CSE 103: BOOK- DISCRETE MATHEMATICS AND IT'S APPLICATIONS BY ROSEN :

SECTION 1.2

PROBLEM NO 23(ACCORDING TO FORMULA)

QUESTION :

Exercise 23 relates to inhabitants of the island of knights and knaves created by Smullyan, where **knights always tell the truth and knaves always lie.** You encounter two people, *A* and *B*. Determine, if possible, what *A* and *B* are if they address you in the ways described. If you cannot determine what these two people are, can you draw any conclusions?

A says "We are both knaves" and *B* says nothing.

ANSWER :

PERSON	STATEMENT	TYPE	EXPLANATION
A	We are both knaves	Knave	As a knave won't tell the truth, A and B both can't be knaves. But A can't be a knight as he already told that he was a knave,and knights don't lie. So, A must be a knave and B must be a knight.
B	Nothing	Knight	A knight does not lie,and saying nothing does not contradict this. So, B must be a knight.