# Distributed Applications – Session 5

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# Lists

- A list in java is a dynamic array that can grow or shrink in size dynamically.
- There are many types of Lists in java, we will only use LinkedLists here.
- To create a new linked list use this code List list = new LinkedList();
- Use add(Object o) to add new item.
- Use remove(int index) to remove and return an item by index.
- Use get(int index) to retrieve an item by index.

# Lists - cont

- size() returns the number of elements in list.
- set(int index, Object item) replace element at index with item.
- Contains(Object item) returns true if item exists in list.
- indexOf(Object item) returns the index of item in list, it returns -1 if item does not exist.
- We can iterate over list objects using foreach loop.

# Blocking Queue

- A blocking queue is used for communication between threads.
- It blocks when a thread tries to write to it and it is full and also when a thread tries to read from it and it is empty.
- It is shared between multiple threads that write (produce) and read (consume) data from it.
- An example code can be found on github.

# Exercise

- **Create a Blocking Queue class that is used to share strings between threads.**
- **Create a thread to write new strings to the queue and another thread to print each string and its length.**

# Good Luck