**Sardar Vallabhbhai National Institute of Technology, Surat**

**Artificial Intelligence**

**Assignment-5**

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Admission No: U20CS135

Q1.Write a PROLOG program based on list:-

A) To find the length of a list.

B) To find whether given element is a member of a list.

C) To add the member of a given list (sum of elements of List).

D) To find the last element of a list.

E) To reverse a list.

Prolog File:

**% for finding the length**

list\_length([],0).

list\_length([\_|TAIL],N) :- list\_length(TAIL,N1), N is N1 + 1.

**% to find the member of list**

list\_member(X,[X|\_]).

list\_member(X,[\_|TAIL]) :- list\_member(X,TAIL).

**% to find the sum of list**

list\_sum([],0).

list\_sum([Head|Tail], Sum) :-

list\_sum(Tail,SumTemp),

Sum is Head + SumTemp.

**%find last element of list**

lastElement([Head]) :- write(Head).

lastElement([\_|Tail]):-

lastElement(Tail).

**% reverse of list**

list\_concat([],L,L).

list\_concat([X1|L1],L2,[X1|L3]) :- list\_concat(L1,L2,L3).

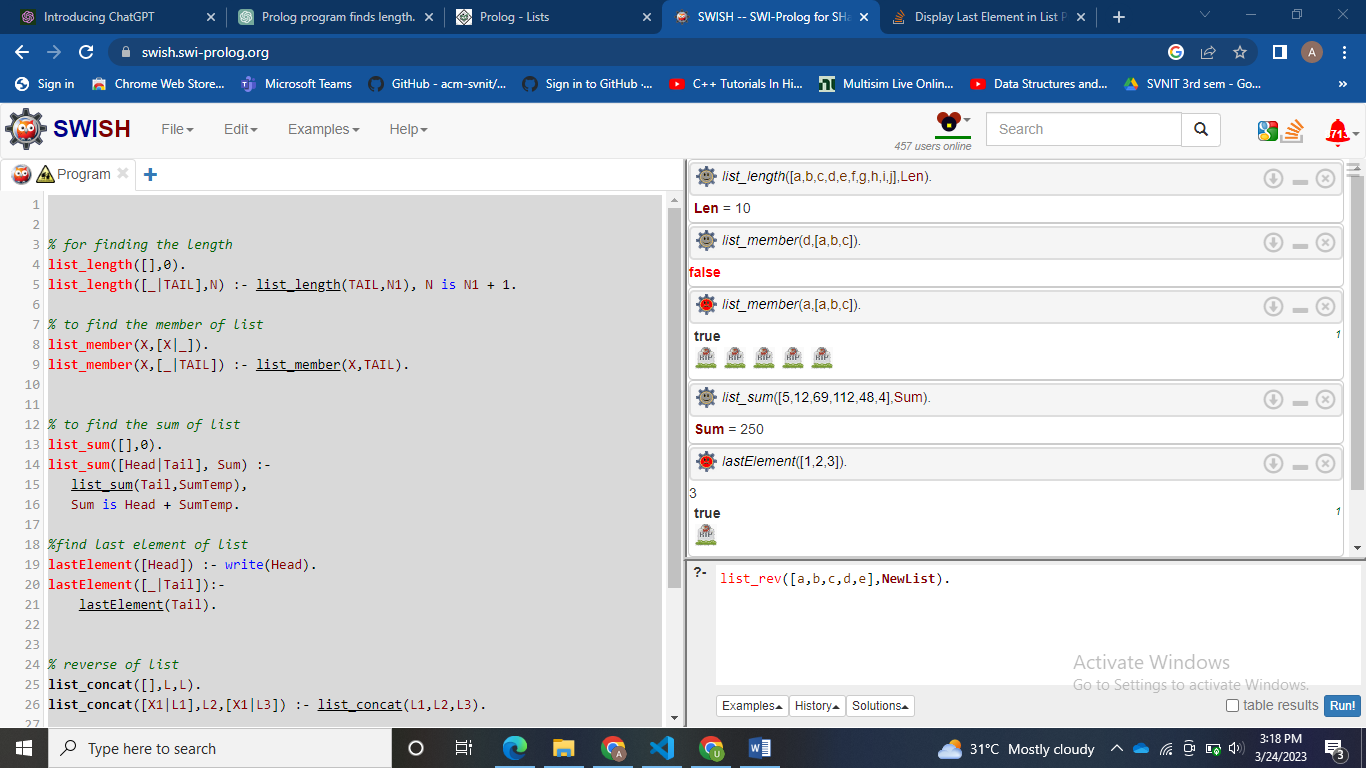
list\_rev([],[]).

