**Name:**

**Advanced Programming in C++**

**Lab Exercise 5/7/2025**

**Marine Biology Case Study**

In this activity, you will build a marine ecosystem simulation. The project consists of a variety of classes:

AquaFish

Display

Environment

Fish

Neighborhood

Position

RandGen

Simulation

apstring

apvector

apmatrix

Note1: apvector and apmatrix are template classes

Note 2: There is also a utility package (utils.h and utils.cpp).

1. Create a project using these classes. You should also include a driver to run the simulation. I have provided one (fishsim.cpp) for you to use. When your simulation is running submit a screen shot of your running simulation.
2. Create a copy of your working project and modify it so that instead of using apstring, apvector, and apmatrix, you will use string, vector, and matrix classes. When your simulation is running submit a screen shot of your running simulation.