

MATH198 Weekly Update

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November 6th, 2015
Week 11

Abstract

Realistic particle bounce has been studied more carefully and Bruce Sherwood's *gas.py* and *doublependulum.py* are being analyzed for efficient implementation of mathematical concepts. The proposal draft has been finished and the website has been updated slightly to reflect the more finalized direction of the project.

1 Code Progress

The only major changes to code this week have been small quality of life changes (visual) and not anything major. I have been looking at Bruce Sherwood's examples but have not had the time to look at them in close detail, however his *doublependulum.py* program clearly also follows the Lagrangian method, albeit apparently a slightly different formation than the one I detailed in my proposal. I've been looking into various ways to make the program display more information, including popup windows and graphs that could show the user plots such as velocity vs. time for the kinematics project, for example. I think these would be very good and insightful luxuries should I have the time to implement them once the main parts of each sub-project are complete.

I have finished the proposal (draft) for my project and am submitting it today for review. In the same vein, I have altered the website a bit to reflect my more finalized direction for the project.

2 Plans For Next Week

Once my proposal has been review, if it's finalized then I will be able to move on definitely to completing the project. If I need tweaks, those will affect what I do in the future e.g. if a subproject is deemed too complicated, I'll remove any future work on it. Once I'm done with my proposal the timeline for my project should be straightforward.

I plan to study Bruce Sherwood's examples in detail to see how I may implement my version efficiently, and I also want to start devising a method of how I

will represent the quantum states of the hydrogen atom for that sub-project.
(current idea: random distribution of points based on probability density)