W2D2 Solution Q1a: Build inverted index using the "Modified" Algorithm.

INPUT	**Input Split-1**	**Input Split-2**	**Input Split-3**
Mapper Input	DocID **101** cat pat mat sat cat eat	DocID **201** pat mat sat pat mat eat	DocID **301** sat mat cat pat fat mat
MAP	**Mapper-1**	**Mapper-2**	**Mapper-3**
Mapper Output	((cat,101), 2) ((pat,101), 1) ((mat,101), 1) ((sat,101), 1) ((eat,101), 1)	((pat,201), 2) ((mat,201), 2) ((sat,201), 1) ((eat,201), 1)	((sat,301), 1) ((mat,301), 2) ((cat,301), 1) ((pat,301), 1) ((fat,301), 1)
PARTITION	**(cat, sat) -> Reducer-1**	**(others) -> Reducer-2**	
	((cat,101), 2) ((sat,101), 1) ((sat,201), 1) ((sat,301), 1) ((cat,301), 1)	((pat,101), 1) ((mat,101), 1) ((eat,101), 1) ((pat,201), 2) ((mat,201), 2) ((eat,201), 1) ((mat,301), 2) ((pat,301), 1) ((fat,301), 1)	
SHUFFLE & SORT			
Reducer Input	((cat,101), [2]) ((cat,301), [1]) ((sat,101), [1]) ((sat,201), [1]) ((sat,301), [1])	((eat,101), [1]) ((eat,201), [1]) ((fat,301), [1]) ((mat,101),[1]) ((mat,201),[2]) ((mat,301),[2]) ((pat,101), [1]) ((pat,201), [2]) ((pat,301), [1])	

REDUCE	**Reducer-1**	**Reducer-2**
Note: class Reducer initialize() reduce(tuple<t,n>,tf[f]) close()	tprev≠∅ P←new PostingsArray t=cat (cat≠∅):true (∅≠∅):false P←{101:2} tprev=cat t=cat (cat≠cat):false P←{101:2}→{301:1} tprev=cat t=sat (sat≠cat):true (cat≠∅):true **(cat, {101:2}→{301:1})** P←new PostingsArray P←{101:1} tprev=sat t=sat (sat≠sat):false P←{101:1}→{201:1} tprev=sat t=sat (sat≠sat):false P←{101:1}→{201:1}→{301:1} tprev=sat **(sat, {101:1}→{201:1}→{301:1})**	tprev≠∅ P←new PostingsArray t=eat (eat≠∅):true (∅≠∅):false P←{101:1} tprev=eat t=eat (eat≠eat):false P←{101:1}→{201:1} tprev=eat t=fat (fat≠eat):true (eat≠∅):true **(eat, {101:1}→{201:1})** P←new PostingsArray P←{301:1} tprev=fat **...** t=pat (pat≠pat):false P←{101:1}→{201:2} tprev=pat t=pat (pat≠pat):false P←{101:1}→{201:2}→{301:1} tprev=pat **(pat, {101:1}→{201:2}→{301:1})**
Reducer Output	**(cat, {101:2}→{301:1})** **(sat, {101:1}→{201:1}→{301:1})**	**(eat, {101:1}→{201:1})** **(fat, {301:1})** **(mat, {101:1}→{201:2}→{301:2})** **(pat, {101:1}→{201:2}→{301:1})**