SET 2

Theme: Containers. ADT.
Solve problems.

1. List

Filter a list to keep only elements that have a certain property.

a) ADT List
b) Subalg. filter (specification & pseudocode)
(not as List operation)

Assume: we have a type FunctionHasProperty, and we are going to pass as an argument of that kind (a function)

2. Stacks and queues

2.1. Define a **Queue** over a **Stack**
Assume: the only container available to store elements of Queue is Stack

Requirements:

ADT, data structure, pseudocode, time complexity
There should be TWO versions of the solution.
Version A: The queue should be efficient when adding an item.
Version B: The queue should be efficient when popping an item
consider only next operations:
stack : initEmpySt, isEmptySt, push, pop
queue: initEmpyQ, isEmptyQ, enqueue, dequeue

2.2. Define a **Stack** over a **Queue**

3. Maps

3.1. Define a **Set** over a **Map**
3.2. Define a **Bag** over a **Map**
3.3. Define a **Vector** over a **Map**