Assignment 3 – Lists and arithmetic in Prolog

1. Write a goal, using **conc**, to delete the last three elements from a list L producing another list L1.
2. Write a goal to delete the first three elements and the last three elements from a list L producing list L2.
3. Develop Prolog code to define a relation **add_end(X, L, L1)** to add an item X to the end of list L. For example,
   add_end(a, [b,c,d], L1) ➔ L1 = [b, c, d, a].
4. Develop Prolog code to define a relation **del_all(X, L, L1)** to remove all items X (if any) from list L. For example,
   del_all(a, [a,b,a,c,d,a], L1) ➔ L1 = [b, c, d].
5. Develop Prolog code to define the relation r**everse1(List, ReversedList)** that reverses lists. For example,
   reverse1([a, b, c, d], L). ➔ L= [d, c, b, a]
6. Develop Prolog code to define the predicate **palindrome(List).**
7. Develop Prolog code to find maximum of two elements.
8. Develop Prolog code to find maximum element in a list.
9. Develop Prolog code to define the predicate **sumlist(List, Sum)** so that **Sum** is the sum of a given list of numbers **List**.
10. Develop Prolog code to define the predicate **ordered(List)** which is true if **List** is an ordered list of numbers. For example: **ordered([1,5,6,6,9,12]).**
11. Develop Prolog code to find factorial of a number.
12. Develop Prolog code to find sum of odd and even numbers in the list.
13. Develop Prolog code to make the given list into a palindrome. E.g.
    make_palindrome([a, b, c, d],L). ➔ L= [a, b, c, d, d, c, b, a]