

# Homework Assignment #9

## Due Thu, February 21, 9:30am

### Flow Chart

Write a flow chart for your main project program. Be as detailed as possible. This might even mean that you have one less detailed flow chart <sup>10</sup> and then more detailed flow chart elements. For the more detailed flow chart(s) you may want to list the main variables for your program <sup>11</sup>

#### Optional, Near Future:

You will need this flow chart (and list of variables) for writing your program. You might even want to start working on the core parts of your main project program. My major advice, however, is that you write your program successively. Do not write the whole program at once, but instead step by step and test each step as you go.

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<sup>10</sup>e.g. for Andrew, Jake, Coby, Jeanine, and JJ you will have a time-loop (or update step) and Grant you might have overall flow chart for neural network, so loop over iterations.

<sup>11</sup>e.g. Andrew how exactly will you update positions and velocities, and how exactly will you determine the various types of neighboring fish. Jake how exactly will you update the phases  $\delta_i$  and how will you update  $V_i$  etc. Coby, how exactly will you determine the forces  $F_{i,x}$ ,  $F_{i,y}$ ,  $F_{i,z}$  for each particle  $i$ , and how exactly will you determine the distance  $r_{ij}$ . Jeanine, how exactly will you do the update, which variables will you need and how do they get updated? JJ which vectors or matrices will you need and how exactly do they get updated and which do not get updated but are constant, so are initialized at beginning (or you might already think about analysis, how would you loop over variations for example of your memory set). Grant, how exactly do you update  $w_{ij}$  and  $w_i$  and how exactly do you use the  $\phi$  function.