

## Foundations of Computer Science, Spring 2009, Dr. Kay

Some definitions you should memorize:

A *string* is a finite ordered sequence of zero or more elements

An *alphabet* is a finite set of symbols

A *language* is a set of strings

$\Lambda$  (lambda): the empty string

$\emptyset$ : the empty set

If  $A$  is an alphabet, then  $A^*$  is a special set which is made up of all strings over  $A$

If  $s$  is a symbol in the alphabet  $A$ , then  $s^n$  is  $n$  copies of  $s$  concatenated together, e.g.

$$s^0 = \Lambda$$

$$s^1 = s$$

$$s^2 = ss$$

$$s^5 = sssss$$

If  $L$  is a language and  $M$  is another then  $LM$  is another language which has all strings that are made up by concatenating one string from  $L$  with another from  $M$