



## Why

We are often interested in a set of subsets of a given set.

## Definition

Let  $A$  be a non-empty set. A *subset system* is a pair  $(A, \mathcal{A})$  in which  $\mathcal{A} \subset \mathcal{P}(A)$ . In this common case we call the first set the *base set* and the second set the *distinguished subsets*. A subset of  $B \subset A$  which is not *distinguished* (i.e.,  $B \notin \mathcal{A}$ ) is called *undistinguished*.

**Example 1.** Let  $A$  be a nonempty set. Let  $\mathcal{A}$  be  $\mathcal{P}(A)$ . Then  $(A, \mathcal{A})$  is a subset system.