list\_rev([Head|Tail],Reversed) :-

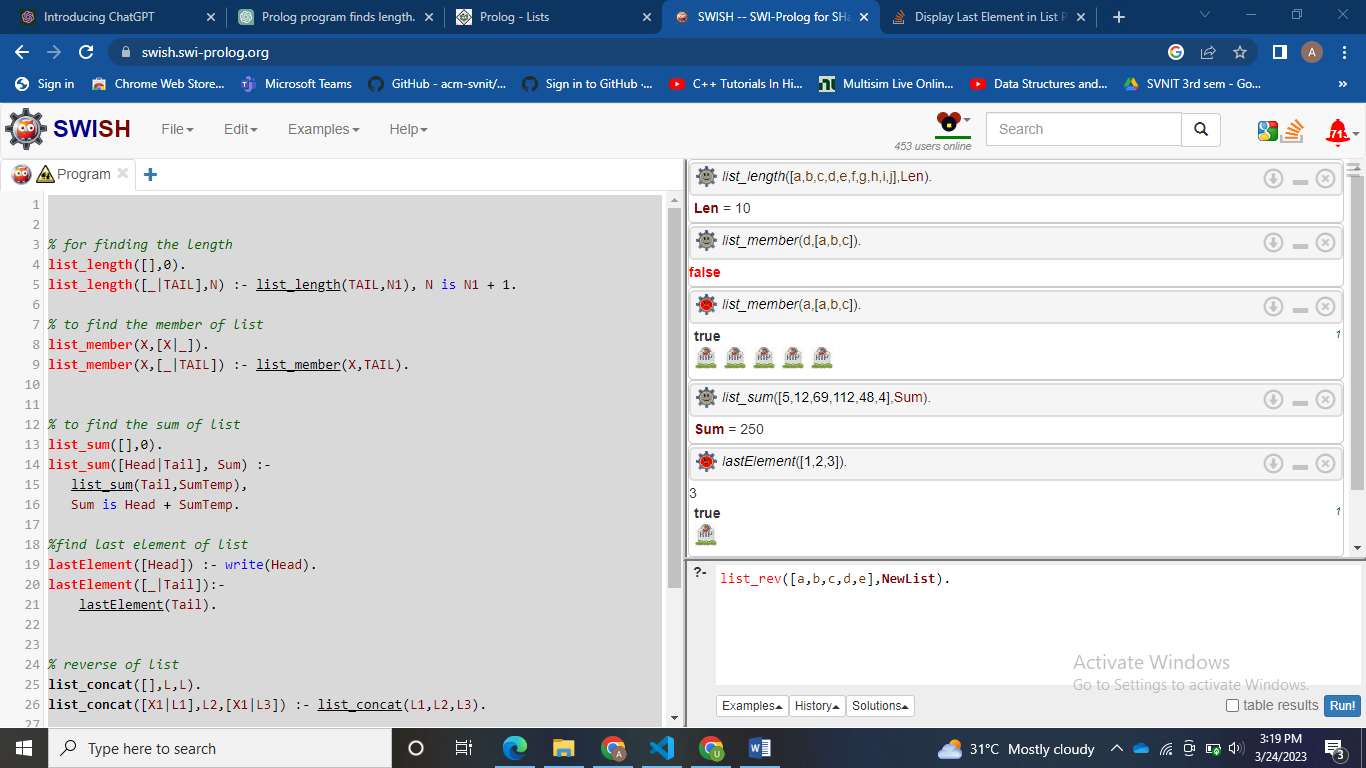
list\_rev(Tail, RevTail),list\_concat(RevTail, [Head],Reversed).

