**Actividad 5.1 Programación lógica**

%16. Define sum/2 to take a list of integers as input and return the output as their sum.

sum([], 0).

sum([Head|Tail], Result) :-

sum(Tail, SumTotal),

Result is Head + SumTotal.

% caso prueba sum([1,2,3],X)

%--------------------------------------------------

%18. Write a predicate dupli/2which takes two inputs: the first is a list, and the second will be the list with every element duplicated.

dupli([],[]).

dupli([Head|Tail],[Head,Head|Tailnew]) :- dupli(Tail,Tailnew).

% caso prueba dupli([a,b,c,c,d],X).

%--------------------------------------------------

%19. Write a predicate split/4that splits a list in two parts, the length of the first part is given.

split(L,0,[],L).

split(L,0,[],L).

split([Head|Tail],N,[Head|Tailnew],Newl) :- N > 0, N1 is N - 1, split(Tail,N1,Tailnew,Newl).

% caso prueba split([a,b,c,d,e,f,g,h,i,k],3,L1,L2).

%--------------------------------------------------