

# Lists in Prolog



# How to work with lists

➤ A list in Prolog is written in square brackets:

- `[1, 2, 3].`
- `[].`

➤ A list can be written as a head and tail:

- `[Head | Tail].`

*Where Head is a 1st element (only one element); Tail is the rest of the list.*

➤ Built-in list operations:

- `length([1, 2, 3], X). % X = 3`
- `member(2, [1, 2, 3]). % true`
- `append([1, 2], [3, 4], X). % X = [1, 2, 3, 4].`
- `select(2, [1, 2, 3], X). % X = [1, 3].`



# Tasks

Do not use the built-in predicates.

- Write a predicate `last_element(List, X)`, which finds the last element of the list.
- Write a predicate `list_length(List, N)`, which calculates the length of the list.  
Write a predicate `sublist(Sub, List)` that finds all possible sublists.
- Write a predicate `sublist_of_length(Sub, List, N)`, which finds all sublists of length `N` in the list `List`.
- Write a predicate `split_list(List, L1, L2)`, which splits the list into two equal parts.
- Write a predicate `reverse_list(List, Reversed)`, which `reverses` the list.