**Output:**

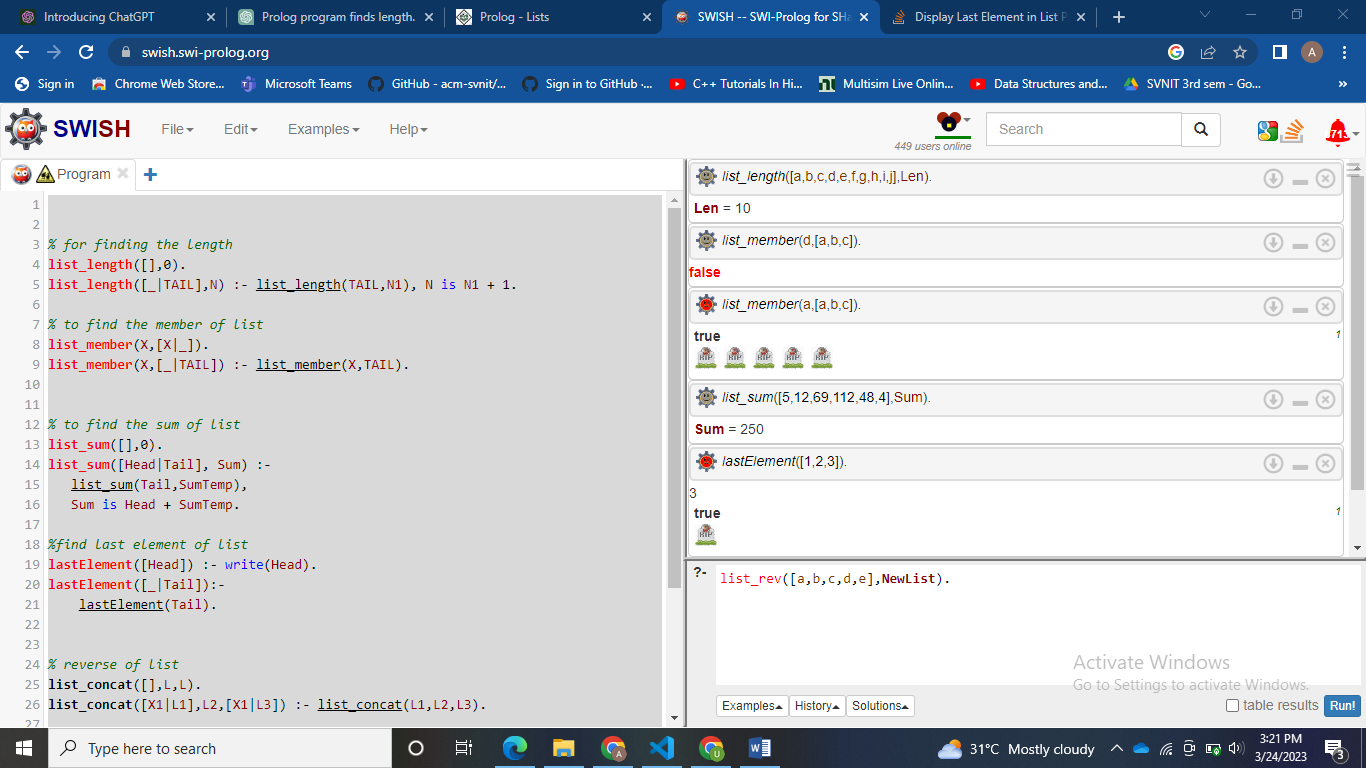
**1.**



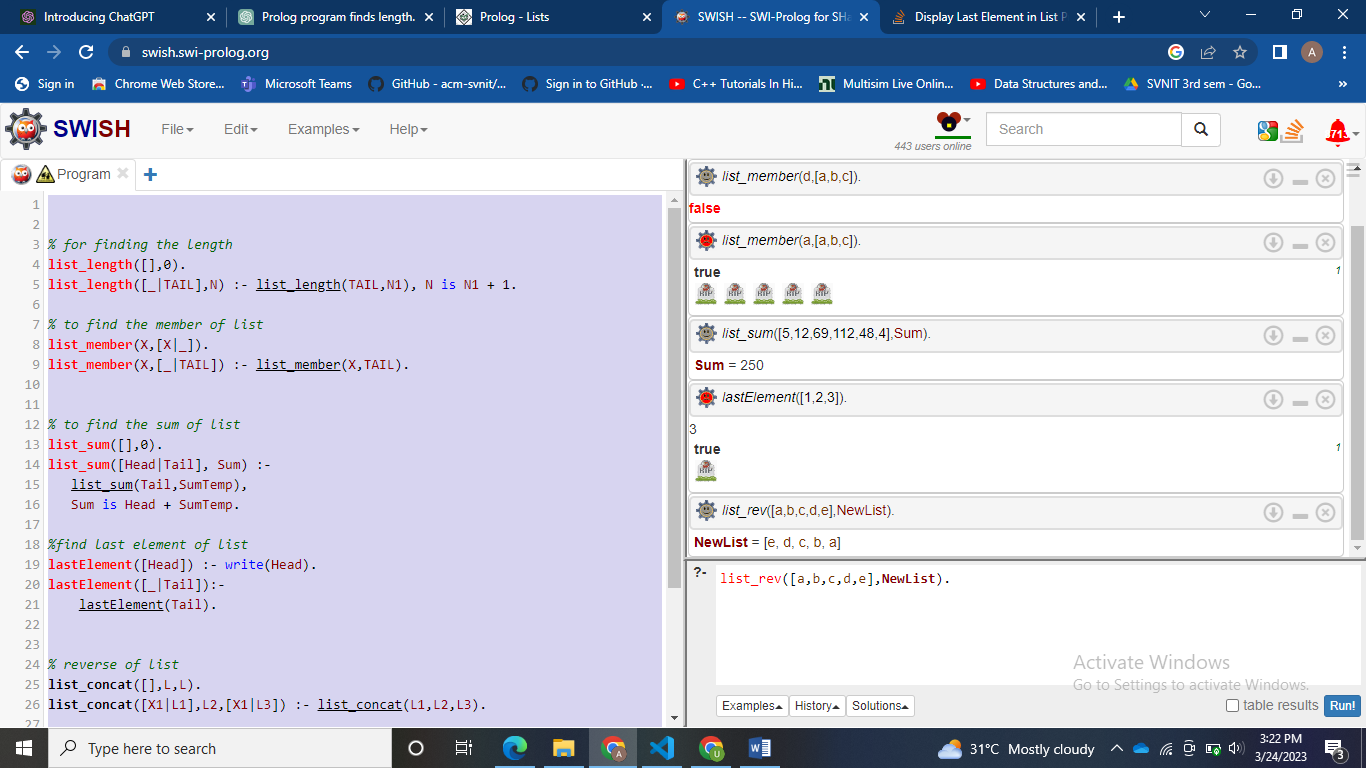
**2.**



**3.**



**4.**



**5.**

