Arrays
Arrays: Introduction

• So far, we handled only one object in each line of code. When we wanted multiple objects to do something, we wrote multiple lines in DO TOGETHER structure.

• What if we have lots of objects? What if we want to do a group dance?

• With current approach, program will become too lengthy and unmanageable!
Arrays: Introduction

• Commercial programs use lot of data! We cannot afford to declare individual variables to keep each piece of data in memory!

• Let us look into a simple example.
Texas Lotto

• Texas Lottery involves selecting 6 unique numbers from the range of 1 to 50. We can put 50 balls with 50 numbers in a bowl, mix them and take 6 of them – they are guaranteed to be 6 different numbers!

• What if we want to computerize? Assuming that we know how to generate random number between 1 and 50, we can repeat it 6 times.
Texas Lotto ...

• It works well, but occasionally we may get a selection like 10, 18, 43, 18, 23, 34. Is there a problem?
• Yes, we cannot have repeating numbers in the selection: 10, 18, 43, 18, 23, 34. It is invalid!
• Then, how to ensure that the numbers are unique?
Ideas?

What should we do after generating each number?
• Check against the numbers selected so far
• If current number is a repetition, throw it away and reselect.

Selection can be considered as a collection or array of 6 numbers.
Typically, array has a name – need to use index # to access a specific item.

Stored items can be anything. For example, we can define array of objects too!
ok, enough of serious discussion, let us proceed to dance ...