

## Arrays in ActionScript3

An array is simply a list. We will declare an array with 3 messages:

```
var messages: Array=new Array("You can do it!","Keep up the good work!","Way to go!");
```

We now have an array names messages that has 3 items. The individual items in an array can be referred to using their position in the listing, starting with **ZERO**. Thus **messages[0]** is "You can do it!"

One of the reasons that arrays are so useful is that we can use a variable as the index instead of a constant. If **n** has a value of 2 then **messages[n]** is "Way to go!"

We could also have declared the array with no initial values:

```
var messages: Array=new Array();
```

We could then add values to the array by assigning a value:

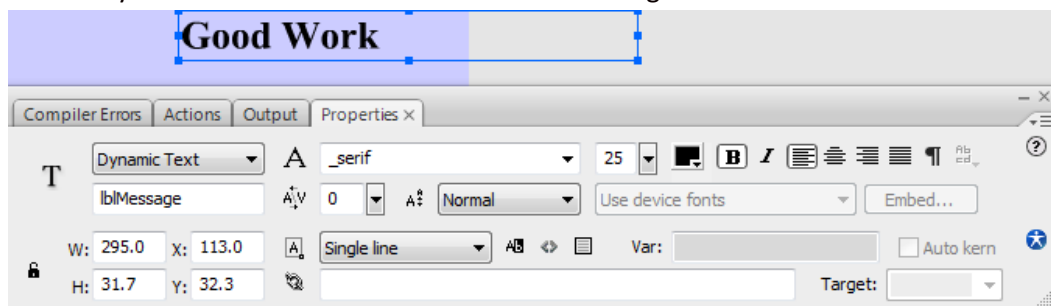
```
messages[0]="You can do it!";
```

We can also add new items to the end of the list by using the push method:

```
messages.push("Good job!");
```

Start a new ActionScript3 movie and save it as message fla.

1. Select the text tool and write good job in the text.
2. Make it dynamic text and name the instance lblMessage.



3. Make it big enough to hold other phrases, set the color and font to anything you like.

We will start with something familiar: making the message scroll across the stage from right to left, then reappear on the right:

```
var dx:int=-3; //text will scroll from right to left
this.addEventListener(Event.ENTER_FRAME,moveMessage);
function moveMessage(e:Event): void {
    lblMessage.x=lblMessage.x+dx;;
    if(lblMessage.x<-lblMessage.width) //exit on the left
    { lblMessage.x=stage.stageWidth; //reenter on the right
    } //restart on right
} //moveMessage
```

Next, instead of just displaying the same message each time it appear on the right, we will display the next message in the array.

```
var messages: Array=new Array("You can do it!","Keep up the good
work!","Way to go!");
var messageNumber=0; //to keep track of which message is next
var dx:int=-3; //text will scroll from right to left
this.addEventListener(Event.ENTER_FRAME,moveMessage);
function moveMessage(e:Event): void {
    lblMessage.x=lblMessage.x+dx;;
    if(lblMessage.x<-lblMessage.width) //exit on the left
    { messageNumber++; //add one to the counter
      if(messageNumber>=messages.length) //make sure it is not too much
        messageNumber=0; //if it is too much, set it back to zero
      lblMessage.text=messages[messageNumber]; //new message
      lblMessage.x=stage.stageWidth; //reenter on the right
    } //restart on right
} //moveMessage
```

It is very important that we do not refer to messages[3] if there are only 3 items in the list. Remember that if there are 3 items in the list, they are [0], [1], and [2]. Referring to messages[3] will cause a run time error:

TypeError: Error #2007: Parameter text must be non-null.

```
at flash.text::TextField/set text()
at Untitled_fla::MainTimeline/moveMessage()
```

An array has a property length, that gives the number of items in the list. In the example above messages.length is 3. If the index (messageNumber) is greater than OR equal to 3 there will be an error, so we must set it back to zero when it is 3 or more.

Question: After “Good work” disappears on the left, we never see that message again. Why? Which message appears after “Good work?” Can you adjust the code so that “Good work” appears again at the end?

#### Experiment:

- Use **push** to add a few more elements to the array.
- Add the command **messages.sort()**; What order do the messages appear in now?