Jarvis Bulldog Team

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Team Mentors: Je'aime Powell
TACC

Team Theme Song
  i.   Song name : Hey Bulldog
  ii. Artist   : The Beatles
  iii. URL Link to the song: https://www.youtube.com/watch?v=M4vbJQ-MrKo

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Our Goals:

1) Redesigning MATH 3390: Computational and Mathematical Biology, using HPC Open Sources from Science Gateways.
2) Building a website for MATH 3390: Computational and Mathematical Biology, using the HPC Open Sources.
3) Piloting the redesigned course in Spring 2024.
4) Conducting surveys and evaluations for the course.

Url to our team GitHub repository:
https://github.com/wsamyono/BulldogTeamFacHackGA23

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MATH 3390: Computational and Mathematical Biology

Course Description

In some cases, it is too dangerous or impossible to do an experiment, so we can do numerical experiments through mathematical modeling and simulation. Besides learning mathematical modeling, the students in this course will learn basic commands, syntaxes, and fundamental programming in Python and use them for solving problems in biology. The course targeted students having major in mathematics, and biology and chemistry with minor in mathematics who are interested in learning computational and mathematical biology. The course consists of 3 parts: 1) fundamental programming in Python, 2) computational biology, and 3) mathematical biology.

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Potential Resource Needs

1) Google Colab
2) Yupiter Notebook
3) Anaconda Navigator
4) Python
5) SciPy
6) Sklearn
7) Others from Science Gateways including TACC and ACCESS

Note: I have an account for TACC: Texas Advanced Computing Center (utexas.edu)

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Sample Datasets

1) RCSB PDB Protein Data Bank: https://www.rcsb.org/
2) Genomic Data Commons Data Portal: https://portal.gdc.cancer.gov/
3) Data from students in Biology conducting in vitro experiments by inducing nanoparticles into cancer cells. Data can be acquired directly from the students and the biology faculty members.
4) Other biology data from Science Gateways.