EXPERIMENT 30

Prolog program for run length encoding a list

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| run\_length\_encoding([], []). |
|  | run\_length\_encoding([H|T], [[H|SameElements]|Result]) :- |
|  | same\_elements(H, T, SameElements, Remaining), |
|  | run\_length\_encoding(Remaining, Result). |
|  |  |
|  | % Helper predicate to extract all consecutive identical elements |
|  | same\_elements(\_, [], [], []). |
|  | same\_elements(X, [X|T], [X|SameElements], Remaining) :- |
|  | same\_elements(X, T, SameElements, Remaining). |
|  | same\_elements(X, [Y|T], [], [Y|T]) :- |
|  | X \= Y. |
|  |  |
|  | % Main predicate to perform run-length encoding |
|  | run\_length\_encode(List, Encoded) :- |
|  | run\_length\_encoding(List, EncodedList), |
|  | flatten(EncodedList, Encoded). |