**Marine Biology Case Study**

**Free Response Assignment #2**

A man rows a boat out into our "fish bay". He drops a hook baited with irresistible bait. If a fish swims into the area with the hook it is caught. This question will deal with a partial implementation of this scenario.

A.      First we need a way to remove a fish from the lake. Write the function removeFish which takes the fish out of the lake.

void fish::removeFish();

//Pre: the fish is in the lake

//Post: amIDefined == false

B.       Write the function catchFish that returns true if a fish is in the same location as the fish hook.

bool catchFish(position fishHook, environment env)

//Pre: fishHook is the position of the fish hook in the bay

//Post: returns true if there is a fish in the same position as the fish hook

C.       Write the function keepFishing that returns how many fish have been caught so far. fishCaught is the number of fish that have been caught up to this time. The fisherman randomly chooses the position to drop his hook each time. If he catches a fish it is removed from the lake, you may assume that catchFish and removeFish work as specified.

int keepFishing(int fishCaught, environment env)

//Pre: There are fish in the bay, fishCaught is the number of fish caught so far

//Post: returns fishcaught + 1 if the fisherman catches a fish.