SE311 SPRING 2018-2019 / 05/06-03-2019
Lab Work 3: Iterator Pattern
Goal: Using Iterator Pattern through an example.

1. Download and run IteratorPattern.java from Blackboard Week 3.

2. Your first task is to create a second iterator that traverses only **odd** numbered elements. Also, **`createIterator`** method will accept a **type** argument which is an integer value and it will return either a regular iterator or the odd numbered iterator. The user will choose between the regular iterator and odd numbered iterator by passing different type values. (See Week 3 slide #18 for an illustration of odd numbered iterator.)

3. Your second task is to customize your iterators so, they will start from an arbitrary position. It is like Java's **`listIterator (int index)`**, where **index** is the starting position you want for iterator to begin in the list. The java language has built-in support for that. Slide #38 has an example for that. You will implement the same thing assuming that the language does not have this capability.

   Hint: **`createIterator`** will accept a second parameter for index. The first parameter is your **type** value.

4. Moreover, you have some error cases that you need to give your attention:

   - In the first task, if one enters an even number for odd numbered iterator, you will raise an exception. Don't forget that "0" is even too.

   - In the second task, if one enters an index that is smaller than 0 or greater than the number of your elements, you should throw an **`ArrayIndexOutOfBounds`** exception.