards while referring to values. Simultaneously state if the object is speeding up or slowing down.
- Be careful when you have negative values. I often use the phrasing such as "v becomes more negative…the object is moving down and speeding up" or "v becomes less negative…the object is moving down and slowing down".
- Show theoretical curve & equation (with parameters used). Use equation editor to make these look professional.
- *If air resistance:* emphasize final value = v_T (provide value).
- *If spring:* include a slide showing both xt- & vt- plots and emphasize the vt-plot is the derivative. Do this by pointing out several slopes on the xt-plot and comparing them to the values of v on the vt plot.

at-plot things to discuss
- Show theoretical curve & equation (with parameters used). Use equation editor to make these look professional.

  Recall: $a_{th}(t) = \frac{d}{dt} v_{th}(t)$…you can use Wolfram Alpha.
- *If air resistance:* Use FBD to predict value of a if ball released from rest at $t = 0$. Verify that value on plot. Discuss coordinates and ± sign!
- *If air resistance:* Use FBD to predict value of a as time increases (become more positive or more negative?). Verify on plot.

- Within time limits
- High contrast
- Large font size (>18 font)
- Consistent use of terminology & variable names
- Consistent color coding
- Large clear images with sparse wording
- Avoided use of data tables
- All speakers audible in the back of the room
- Eye contact with students (not staring at instructor or screen)
- Effective use of pointer/animations (not distracting)
- Made own images (do not use mine…*recreate* them)
- Cite web images if used on title slide (14 pnt font ok)
- Obviously practiced multiple times
- Team members speaking approximately equal amounts