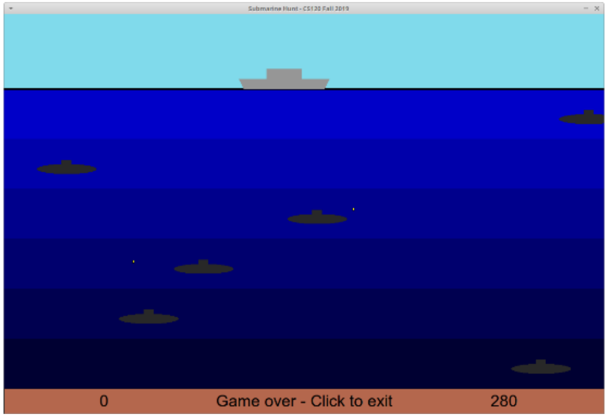
CS 120
Sub Hunt Final Project
Due: Noon Thursday, December 19

The final project this term will be to imitate the classic Atari 2600 game Sub Hunt (https://www.youtube.com/watch?v=k_KIatm4CBM). We will be doing this incrementally. **You may not work with members of the other section.** This will involve at least the following classes:

- GUI – the basic window in which everything is drawn and moves. There will additionally be three displays: status/instructions, score and time remaining.
- Game – the brains of the simulation. It causes every action and keeps track of everything. Most of the work takes place in the primary event loop in the `play()` method.
- Destroyer – the ship that moves back and forth on the top of the water and drops depth charges on the subs below.
- DepthCharge – the explosive devices that the destroyer drops.
- SubManager – "manages" the submarines. Sits between the game and the subs.
- Submarine – one submarine that traverses the screen and may be sunk with a depth charge.

The game will be completed in increments. You need to turn in your code once you have completed each phase.

- Step 1: The GUI class and the Game class. The GUI will be fully functional with a window showing 6-8 lanes for the submarines to traverse, the current score, the current time remaining, and instructions. The Game class will have enough in the main event loop to test the GUI. A class template with testing code will be given on socrates.
- Step 2: The Destroyer class. The destroyer will move left and right on top of the water. The Game class will be able to accept the following keyboard commands: 'Left', 'Right', 'q' (for quit), 'p' (for pause) and later 'space'. A class template will be given on socrates.
- Step 3: The SubManager and Submarine classes. The Submarine class will represent a single submarine created and controlled by the SubManager. A class template will be given on socrates.
- Step 4: The DepthCharge class. The DepthCharge class will represent a single depth charge as it falls through the water. A class template will be given on socrates.
- Step 5: Interactions. When the depth charges are "near enough" to the submarines, both the depth charge and submarine are destroyed and points are given.
- Step 6: Bonus features. Students may choose to add *BONUS* features. Some ideas will be discussed in class, but creativity is good! For extra credit, you *must* identify the bonus features in a comment at the top of either your program file or, if you're keeping each class in a separate file, at the top of the subhuntgame.py file.



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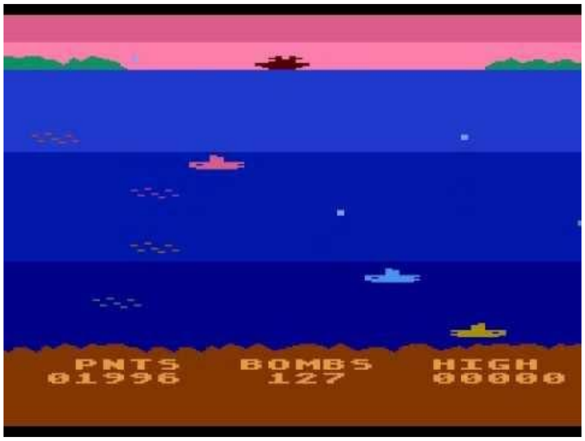
0 Game over - Click to exit 280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