Our perception of the real world is pervaded by concepts which do not have sharply defined boundaries –for example ,many ,tall, much larger than, Young ,etc . are true only to some degree and they are false to some degree as well. These concepts (facts ) can be called fuzzy or gray (vague ) concepts –a human brain Works with them,while computers may not do it.

The fuzzy theory provides a mechanism for representing linguistic constructs such as “many,” “low,” “medium,” “often,” “few.”

On the contrary, the traditional binary set theory describes crisp events, events that either do or do not occur. It uses probability theory to explain if an event will occur, measuring the chance with which a given event is expected to occur. The theory of fuzzy logic is based upon the notion of relative graded membership and so are the functions of mentation and cognitive processes.

The utility of fuzzy sets lies in their ability to model uncertain or ambiguous data, Fig.1.1, so often encountered in real life.