Title

Author 1 [*]   Author 2 [†]   Author 3 [‡]

October 18, 2019

Abstract

Place your abstract here.

1 Introduction

The introduction goes here. Start by drawing your reader in.

Give the mathematical and scientific background and analysis required to understand your project. Include all relevant equations.

Tell us very briefly what you are doing in the project.

2 Methods

Methods goes here. Methods are minimalistic. Methods describe what an intelligent reader capable of programming would need to know to reproduce your work. You need to tell your reader you are using Python, NumPy, SciPy, and Matplotlibs. You need to mention that your ODE-solver is `odeint`. However, the methods section is not a Python programming guide! Do not give a blow-by-blow of your code; assume your reader can figure out how to do the line-by-line coding.

3 USA population: results and conclusions

Make sure your figures are readable when you upload your paper to TurnItIn. You can upload multiple PDFs to TurnItIn before the deadline. TurnItIn reduces the image quality of your document, often making figures difficult to read.

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[*]Put here comments or information about Author 1, if desired.

[†]Put here comments or information about Author 2, if desired.

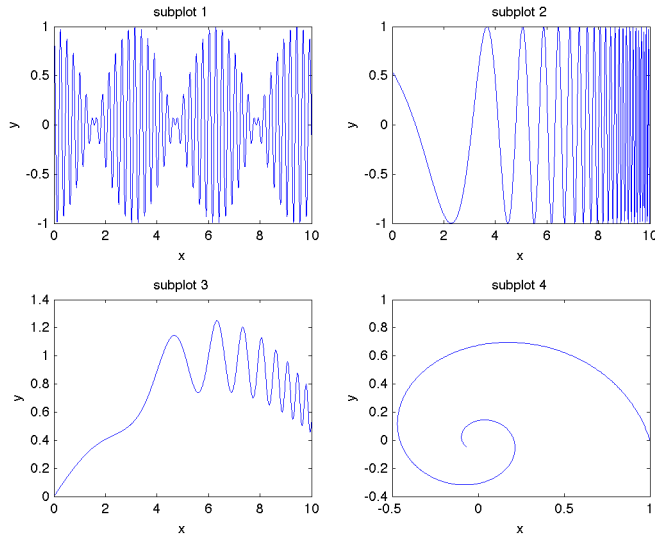[‡]Put here comments or information about Author 3, if desired.

Figure 1: Place here information for the figure.

You can reference the floating figure; it is figure 1. You may find it weird that the label is in the caption, and it is. This is a LaTeX bug. If it isn't in the caption, we will get the label for the section and not for the figure.

Here's the table format for the Population Results:

Fit	US population (millions)			Reduced Model Predictions		
Model	P_0	L	r	2010 Data	Prediction	Error %
Exponential	P_0		r	308.7	341.4	10.6
Logistic	P_0	L	r	308.7		
Gompertz	P_0	L	r	308.7		
Fit	Bryan TX population (thousands)			Reduced Model Predictions		
Exponential	0.503		0.0264	65,660	76,394	16.4
Logistic	0.523	10.17	0.0421	65,660	65,480	-0.3
Gompertz	0.512	29.21	0.0122	65,660	68,036	3.6

And a table for comparing the different models:

	R^2			Prediction Error %		
Data	Exponential	Logistic	Gompertz	Exponential	Logistic	Gompertz
USA				10.6%		
Bryan, TX	0.950	0.998	0.998	16.35%	-0.27%	3.62%

4   Other population: results and conclusions

Put other results and conclusions here.

5 Conclusion

Put the conclusions here. (**?**)

Group Work Assessment

Here's my group work assessment information.
This is what I did:

1. I did this.
2. And I did that.
3. I did another thing.

This is what my partner did:

1. They did this thing.
2. They did that thing.

Tell me about any particular problems or successes you had?
Is there anything you would do differently if you got a do-over?
Would you want to work with this person/these people again?
If you had $100 to distribute among the group members according to the contribution to the group project, how do you think this should be distributed? Please give some reasons why.

Reflection

Write your reflection as a letter, starting, "Dear Dr. Linhart" and concluding Sincerely, (or Warmly, Cordially, Best, etc.) your name. Your reflection should be at least 250 words long (this is 3/4 of a page). The main question is: what did you learn from this project? I really want to hear about the specifics and examples, not generalities. Here are some things you can put in your reflection:

1. What is the most important thing you got out of doing this project? While the course is all about teaching you math, mathematical modeling, and writing/communicating, your answer still might be that you got a lesson on procrastination or working with others. Know what it is and tell me about it.

2. This is a mathematical modeling class. Math and mathematical modeling are central learning objective for the course, so comment on these even if they are already familiar. Some things to consider:

    a) What math/mathematical models are in this project?
    b) Anything new to you? Did you learn anything new about a familiar topic?

    c) Did you see the math/mathematical model used in a way you haven't seen them used before?

    d) Think back to the dialog you wrote at the beginning of the semester. What steps in the mathematical modeling process do you see at work in this mathematical model?

    e) Do these models work well or poorly, and why?

3. This is a writing and communication class. Since writing/communication is central to the course, comment on this. Some things to ponder:

    a) We are always emphasizing audience, purpose and logical organization. Did these influence what/how you wrote?

    b) Did you get any helpful feedback on a draft?

    c) Have you done anything different in than what you've done before?

    d) Was writing the abstract easier this time?

4. What did you learn about Python in this project?

5. What did you learn about LaTeX in this project?

6. What did you learn about time management in this project?

7. What did you learn about working with others in this project?