**ECON381 FALL 2024**

**Homework Assignment 2**

**Questions 1:** During game play you will add and remove keys to the board. What kind of operations would that mean? Please elaborate.

**Answer:** These processes usually occur as follows:

**Add operation:** Adding a tile to the board means adding a new element to the end of the existing array (array or list).

- **In Java:** If you are using array, this requires an array expansion (resize). However, if you are using ArrayList, stones can be added directly with the add() method.

**Remove operation:** Removing a piece from the board requires removing one element from the array and rearranging the remaining pieces accordingly.

- **In Java:** If you use an array, you need to fill in the gaps by shifting the elements. If you are using ArrayList, the remove() method makes your job easier.

**Question 2:** To determine if a user is done, what kinds of checks would you need to do? Please elaborate.

**Answer:** To check if a player is finished:

**Block check:** All 14 tiles must meet one of the following rules:

**1. Blocks:** 3 or more tiles must be together. Block types:

-Consecutive tiles of the same color (e.g. 2, 3, 4, 5 blue).

-Same number, different colors (e.g. 11 blue, 11 yellow, 11 black).

**2. 7 pairs:** 7 pairs of the same color and the same number must be created.

**Question 3:** Would you rather hold the 14 keys in the Okey board in a single fixed size Java array? Or would you have multiple arrays or linked lists to hold the blocks? Please elaborate.

Multiple arrays and linked lists would be my preference. It has advantages such as being easy to keep blocks seperate and adding/removing tiles more efficiently due to its dynamic structure.

If the tiles will be grouped continuously (blocks will be created) as per the game rules, it is more advantageous to use linked lists or more than one list. However, a single fixed size array is sufficient to start with.